Sugar-Coating Risks: An Analysis of Sweetener Trade Associations’ Discursive Contributions to Public Negotiations of Risk

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Sarah N. Heiss
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This dissertation titled
Sugar-Coating Risks: An Analysis of Trade Associations Representing Sweeteners’
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Abstract

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Trade associations blur the boundaries established between research and education, as well as, advertising and advocacy. Recently, their hybrid roles as commercial and health promoters have been met with mixed reviews. While this hybridization has the potential to serve multiple stakeholder’s goals by promoting healthful eating and strong consumer bases for industry groups (Wansink & Peters, 2007), Ludwig and Nestle (2008) argued that "irreconcilable conflict" between private commercial and public health interests would likely keep organizations from adequately promoting health.

Given their potential to impact consumer health, it is important to examine how trade associations contribute to public understandings of food risks. Informed by a social construction of risk framework and Beck’s (1992) theory of risk society, I analyze the discursive contributions of trade associations representing the sweetener industry. Specifically, I use close-textual analysis to identify and critique reoccurring and forceful rhetorical patterns within and across the online discourses produced by trade associations representing high fructose corn syrup (the Corn Refiners Association), sugar (the Sugar Association), and low-calorie sweeteners (the Calorie Control Council).

My findings suggest that these trade associations provided a symbolic repertoire for identifying, making sense of, and managing risks. I argue that the trade associations
used strategic maneuvering, including fallacious reasoning, defining tactics, ambiguity, and framing, to highlight the health benefits of their products and diminish the risks. A focus on health, specifically the relationship between caloric intake and obesity, reflected healthism (Crawford, 1984) and nutritionism (Pollan, 2008). However, the trade associations broadened the scope of discussion about sweetener risks by highlighting the importance of the natural, taste, and consumer demand to consumption decisions.

I conclude by discussing the theoretical, practical, and ethical contributions of my findings. I argue that while there is much to gain from having trade associations promote public health, their messages were skewed toward corporate interests and served to undermine public health decisions. I advise scholars to keep a close eye on the discursive activities of these trade associations and suggest future analyses of health literacy and descriptions of “best practices” for professionals.

Approved: ____________________________________________

Benjamin R. Bates

Associate Professor of Communication Studies
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*** I Corinthians 15:10
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>iii</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td>v</td>
</tr>
<tr>
<td>List of Abbreviations</td>
<td>x</td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Chapter One: Literature Review</td>
<td>6</td>
</tr>
<tr>
<td>The Nature of Risk in Modernity</td>
<td>6</td>
</tr>
<tr>
<td>Risk Society</td>
<td>8</td>
</tr>
<tr>
<td>'Risk' Ideologies</td>
<td>10</td>
</tr>
<tr>
<td>The Translation of Food-Related Risks</td>
<td>12</td>
</tr>
<tr>
<td>Obesity As a Primary food-Related Risk</td>
<td>17</td>
</tr>
<tr>
<td>Reacting to Risk Communication</td>
<td>19</td>
</tr>
<tr>
<td>Categorizing Sweeteners</td>
<td>22</td>
</tr>
<tr>
<td>Nutritive Sweeteners: Sugars and Syrups</td>
<td>23</td>
</tr>
<tr>
<td>Nonnutritive Sweeteners</td>
<td>25</td>
</tr>
<tr>
<td>A Politic of Risk, Health, and Sweeteners</td>
<td>27</td>
</tr>
<tr>
<td>Constellations of Accusations and Guidelines</td>
<td>29</td>
</tr>
<tr>
<td>Co-opting Knowledge Through Research, Journals, and Conference</td>
<td>37</td>
</tr>
<tr>
<td>Co-opting Knowledge Through Public Health Policy</td>
<td>40</td>
</tr>
<tr>
<td>Co-opting Knowledge Though Health Promotion</td>
<td>44</td>
</tr>
<tr>
<td>Chapter Two: Methods</td>
<td>55</td>
</tr>
<tr>
<td>Rhetoric as a Discursive Practice</td>
<td>56</td>
</tr>
</tbody>
</table>
Chapter Three: When a Spoonful of Ambiguity Helps the Sweetener Go Down: An Analysis of the Sweet Surprise Campaign's Negotiation of Risks Associated with High Fructose Corn Syrup

Chapter Four: Naturally Sweet: An Analysis of the strategic positioning of sweeteners by the Sugar Association
Chapter Five: Calories, Demands, and so Many Voices: Exploring Loci of Quantity in Calorie Control Council's Argument for Low-Calorie Sweetener Consumption

Rhetorical Context................................................................. 167
Calorie Control Council .......................................................... 171
Study Rationale ....................................................................... 172
Analysis .................................................................................. 173
Sweetening Demand ............................................................... 174
Responding to Demand .......................................................... 181
Conclusion .............................................................................. 191
Risk Ideologies ........................................................................ 192
Locus of Quantity ..................................................................... 197
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argument Structure</td>
<td>200</td>
</tr>
<tr>
<td>Practical Implications for Stakeholders</td>
<td>202</td>
</tr>
<tr>
<td>Concluding Thoughts</td>
<td>204</td>
</tr>
<tr>
<td>Chapter Six: Conclusions</td>
<td>205</td>
</tr>
<tr>
<td>Identifying, Making Sense of, and Managing Risks</td>
<td>206</td>
</tr>
<tr>
<td>Identifying Risks</td>
<td>207</td>
</tr>
<tr>
<td>Situating Responsibility</td>
<td>210</td>
</tr>
<tr>
<td>Forging Sweet Alliances</td>
<td>212</td>
</tr>
<tr>
<td>Reflecting, Contributing, and Deflecting Risk Ideologies</td>
<td>215</td>
</tr>
<tr>
<td>Stakeholder Analysis of Discursive Contributions</td>
<td>220</td>
</tr>
<tr>
<td>Theoretical Implication</td>
<td>224</td>
</tr>
<tr>
<td>Ethical Implication</td>
<td>235</td>
</tr>
<tr>
<td>Practical Implications</td>
<td>241</td>
</tr>
<tr>
<td>Industry</td>
<td>242</td>
</tr>
<tr>
<td>Consumers</td>
<td>246</td>
</tr>
<tr>
<td>Public Health Agencies</td>
<td>249</td>
</tr>
<tr>
<td>Limitations</td>
<td>251</td>
</tr>
<tr>
<td>Directions for Future Research</td>
<td>255</td>
</tr>
<tr>
<td>Closing Thoughts</td>
<td>259</td>
</tr>
<tr>
<td>References</td>
<td>264</td>
</tr>
</tbody>
</table>
## List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABA</td>
<td>American Beverage Association</td>
</tr>
<tr>
<td>ADA</td>
<td>American Dietetic Association</td>
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<td>AMA</td>
<td>American Medical Association</td>
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<td>BMI</td>
<td>Body Mass Index</td>
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<td>CCC</td>
<td>Calorie Control Council</td>
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<td>CDC</td>
<td>Center for Disease Control and Prevention</td>
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<td>CRA</td>
<td>Corn Refiners Association</td>
</tr>
<tr>
<td>CTA</td>
<td>Close Textual Analysis</td>
</tr>
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<td>FAO</td>
<td>Food and Agriculture Organization</td>
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<td>FDA</td>
<td>U.S. Food and Drug Administration</td>
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<tr>
<td>GMA</td>
<td>Grocery Manufacturers Association</td>
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<tr>
<td>GRAS</td>
<td>Generally Recognized as Safe</td>
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<td>HFCS</td>
<td>High Fructose Corn Syrup</td>
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<td>IFBA</td>
<td>International Food and Beverage Alliance</td>
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<td>LDA</td>
<td>Lobbying Disclosure Act</td>
</tr>
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<td>PKU</td>
<td>Phenylketonuria</td>
</tr>
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<td>SA</td>
<td>Sugar Association</td>
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<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>
Introduction

Giddens (1991) asked, "So what is the truth about the food we eat? … What is good for you and what is bad for you? What should you avoid and what can you eat with impunity?" (p. 101). In contemporary society, “sugar has become the vehicle for the diet zealots to create a new soapbox” (Insel, Turner, & Ross, 2004, p. 156). “Cut sugar to trim fat! Bust sugar! Break the sugar habit! These battle cries falsely demonize sugar as a dietary villain. But what are the facts?,” a nutrition textbook asked students (Insel et al., 2004, p. 156). The answer to this question and Gidden’s (1991) questions are not thoroughly developed.

Though humans can base food decisions on a variety of criteria, such as taste, tradition, or convenience, risk has become a central criterion for members of risk societies (Beck, 1992; Glassner, 2007; Pollan, 2006, 2008). Guided by ideologies of healthism (Crawford, 1980) and nutritionism (Pollan, 2008), risk-averse consumers seek scientific and medical opinions concerning how to mitigate risks and promote health. However, inconsistencies exist within the advice, and scientific evidence is always changing (Pollan, 2008). The validity of claims concerning the risks associated with sweeteners and the subsequent policies are constantly contested by the scientific, health, and commercial communities.

While food risks have long been at the forefront of scientific approaches to managing health conditions (Lupton, 1996), Jones (2007) argued that the symbolic constitution and experiences of food risks have been relegated to the back burner. For my dissertation, I explore the intersection of risk, dietary advice, and food media to study
the unique contributions of food marketing communication to the social construction of food risks. Specifically, I am interested in the rhetorical strategies that attempt to perform both the role of commercial and health promotion (Wansink & Peters, 2007), attempts which have been met with mixed reviews. I explore how the trade associations representing the sweetener industry provide a symbolic repertoire for identifying, making sense of, and managing risks.

In Chapter One, I situate my study within three theoretical frameworks that help make sense of the social construction of food risks in public relations and marketing communications. To begin, I draw on Beck's (1992, 1999) notion of risk societies to address the social construction of risk within food contexts. Next, I highlight the roles that the ideologies of healthism (Crawford, 1980) and nutritionism (Pollan, 2008) have in identifying experts, defining risks, contributing to normative food practices, and assigning responsibility. Then, I address the various categories and uses of sweeteners, including table sugar, high fructose corn syrup, and artificial sweeteners. Finally, I address the contested role of the food industry in the production and translation of nutrition, risk, and health knoweldges.

Based on my review of the literature, I pose three research questions to focus my investigations of these associations’ messages:

RQ 1. Do trade associations representing the sweetener industry provide a symbolic repertoire for identifying, making sense of, and managing risks associated with sweeteners and, if so, how?

RQ2. How, if at all, do these discursive strategies reflect, contribute to, or distract from dominant risk ideologies related to food and health?
RQ3. How do particular stakeholders benefit more or less from these discursive strategies?

To answer these research questions, I perform case studies of the discursive contributions of three trade associations representing the sweetener industry using close-textual analysis (CTA). However, first I describe how rhetoric is both a practice and a means of analysis in Chapter Two. I begin my discussion of rhetoric by describing how rhetoric is a way of indentifying, making sense of, and managing our experiences of reality. Acknowledging the political aspects of rhetoric, I describe Burke (1969) and Heath’s (2009) description of the wrangle of the market in shaping public understandings of the relationship among health, risk, and food. After describing rhetoric as a discursive practice, I explain rhetorical criticism as a method for exploring discursive strategies. Specially, I explain the principles of Close Textual Analysis (CTA) and Campbell and Burkholder's (1997) four stages of analysis.

In Chapter Three, I explore the discursive contributions of the Corn Refiners Association (CRA) to the construction of high fructose corn syrup’s (HFCS) nutritional value. Specifically, I argue that the CRA relied heavily on science and scientific reasoning to develop their argument that HFCS has a valuable place in the human diet. However, much of the discourse relies on ambiguity and fallacious reasoning. A straw man fallacy emerged as the scientific evidence countering the campaign’s goals is labeled a myth and dismissed or not cited properly. This fallacy was also present as the campaign addressed the claims about HFCS's risks that are easier to defeat but ignored the larger and more difficult to win counter-arguments about the prevalence of added sugars in general, nutrient density, and socioeconomic disparities that influence access to
healthy foods. I conclude by discussing how these rhetorical strategies contribute to cultural ideologies that dominate public understandings of the relationship between their health, bodies, and food consumption. I also evaluate the CRA’s discursive contributions based on its ability to meet consumer and organizational goals.

In Chapter Four, I explore the rhetorical contributions of the Sugar Association (SA) to public understandings of sweeteners. I argue that much of the SA's rhetorical initiatives were aimed at establishing that nature and the natural are important guidelines for healthy eating. The SA appealed to notions of the natural to distinguish sugar from other food additives. By appealing to nature and the natural, sugar emerged as a healthy food additive as opposed to artificial sweeteners. Food additives, such as HFCS and fats, that are natural, however, were not easily defeated based on the criterion of naturalness, so in these limited passages weight management became central to the Association's discourse. I conclude by evaluating the Association’s discursive contributions to notions of healthy eating and to dominant risk ideologies. Finally, I consider the practical contributions of this analysis for various stakeholders.

In Chapter Five, I found that the Calorie Control Council (CCC), which represented low-calorie sweeteners, used appeals to consumers’ demands for a variety of safe, low-calorie sugar alternatives as a means of repositioning the responsibilities of key stakeholders. I identify the discursive strategies employed by the CCC to promote the consumption of alternative sweeteners while addressing health concerns. I argue that the CCC used an appeal to consumer demand for sweetness and variety to fuel their argument for not only the presence of current alternative sweeteners, but also the development and acceptance of new ones. This appeal to consumer demand also served
to distinguish the CCC and science as positive forces trying to help consumers attain a variety of sweeteners and public health agencies as often unnecessarily delaying consumers’ access to the foods they want. I conclude by evaluating the CCC’s discursive contributions to notions of healthy eating and dominant risk ideologies.

Finally, in Chapter Six I describe the reoccurring and forceful rhetorical patterns within and across the discourses produced by the CRA, SA, and CCC. I begin by responding to each research question. I summarize how the arguments, stylistics, definitional tactics, and message structures that mark the CRA, SA, and CCC’s discourses contribute to understandings of how to identify, make sense of, and manage risks related to sweeteners. Then, I discuss how these discursive themes reflect and respond to dominant risk ideologies and the needs of various stakeholders. After answering the research questions, I discuss how the case study findings contribute to theoretical, practical, and ethical understandings of industry discourses in risk societies. Then, I describe the limitations of my dissertation and identify areas for future research. Finally, I conclude by reflecting on my role and growth as a researcher and making a call to action for food communication scholarship.
Chapter One: Literature Review

Before analyzing the discursive contributions that trade associations representing sweeteners make to public negotiations of risk, it is first important to situate it within extant literature on the social construction of risk and science. To begin, I draw on Beck's (1992, 1999) notion of risk societies to address the social construction of risk within food contexts. Next, I highlight the roles that the ideologies of healthism (Crawford, 1980) and nutritionism (Pollan, 2008) have in identifying experts, defining risks, contributing to normative food practices, and assigning responsibility. Then, I address the various categories and uses of sweeteners, including table sugar, high fructose corn syrup, and artificial sweeteners. Finally, I address the contested role of the food industry in the production and translation of nutrition, risk, and health knowledges.

The Nature of Risk in Modernity

At the end of the 20th century, risk became one of the defining attributes of Western societies (Douglas & Wildavsky, 1982; Beck, 1992; Luhmann, 2002; Lupton, 1999; Giddens, 1991). The term risk has a spectrum of meanings that influence how it is studied (Lupton, 1999). To the realist, such as a clinical nutritionist or epidemiologist, a risk is recognized and defined as the product of the probability of a given event multiplied by the magnitude of its consequences. A highly likely event with a significantly undesirable outcome would be considered very risky. For example, recently scientists following this line of thought have concluded that our genes can cause us to over-consume food which increases some people’s risk for obesity (for review see Shell, 2002).
To the constructivist, such as those in psychometric studies, on the other hand, risk is viewed as a product of individuals’ frames of perception and understanding that structures their judgment (Lupton, 1999). Researchers practicing within this paradigm have found that people who adopt a promotion or regulatory focus tend to engage in behaviors that promote positive outcomes, such as eating foods to maximize health; whereas, people who are prevention focused engage in behaviors that prevent negative outcomes, such as eating to avoid illness (Spiegel, Grant-Pillow, & Higgins, 2004). From this perspective individual experiences and sense making are privileged over the social, cultural and historical context in which risks and frameworks for understanding hazards are understood (Lupton, 1999).

Finally, social constructionist perspectives situate risks in a social and cultural context in which they are understood, experienced, and negotiated (Lupton, 1999). Although, theorists in the social construction paradigm have different ontological beliefs about the nature of risk, they tend to agree that risks are never fully knowable outside of human observation. Thus, the identification and management of risk is mediated by pre-existing social structures, including cultural beliefs and discourses. Adopting a social constructionist standpoint, Beck (1992) described the difference between dangers and risks. Whereas dangers are events out of our control, risks are the “modern approach to foresee and control the future consequences of human action” (Beck, 1999, p. 3). Being at risk is a period where something bad could happen, but the bad event has not yet occurred. It is a time when we think something can and should be done to mitigate risk.

**Risk society.** Because understandings of risks connect individuals to the larger political and technological structures in which they participate, risk societies have
emerged as co-constructed understandings of how humans should make-sense of and behave in relation to reality. Risk societies represent the collective understandings of and organizing around a "systematic way of dealing with hazards and insecurities induced and introduced by modernization itself" (Beck, 1992, p. 21, original emphasis). Members of risk societies have come to believe that they have the capacity to predict and mitigate risks; however, through reflexivity, members have also come to recognize that many threats to humans have arisen from human action itself. In this section, I describe the primary attributes of risk societies in more detail.

Beck (1992, 1999) distinguished the ideologies of contemporary risk society from previous understandings and treatments of danger in human history. For most of history, dangers came from what Beck called "natural risks", such as floods and epidemics, and were attributed to uncontrollable supernatural forces, such as gods or spirits. Modernity has altered the ways in which Western societies envision the relationship between the self, the body, and the external, material world, as well as, notions of how to manage one’s self in the world (Lupton, 1996). Blay-Palmer (2008) explained that before urbanization people lived with and relied on nature. The boundaries of the body were considered open during these times (Lupton, 1999). The open body was considered relatively uncontrolled and viewed as a part of the natural world. Since the body was open, it was understood that it could be susceptible to invasion; however, many of these fears were related to outcomes of supernatural phenomena considered outside of the individual’s control. Very few precautions were taken to separate the world from the body or the body from the world.
Unlike this earlier time, Nordhaus and Shellenberg (2007) claimed that modern Western societies view nature as “something separate from human beings, and that it can be understood objectively through science” (p. 232). The endeavor toward finding a more objective truth that could then be manipulated appeals to societies, such as that dominant in the United States, that define nature as a “vast, unpopulated, mysterious, dangerous” space (Engelhardt, 2005, p. 343). In contemporary societies, risks are represented as complex webs of invisible threats, yet they are situated as knowable and preventable. Superstitious beliefs governing the relationship between nature and society have give way to a new condition where risk is considered objective, quantifiable, and manageable. However, while modernity has sought to uncover truths about the world to make it a safer place to inhabit, an unintended consequence has been a greater sense of uncertainty and lack of control (Tulloch & Lupton, 2003).

There are two primary reasons for this shift. First, risk assessment has become problematic because "it presupposes that there are methodologies to detect the presence of a risk factor and that all risk factors are recognizable as such...one can only do this with known risks. It provides no safeguard against unforeseeable risks" (Fuller, 2001, p. 182). The recognition that knowledge is constantly evolving has lead to questions about our current methods of evaluating risks. Second, the very same scientific and industrial endeavors we thought to be progressive and risk reducing are often now considered to have created their own risks. Moreover, these created risks are often global in scale and, potentially, as harmful as the risks they were meant to eliminate. Tulloch and Lupton (2003) wrote that "science and industry have come under increasing scrutiny because of the risks they are seen to generate" (p. 4). Our recognition that many contemporary risks
were produced by human activities originally designed to mitigate risks takes place through a process Beck (1992) referred to as reflexivity.

According to Beck (1992), when the world is perceived as increasingly risky, members of risk societies are pressured to take individual responsibility for their bodies by engaging in strict self-care regimens. Indeed, Lupton (1999) said that in modernity the ideal body is constructed as having closed boundaries, marking a desirable separation from the *impure* world around it. To separate the body from the world, individuals are conceived of as having control over the boundaries. People are, therefore, expected to monitor their bodies and protect their bodies from the incorporating the world. The construction of body as having certain boundaries has lead to a human-erected need to intervene to ensure bodily health, safety, and purity. Individuals are expected to manage their bodies and behaviors to avoid potential pollutants and contaminants on a day to day basis. In the face of these needs, 'risk' ideologies attempt to explain, the human experiences and the factors that guide the behaviors of a people within a risk society.

*Risk* ideologies. Although grounded in bodily and psychological experiences, health and risk are both constructed socially through communicative practices (Lupton, 1994). According to Robertson (2001), notions of risk are central in discourses related to well-being. Both health and risk highlight the relationship between existing states of being with potentially favorable and unfavorable future state (Őstberg, 2003). Health and risk are usually constructed as simple cause and effect relationships in that taking risks leads to an unfavorable future state, but reducing risk leads to better health.

Crawford (1980) identified the ideology of "healthism" as a particular set of contemporary cultural beliefs and values that describe human constructions of risk in
An ideology of healthism places value on engaging in activities that are thought to maintain or attain good health and avoid risk. Further, personal health is situated as the primary definition and achievement of well-being. Under the discourses of healthism, "healthiness is not viewed as a gift that comes for free" (Őstberg, 2003, p. 55); health, rather, reflects personal knowledge, responsibility, and dedication (Crawford, 1980). Beck (1992) explained that most people are “no longer concerned with attaining something ‘good’, but rather with preventing the worst” (p. 49, original emphasis).

Safety and health are the basis of and motivating force in a risk society. For instance, Beck nicely summarized the contemporary society which has resulted from omnipresent preoccupations with negotiating safety and risk: “The dream of class society is that everyone wants and ought to have a share of the pie. The utopia of the risk society is that everyone should be spared from poisoning” (p. 49, original emphasis). The focus of risk societies is to prevent poor health by managing risks, not by promoting good health.

Healthism acknowledges that health risks may originate outside of the individual; however, since risks are positioned as knowable and preventable, individuals are expected to act prudently and to be preoccupied with making calculated choices to ensure their safety (Crawford, 1980).

The consumption of food is one way in which all individuals in risk societies are expected to manage risks (Lupton, 1996). Pollan (2006) argued that as omnivores, humans are constantly faced with the question "what should we eat for dinner?" (p. 1). Unlike carnivores that eat meat or herbivores that eat vegetation, omnivores have choices. Pollan said that, in the beginning, humans' eating practices were determined by what was geographically available and the trial and error of sensory and personal experience.
Through social interaction, humans developed social rules to guide eating practices that would avoid the painful, and sometimes lethal, nature of personal experimentation. With globalization, however, people gained access to new foods and experiences, but lacked traditions and personal experience to make informed eating decisions. Because knowledge systems generated through cultural traditions or personal experiences became less available, the knowledge generated within the nutritional sciences became the dominant criterion for dietary choices (Pollan, 2008).

Pollan (2008) argued that Western societies' preoccupation with risk lent itself to understanding food in terms of its relationship to the negation of risk and the attainment of health. The assumption supports the belief that “as long as the ‘correct’ diet is followed faithfully then longevity and good health are guaranteed” (Lupton, 1996, p. 74). Aside from toxins, eating and foodstuffs are neither inherently healthy nor unhealthy; cultures label them as being one or the other (Beck, 1992; Lupton, 1996, 1999; Østberg, 2003). Focusing on food, Pollan identified an ideology of "nutritionism" as a set of guidelines that help Western societies make sense of risk, food, and consumption practices. Similar to the ideology of healthism (Crawford, 1980), nutritionism privileges the pursuit of health through the identification and avoidance of risks, but does so by the pursuit of health with adherence to recommendations that come from nutritional science.

**The translation of food-related risks.** Eating is an activity when people have to negotiate between taking so-called good things into the body and keeping so-called bad things out (Halkier, 2004). Pollan (2008) described the omnivore’s constant dilemma: While we must to eat for biological purposes, we must also consider our knowledge that the foods we are ingesting could be potentially harmful or unhealthy. The notion that
foods are linked to wellbeing is not new. Indeed, even in prehistoric times "a successful hunt or plentiful harvest determined whether the community survived periods of scarcity or not" (Fuller, 2001). However, it was not until relatively recently that the healthiness or riskiness of foods was assigned based on scientific evidence and logic rather than tradition or sensory experiences (Lupton, 1996; Pollan, 2006).

Functional nutrition research has demonstrated that the relationship between foods and physiological wellbeing is primarily mediated by nutrients and minerals (Lupton, 1996, 2005). In 1882, Justus von Liebig claimed that all life was sustained through the body’s use of nutrients—chemical constituents of food, such as fat, carbohydrates, and proteins (Pollan, 2008). Later, in 1912, Casimir Funk added that, to sustain health, living creatures also need vitamins and minerals. The importance of nutrients, vitamins and minerals for obtaining optimal health was popularized in the early twentieth-century as they were found to prevent diseases like scurvy and beriberi. Pollan reported that it was not long before a “belief took hold that these magic molecules also promoted growth in children, long life in adults, and, in a phrase of the time, “positive health” in everyone” (p. 21-22).

Because the riskiness of a food is based on the workings of the invisible particles it contains, to manage their health through consumption, consumers not only have to know what molecules are or are not healthy, but also which are present in or absent from food items. Consequently, individuals cannot rely on how they feel to predict their health status or the riskiness of a situation (Beck, 1992). Rather, the public relies on expert systems for predicting and assessing health risks. Östberg (2003) said that the authority
knowledge of functional nutrition is developed in laboratories by scientists, the nutritional information the public receives is more often than not diffused through the mass media, including news and commercial sources (Carvalho, 2007). According to Beck (1992), scientific findings are often simplified before they are communicated to the public through media reports. One way in which the media simplifies scientific information related to health risks is by creating binaries. Food has regularly been classified into a number of binary categories: “good or bad, masculine or feminine, powerful or weak, alive or dead, healthy or non-healthy, a comfort or a punishment, sophisticated or gauche, a sin or a virtue, animal or vegetable, raw or cooked, self or other” (Lupton, 1996, p. 1-2). Accordingly, it is now popular belief that better health comes from “more eating of the right ones, fewer of the wrong, and you would live longer, avoid chronic disease, and lose weight” (Pollan, 2008, p. 20). Though no food or nutrient is inherently good or bad (Brownell & Horgen, 2004), the common classification of a food based on its nutritional composition into one of these binaries has the potential to shape the incorporation of some foods and the exclusions of others in everyday diets.

In the contemporary U.S. culture, processed food products are often portrayed as unhealthy because they are higher in dietary fat and added sugars than are unprocessed foods (Lupton, 1996; Williams, Gabe, & Calan, 2000). Foods that were produced or raised using pesticides, growth hormones, antibiotics, and other novel processes, such as irradiation or forms of biotechnology, are also considered unhealthy because of the
invisible threats (Heasman & Mellentin, 2001). Media attention to bacterial and viral outbreaks, such as salmonella or bovine spongiform encephalopathy (BSE or ‘mad cow disease’), not only question the healthiness of a food product, but also position undercooking meats or cooking meats and vegetables together as unhealthy practices of food preparation. Since these foods or practices are considered bad for one’s health, it is culturally expected that individuals should not desire to incorporate these foods into their bodies (Lupton, 1996). If people were to consume too many bad foods or practice unhealthy food preparation, they would be judged negatively by others and possibly their self for lacking moral character to discipline their body.

Good foods, on the other hand, are considered to be those that promote health. While organic foods and certain nutrients like fiber or minerals like calcium are usually considered as good, Lupton (1996; 1999; 2005) pointed out that good foods are harder to identify than explicitly bad foods because risk societies are more concerned with negating risk than promoting safety or health. Additionally, Heasman and Mellentin (2001) pointed out that to forestall potentially misleading consumers about the possible health benefits of food products, government agencies tightly regulate the claims the medical and marketing field can make about the healthiness of a food or nutrient. At the same time, they strongly endorse the disclosure of potential risks and undesirable outcomes. These governmental concerns influence consumers every day. Indeed, Blay-Pamlcr (2008) suggested that food marketing and health claims often define food products by what they do not contain, rather than, what they do contain. The difficulty of or caution in identifying positively good foods reinforces Beck’s (1992) suggestion that the aim of eating as it is constructed by dominant discourses is not so much to find clearly good
foods with good chemical structures as it is to avoid the food that contains potentially harmful components. Because it is hard for consumers to keep up what is currently thought to be the healthiest solution and at any specific time the environments in which eating decisions are made are often distracting, consumers with limited motivation or opportunity will instead use heuristics to make dietary decisions, such as simply staying away from the bad stuff (Just & Payne, 2009; Lupton, 1996).

A second way the media simplifies scientific messages about food and risk is by creating metaphors and metonyms to explain the relationship between food and the body (Caplan & Caplan, 1997; Jacobsen, 2004). According to Jacobsen (2004), metaphors “are used to comprehend phenomena through reference to something else,” which in turn helps the users “structure thoughts, attitudes, and actions” (p. 59). Common contemporary metaphors relate food as fuel for the body. For example, filling up, fueling up, or refueling describe the effect food has on the body. Turner (1982) posited that contemporary mechanical metaphors of the body, coupled with food as fuel, are largely influenced by the writings of the eighteenth-century physician George Cheyne. Cheyne adopted the mechanical metaphor of the body to discuss the importance of dietary regimen in a series of popular books published between 1682 and 1742. In these writings, Cheyne described the body as “a series of pumps, pipes and canals that required the correct input of food and drink to maintain proper functioning, in conjunction with appropriate exercise and evacuation” (as cited in Turner, 1982, p. 260). Cheyne said that medical interventions, by which he meant drugs and surgery, were secondary to dietary changes; however, diet and nutrition became highly medicalized because of their understood relationship to health and risk reduction.
Lupton (1996) said that contemporary discourses position food as medicine. Hippocrates’ famous injunction to “let food be thy medicine” is commonly evoked to support this notion (as cited in Pollan, 2008, p. 29). Lupton (1996) provided examples of how food is communicated as medicine. To address the panic surrounding osteoporosis, calcium has been labeled a healthy and desirable mineral to ingest regularly. Other discourses label foods like tuna fish as a “smart food” aiding mental health. Finally, food is commonly constructed as a medicine when people have the flu or a common cold. It is considered common knowledge that people should drink juices with plenty of vitamin C and eat chicken noodle soup.

**Obesity as a primary food-related risk.** Mechanical and medicinal metaphors and metonyms communicate messages about “how health states are produced and maintained through dietary choices” (Lupton, 1996, p.83). According to Rogge and Greenwald (2004), these types of discourses have increasingly drawn the public's attention to weight status as an important indicator of health or future risks that can be produced or managed through dietary choices. In this section, I describe how a food's riskiness or healthfulness has been constructed from its perceived link to body weight.

According to the WHO (2008), “overweight and obesity are defined as abnormal or excessive fat accumulation that presents a risk to health” (para. 1). How much fat is considered too excessive or abnormal is determined by these groups by calculating an individual’s body mass index (BMI) (Gard & Wright, 2005, p. 92). BMI is body weight divided by height squared:

\[
\text{BMI} = \frac{\text{Weight (kg)}}{\text{Height (m)}^2}
\]
A person with a BMI of 30 or more is categorized as obese and a person with a BMI equal to or more than 25 as overweight. Those with BMI values below 25 are considered normal weight until they drop below 18.5 points. According to the Center for Disease Control and Prevention, CDC, an estimated two of every three American adults and more than one in six children and adolescents, are considered overweight or obese (Hedley et al., 2004). Though BMI is an imperfect measure and the points at which a people move between categories or enter into poor health statuses are arbitrary (Gard & Wright, 2005; Fuller, 2001), these categories have contributed to how excessive weight is understood as a risk that can be managed with dietary choices.

Much material has been published concerning the link between obesity and poor health. For instance, excess weight has been associated with increases in an individual's risk for chronic diseases, such as type 2 diabetes, heart diseases, stroke, sleep apnea, respiratory problems and some cancers (Wexler & Kepos, 2008). The CDC's Dr. Julie Gerberding explained that because obesity is a leading cause of the first three causes of death in the United States, heart disease, cancer, and strokes, it should be considered the most significant threat to Americans' health (CNN, 2003).

To address the prevalence and severity of excess weight, governments and public health officials have incorporated programs and initiatives to increase health literacy and healthier decision-making (Fuller, 2001). Although body weight is the product of a variety of factors, to combat the risks associated with excess body fat, Fuller (2001) observed that these educational programs typically draw on medical and scientific understandings of the body. From this standpoint, obesity is considered primarily to be the outcome of a person’s eating and exercise behaviors, which are deemed controllable.
(Gard & Wright, 2005). As such, it is understood that if individuals eat and exercise appropriately, they should maintain or obtain a thin, healthy body. The body is constructed as a machine and weight as a product of energy input and output.

After reviewing nutritional research, Drewnowski (2007) claimed that the blame for rising obesity rates seems to shift regularly, every 10 years or so, from fats to sugars and then back again. While dietary fat was of greatest concern in the 1990s, dietary carbohydrates—particularly sweeteners—have been a central focus of scientific, health, and lay discourses concerned with the dietary causes of obesity and its associated health conditions, including diabetes and heart disease (Borra & Bouchoux, 2009). In addition to being associated with weight status, sweeteners, such as sugar and high fructose corn syrup, have been linked to dental cavities. Artificial sweeteners, on the other hand, have been praised because they provide a comparable sweet taste to foods, yet contribute little to no calories when consumed. However, artificial sweeteners have been also positioned as dangerous due to research suggesting that artificial sweeteners increases overall caloric intakes which could lead to obesity and with the incidence of cancer (de la Peña, 2010). On the other hand, sweeteners are found in a variety of everyday foods and are considered to have important roles in both human nutrition and culinary arts.

**Reacting to Risk Communication.** Because meaning is co-constructed and constantly open for negotiation, our understandings of the material and symbolic realities, including understandings of food-related risks, can vary greatly (Lupton, 1996). Thus far, I have addressed how the culture of risk society is marked by a high risk aversion. While consumers may be keenly aware of the societal ideologies pressuring them to mitigate risks related to consumption and obesity, individuals' reactions to risks will vary.
At the personal-level, an individual's behavioral response to a food risk is shaped by their risk perception and risk aversion (Wansink, 2005).

Risk is an element of knowledge. An individual's ability to perceive and attempt to manage a risk is only as strong as his or her knowledge of a risk (Luhmann, 2002). That is, individuals cannot perceive or experience being at risk without first gaining information about a threat. A consumer's risk aversion will also impact how he or she experiences risk (Wansink, 2005). While risk perception refers to a consumer's understandings of he or she vulnerability, risk aversion refers to a "consumer's interpretation of the nature of the risk and how much he or she wants to avoid it" (p. 124).

Using the characteristics of risk aversion and risk perception, Wansink (2005) described and predicted the behavioral responses of four different consumer segments (the accountable segment, concerned segment, conservative segment, and alarmist segment) to information about food risks. First, the "accountable segment" of consumers is comprised of individuals who have low risk aversion and perception. Consumers in the “accountable segment” believe they are accountable for the effects of their behavioral choices. They do not seek information about risks and are likely to under-react or adopt short-term behavioral changes to those risk messages they do receive. Second, the "concerned segment" of consumers is characterized by people who have a low risk aversion and a heightened perception of their vulnerability to risks. Consumers in this group will likely react to risk messages by adopting short-term behaviors to mitigate personal risk, but they are very unlikely to campaign for public management of risks. Third, the "conservative segment" of consumers has a high risk aversion but a low risk perception. These consumers practice the cautions necessary to mitigate risks they know
about, but they are unlikely to seek information about new risks. These consumers are passive risk-takers, but will adopt long-term behavioral changes if they become strongly averse to a particular risk. Finally, the fourth group of consumers, the "alarmist segment," has a high risk aversion and high risk perception. This group of consumers is likely to overreact to risk information. They adopt long-term behavioral changes to mitigate perceived food risks and are the most likely of the four segments to "become politically involved or to actively attempt to persuade others" (p. 124-125).

Wansink’s (2005) descriptions of how risk perception and risk aversion shape individuals' responses to food risks is valuable to understanding how a person acts at the private-level to assess and manage risks; however, his description does not take into account the ways in which social structures enable and constrain an individual’s exposure to risks or ability to learn about and react to risks. Risk responses are also shaped by socio-economic issues (Beck, 1999). Beck (1992) explained that wealth is linked to the social production of and experience of risks. This is not to say that wealthy individuals are not inherently any more or less at risk for experiencing cancer, malnutrition, or gun violence than individuals with less money. Rather, wealth is a resource that risk-adverse people can use to avoid the fruition of a risk, which shapes perception of immediate risks; essentially, wealth gives people the ability to buy out of particular risks to some degree. For example, a wealthier person is more likely to be concerned about the nutritional content of his or her food to mitigate the risks of obesity than he or she is to consider the possibility of starvation. On the other hand, a person who has limited financial recourses who finds it difficult to secure food would be more concerned with the risk of starvation than the risks fat or sugar pose.
In sum, it is important to remember that individual consumers’ reactions to risks are shaped by their individual characteristics and enabled and constrained by the social systems in which they participate. Regardless of the material reality of perceived food threats and individual responses, in general consumers constantly experience being at risk because messages about risk-related issues dominate the discourses and social structures that characterize risk societies (Beck, 1992). While there is a constant pressure on people to seek and apply information about risks, messages about risk are not consistent. In fact, the meanings associated with sweeteners vary so much in contemporary discourses, that although some sweeteners are considered essential to human life, all are often translated as threats to health.

To understand the "meanings around a foodstuff such as sugar in the context of the political, economic, social, and historical settings in which it is consumed must be acknowledged" (Lupton, 1996, p. 15). Understanding the categories of sweeteners and their physiological and culinary contributions is informative to making sense of the claims concerning the relationship between obesity, food, and related practices and, subsequently, contemporary discourses about them. In the next sections, I describe the different classifications of sweeteners and review the functional and culinary perspectives concerning each before addressing how added sugar, high fructose corn syrup (HFCS) and artificial sweeteners have been positioned within risk society in efforts to mitigate excess weight and associated risks.

**Categorizing Sweeteners**

Peterson (2004) wrote that “the word sugar usually brings images of sugar cubes and spoonfuls of refined white crystals. But sugars can take many different forms. And
it can be found in some every unexpected places” (p. 4). There are a variety of
compounds that occur naturally or are added to food to make them taste sweet. Simple
carbohydrates, known as simple sugars, are derived from organic substances (as opposed
to human produced) and yield energy during digestion. They include sugars that occur
naturally in foods, including fructose in fruits and glucose in honey, and sugars or syrups
which are added to foods during processing or home cooking, such as white table sugar
from cane or beets and high fructose corn syrup (Drummond & Brefere, 2007). On the
other hand, artificial sweeteners and sugar alcohols provide a similar sweet flavor, but are
synthetic and provide virtually no energy (Rolfes, Pinna, & Whitney, 2006).

**Nutritive sweeteners: Sugars and syrups.** Carbohydrates are considered an
essential macronutrient in human nutrition and can be classified as simple or complex
based on their chemical structures. All carbohydrates consist of either one helix or
multiple linked helixes; each helix contains some arrangement of 6 carbon, 12 hydrogen,
and 6 oxygen molecules (Rolfes, Pinna, & Whitney, 2006). Simple carbohydrates,
commonly referred to as the sugars, include the monosaccharides and disaccharides.
Monosaccharides, including glucose, fructose, and galactose, consist of one helix.
Disaccharides are formed when monosaccharides combine. For example, when glucose
and fructose combine, they form sucrose, also known as table sugar. Other disaccharides
include maltose and lactose. Complex carbohydrates, such as starches and dietary fiber,
are chains of more than two simple sugars. Short carbohydrate chains may have as few
as three monosaccharides, but longer chains can contain hundreds or even thousands.

During digestion the body breaks carbohydrates into their monosaccharides parts.
This step in digestion is important because structural differences between simple
carbohydrates influence how they are used by the body and how they taste. For example, glucose is easily and quickly converted to energy for the body to use immediately. It enters the blood stream and provides energy which every cell requires and the brain and nervous system operate on almost entirely. This is why when people do not consume enough simple carbohydrates they experience dizziness, weakness, and fatigue due to low blood sugar (Rolfes, Pinna, & Whitney, 2006). Complex carbohydrates, on the other hand, are bulky and require many chemical reactions during digestion, so they take longer to process and absorb. The bulkiness of dietary fiber and the complex digestive processes also slows the body’s absorption of the other sugars. For example, a pear is high in simple and complex carbohydrates, so its sugars take longer to absorb and provide a greater feeling of satiety than a candy bar which is low in complex carbohydrates but high in simple sugars.

According to Spence (2004), “sugar will always be the dominant sweetener in the minds of consumers” (p. 76). However, sugar from sugarcane and sugar beets is only one part of a much broader sweetener market (Jolly, 2004). The most common alternative sweeteners include high fructose corn syrups and artificial sweeteners. High fructose corn syrup (HFCS) is derived from corn so it, like cane sugar, is a carbohydrate-based sweetener. HFCS has been added to food products, such as soft drinks and snack foods, as a sugar substitute since the late 1970s (Thompson, Garcia, & Dallafoir, 1996). Though HFCS, cane sugar, and honey all share similar chemical structures and caloric values (White, 2008), HFCS has become the sweetener of choice for many food companies because of its liquid form, intense sweet flavor, and nature as a preservative. Perhaps most importantly, HFCS costs less for major manufacturers to produce, incorporate into
products, and transport. For example, Duffey and Popkin (2008) claimed that the switch from sucrose to HFCS was facilitated by the co-occurrence of corn subsidies and high sugar prices. For beverage manufacturers, in particular, lower sweetener costs allowed increased serving sizes at little expense to the consumer (Glinsmann, Irausquin, & Park, 2008).

Carbohydrate-based sugars are related to body weight because they, like dietary fats and proteins, provide the body with calories (Rolfes, Pinna, & Whitney, 2006). A food item's energy potential is referred to as its caloric value. Fats provide the body with 9 calories per gram, as compared to 4 calories per gram of carbohydrates and 4 calories per gram of protein. Calories, regardless of their source, are absorbed during digestion and provide the body with energy for movement, tissue and nerve repair, cellular and mental functioning, and even sleep. The amount of calories a person needs varies based on their activity level, gender, and age among other factors. For example, an active 31-50 year old male is estimated to need 2,900 calories a day whereas a woman of the same age and activity level may only need 2,200 calories. Humans need calories to live; however, the body only needs so many calories to achieve proper nourishment and to perform its functions. When the body does not use the calories a person consumes to fuel its current activities, the energy is stored as bodily fat to be used during fasts, such as when we sleep, exercise, or skip a meal (Drummond & Brefere, 2007).

**Nonnutritive sweeteners.** Though HFCS is considered a sugar alternative, it is important to note that both corn and cane based sugars are simple carbohydrates. Though heavily refined and added to foods, both are considered natural because they come from plants sources and nutritive because they have calories (Insel et al.2004). Low-calorie
sweeteners, on the other hand, are produced by humans from synthetic materials and considered nonnutritive because they have few to no caloric values. Sugar alcohols and artificial sweeteners are two types of low-calorie sweeteners that are used to replace sugars in foods.

As of 2005, the Food and Drug Administration had approved five artificial sweeteners: saccharin (Sweet n’ low), aspartame (NutraSweet and Equal), sucrolose (Splenda), acesulfame potassium (Sunett and Sweet One), and neotame for sale and consumption. Common sugar alcohols include sorbitol, lactitol, mannitol, isomalt, and xylitol. Artificial sweeteners and sugar alcohols are used in a wide range of products including food, pharmaceuticals, and toothpastes. However, their most popular use is in diet and low calorie foods and beverages.

There are a variety of reasons artificial sweeteners have become popular in the American diet. From a culinary perspective, the primary use of added sugars is to alter the taste of a food item; however, no two sweeteners have the same sweetness profile (Alexander, 1998). Glucose, for example, is only mildly sweet compared to fructose or sucrose which are comparably intensely sweet (Rolfes, Pinna, & Whitney, 2006). Still, artificial sweeteners are much sweeter than nutritive sweeteners; for example, saccharin and aspartame are approximately 200-300 times sweeter than table sugar (Insel et al., 2004). Neotame can be up to 7,000 to 13,000 times sweeter than table sugar. This means that food companies can use less of a product to achieve a sweet taste, which reduces costs. Consumer demand has also driven the production of foods with artificial sweeteners (de la Peña, 2011) Because artificial sweeteners do not have calories, items flavored with them are sweet but have fewer calories than products sweetened with sugar.
or HFCS. The logic follows that individuals can manage their weight more effectively without sacrificing taste by consuming artificially sweetened products with fewer calories. Some consumers do not prefer the after-taste of artificial sugars. Culinary professionals and the food industry can address these issues by creating blends of various sweeteners to obtain a preferable taste profile (Alexander, 1998). For example, sugar alcohols have a flavor more similar to sucrose than artificial sweeteners, so they are sometimes used to mask the after-taste of artificial sweeteners (Whitney & Sizer, 2008).

A Politic of Risk, Health, and Sweeteners

The story of sugar’s discovery and rise to importance is woven throughout history (Peterson, 2002). Addot (2010), author of Sugar: A Bittersweet History, described the political nature of sugar as it has been linked to sustaining and ending life, slavery, and wars. In contemporary society “sugar has become the vehicle for the diet zealots to create a new soapbox” (Insel et al., 2004, p. 156). Many accusations linking sweeteners to unfavorable health outcomes have been made in recent history. Some have claimed that sweetener consumption is linked to the increased incidence of obesity and its correlated conditions, including diabetes and heart disease (Popkin & Nielson, 2003), and cancer (Watson, 2002). Confounding these claims are accusations of inequality in access to foods that are nutrient deficient, that is, high in calories and low in other nutrients (Maurer & Sobal, 1995; Blisard, Stewart, & Joliffe, 2004).

The validity of these claims is constantly contested, however, by relevant parties, such as health agencies, scientists, food producers and retailer, and consumer groups. Blue (2010) claimed that “politics of food can also be read as a politics of discourse as more and more groups have the power to set agendas, frame debates, and grant voice to
different concerns” (p. 148). Indeed, Watson-Verran and Turnbull (1995) argued that “knowledge systems are polysemous so that where one system leaves off and another starts is a matter for strategic negotiation on the part of those involved in knowledge production enterprises” (p. 131). The debate over sweeteners in the United States can be seen as a location of politics of discourse where organizations fight to maintain market share and positive product images in a society focused on identifying risk and the attaining of good health.

Just as the veracity of the knowledge claims concerning sweeteners is contested within the scientific community, nutritional understandings of sweeteners, and subsequently public health recommendations, are products of negotiations and often regulatory controversy. Beck (1999) described the relationships between risk-defining groups as "discourse coalitions," groups which act as "discursive landscape architects" to shape how risk is defined and the policies that emerge from new knowledge (p. 29, original emphasis). In the past decade the relationship between the scientific community, public health agents, and the food industry has been called into question by numerous writers, such as Marion Nestle, author of Food Politics (2003), Campbell and Campbell, authors of The China Study (2004), Eric Scholsser, author of Fast Food Nation (2001), Michael Pollan, author of Omnivore’s Dilemma (2006) and In Defense of Food (2008), and Barry Glassner, author of The Gospel of Food (2008). These authors, among others, have questioned the potential influence of the food industry on the production of scientific knowledge and the translation of evidence into dietary guidelines.

In the next section, I describe some of the major accusations concerning the relationship between added sugars (cane and HFCS), artificial sweeteners, and risk. Then
I address the controversy surrounding a phenomenon Beck (1999) called discursive architecture. I review literature concerning the food industry's role in shaping public understandings of the relationship between nutrition, health and risk. Specifically, I address conflicts of interest in relation to scientific research and governmental policy. I then describe the emerging and contested role of marketing communication as health education.

**Constellations of accusations and guidelines.** Although our body cannot distinguish between naturally occurring and added sugars, Insel and colleagues (2004) argue that many have pointed their finger at foods with added sugars because these foods commonly "provide most of their energy in the form of sugar but contain little or no dietary fiber, vitamins, or minerals" (p. 157). These types of foods are also referred to as "junk" food or as empty-calories, or as having low nutrient densities (Rolfes, Pinna, & Whitney, 2006). For instance, a 12-ounce soft drink and cup of chocolate milk both have approximately the same amount of sugar. The former, however, is considered nutrient deficient because it contains no other nutrients and the latter is considered nutrient dense because it also has important minerals and vitamins (Drummond & Brefere, 2007). Many accusations against caloric sweeteners are not concerned with the notion that carbohydrate-based sugars have calories. Rather, they focus on the increased availability of foods with added sugars in general, a increased amounts of sugars added to foods, and disparities in consumers' abilities to obtain high and low nutrient-dense foods.

Food choice is limited by availability (Glanz et al., 1998). Simon (2006) argued that "most Americans take it for granted the mind-boggling amount of unhealthy food currently available anywhere, anytime" (p. xi). Due to increases in the number of fast
food restaurants and grocery stores, consumers are constantly presented with a larger variety of choices than a few decades ago (Pollan, 2008; Schlosser, 2001). In addition to having more food options in general, a disproportionate amount of nutrient deficient foods are often available. Paarlberg (2009) claimed that "four new sources of calorie intake entered the American diet in the final decades of the 20th century: super-sized fast foods, energy-dense snack foods, ready-made prepared foods, and sweetened juice beverages" (p. 87). These four sources, Paarlberg tells us, are usually considered nutrient deficient. The presence of added sugar in the marketplace increased by 20 percent between 1970 and 2000 (Putnam, Allshouse, & Kantor, 2002). The increased availability of items high in added sugars is correlated with the consumption of added sugars: Current estimates suggest that the mean intake of added sugar by Americans accounts for 15.8% of their total energy intake (Guthrie & Morton, 2000). In 2000, Americans consumed an average of 31 teaspoons of added sugar daily, "about the amount in three and three-quarters regular 12-ounce colas" (Putnam, Allshouse, & Kantor, 2002, p. 9).

Accusations concerning the relationship between sugar quantity and obesity are complex, as there are disparities in the accessibility of nutritious foods. While people of all classes, genders, races, ages, and geographic locations may experience excess body weight, obesity is highly correlated with poverty (Maurer & Sobal, 1995). USDA research demonstrates that low income families spend less on fruits and vegetables and more on nutrient-deficient foods than do higher-income families (Blisard, Stewart, & Joliffe, 2004). Additionally, some argue that low nutrient dense foods are often available in increasingly large portion sizes at relatively low prices (Story et al., 2008). Low income families are more likely to purchase these cheap, but nutrient deficient foods
(Drewnowski, 2007; Spark, 2007). In addition to the discrepancies that exist due to one's income, access to healthier foods is also correlated with one's neighborhood. Studies in the US and Canada have found neighborhood differences in the price and availability of food. Healthier foods are generally more expensive and less readily available in poorer than in wealthier communities (Chung & Meyers, 1999; MacDonald & Nelson, 1991; Morland, Wing, Diez-Roux, & Poole, 2002). “Poor neighborhoods whose residents have few places to buy fresh groceries” are often referred to as food deserts (Severson, 2007, F1). Because fresh groceries are not readily available people are less likely to buy nutrient dense foods. Indeed, Drewnowski and Popkin (1997) found that the intake of added sugars was negatively correlated with income in less urbanized settings and positively correlated with income in urban areas where healthy foods are less accessible. Brownell and Horgen (2004) nicely summarized the relationship between poverty and food quality: "Accessibility to bad food is coupled with a key economic reality: unhealthy food is cheap. It is convenient, fast, packaged attractively, and tasty. Healthy foods are more difficult to get, less convenient, and more expensive" (p. 10).

Correlations between obesity and access trends are further supported by concerns that added sugars lead to a greater overall caloric intake (Drummond & Brefere, 2007). For example, Popkin and Nielson (2003) found that Americans consumed about a third more calories per day in 2000 than in 1962. The same study found that the increased use of caloric sweeteners may account for increased calorie intake because caloric sweeteners accounted for an increasingly larger share of both total energy and total carbohydrates consumed. If foods with added sugars supplement a person's "normal" diet, the extra calories could lead to weight gain. However, added sugars are not always supplemental
to one's diet. People often displace nutrient dense foods when they consume high sugar foods (Rolfes, Pinna, & Whitney, 2006). For example, after monitoring peoples’ beverage consumption, Harnack, Stang and Story (1999) concluded that drinking soft drinks was negatively associated with the consumption of milk and fruit juice.

While food industries have experienced crisis due to accusations that added sugars in general are risky ingredients, the risks associated with corn-, cane-, and beet based sweeteners have also been distinguished from one another. For example, many believe that HFCS is uniquely responsible for obesity. According to White (2008), the success of this seemingly mundane ingredient was deflated by a publication in the 2004 Journal of Clinical Nutrition. In this article, Bray, Nielsen, and Popkin (2004) concluded that the HFCS may play a role in the obesity epidemic because items that contain HFCS, such as cookies, candies, and soft drinks, are often cheaper than sugar-based cookies and, therefore, over consumed. White (2008) argued that this study's conclusions were "translated as fact by leading nutrition journals, weekly and specialty magazines, national and local newspapers, and an endless number of television programs"; subsequently, HFCS was "vilified by scientific circles and then in the public arena" (p. 1717S). The results of Bray, Nielsen, and Popkin's (2004) study have received mixed reactions from researchers and the industry. For example, there is a body of researchers who have found similar time parallels between HFCS consumption and obesity and type 2 diabetes (Gross, Ford, & Liu, 2004). Others have found correlations that suggest that HFCS may uniquely and adversely affect triglyceride levels and appetite suppression, which could both lead to undesirable health outcomes (Bantle, 2009).
The conclusions of these trend analyses linking added sugars (cane- and sugar-based) to obesity were not accepted by all researchers, however. For instance, White (2008) agreed that, from 1970-2005, caloric intake and obesity in the United States increased; however, he shifted the blame from sugars to a focus on more general nutritional changes. Increase in caloric intake, he argued, was not due to a disproportionate increase in added sugars, but rather an overall increase in calories from all food sources including fats and all other nutrient groups. Melanson, Angelopoulos, Nguyen, Zukley, Lowndes, and Rippe (2008) concluded that HFCS and sugar contribute equally to weight gain in terms of caloric intake and metabolic responses, which served to make sugar and HFCS comparable food additives. Similarly, Moran (2009) concluded that the evidence claiming that HFCS is less satiating than fructose (from fruit) or sucrose (from cane sugar) is not compelling.

Regardless of the validity of any of these claims, mounting concern over the correlation between dietary patterns and health risk contributes to public understandings of risk and questions of how to change the way the public eats (Lupton, 1996). Public health officials have established guidelines concerning the consumption of nutritive sweeteners. Borra and Bouchoux (2009) described governmental guidelines concerning nutritive sweeteners:

In 1990, guidance began using the word "moderate" to describe the inclusion of sugars in the diet. The 1995 Dietary Guidelines advised, "Choose a diet moderate in sugars." By 2000, the adjective "moderate" had been converted to a verb, and consumers were encouraged to "choose beverages and foods to moderate intake of sugars." With the growing public health issue of overweight
and obesity, a major focus of the 2005 Dietary Guidelines was weight management, and the recommendations surrounding sugars emphasized limiting foods with "added sugars" because "added sugars supply calories but few or no nutrients." The guidance for sugars was included in a broader topic of carbohydrates including the message to choose fiber-rich fruits, vegetables, and whole grains often and to choose and prepare foods and beverages with little added sugars or caloric sweeteners. The carbohydrate message emphasized selecting nutrient rich foods and referred to added sugars and fats as "discretionary calories." (p. 1214S)

Discretionary calorie allowances refer to the number of calories "remaining in a person's energy allowance after consuming enough nutrient-dense foods to meet all nutrient needs for the day" (Rolfes, Pinna, & Whitney, 2006, p. 47). The discretionary calorie allowance covers all calories from added sugars, alcohol, and the additional fat found in milk and meat products. For example, the 2,000-calorie pattern includes only about 267 discretionary calories. If a person consumes 29 percent of calories from total fat, which is advisable, then only 8 teaspoons of added sugars can be afforded. This is less than the amount in a typical 12-ounce non-diet soft drink. Though the USDA provides a specific equation to calculate a person's acceptable allowance of added sugars, the equations are difficult to apply to an entire public, so moderation guidelines place the responsibility on consumers (Simon, 2006).

Increased attention to sugar by scientific communities, public health officials, and the media influence public understandings of the role of sugar in mitigating risks and maintaining good health (Borra & Bouchoux, 2009). For example, in 2007, consumers
reported that they were checking information about dietary sugars on the Nutrition Facts Panel when making food decisions (IFIC, 2007). Of those consumers who had heard of HFCS, 60% of consumer reported that they were trying to consume less HFCS.

Low-calorie sweeteners, having few to no calories, have been able to capitalize on recommendations that consumers moderate their intake of discretionary calories (Borra & Bouchoux, 2009; Lawler, 1986). Consumers have known for decades that sugars were not the most nutritious or helpful food additive, but they still desired sweet foods. The introduction of artificial sugars and sugar alcohols to food allowed consumers to have sweet foods without calories. Further, because low-calorie sweeteners are digested differently than carbohydrate sweeteners, their digestion does not produce imbalances in blood sugar levels, which makes artificially sweetened foods a sweet option for people living with diabetes (Rolfes, Pinna, & Whitney, 2006).

While low-calorie sweeteners and sugar alcohols seemed to answer American's desires to eat sweet foods while maintaining a small waistline, these additives were not accepted without controversy (Lawler, 1986). Saccharin, for example, has been used in the United States since 1879 and is currently the most widely ingested artificial sweetener by people who consume diet soft drinks (Rolfes, Pinna, & Whitney, 2006). Since 1907 people have been questioning the health risks associated with saccharin consumption; however, governmental attempts to ban the substance have been overturned (Lawler, 1986). The most well-known accusations suggest that there is a link between saccharin and cancer. In early 1977, a series of studies claimed that the consumption of large amounts of saccharin caused bladder cancer in rats. Although the FDA validated the findings of the study and proposed a ban on the substance, implementation was
repeatedly delayed because of public outcry to keep the sweetener. In 1991, saccharin was reviewed again and the FDA withdrew its proposed ban. Instead it passed the Saccharin Study and Labeling Act (Insel et al., 2004), which put a two year ban on removing the additive from the marketplace and required companies to add health warnings to the packages of foods sweetened with saccharin. In May 2000, the National Toxicology Program removed saccharin from the list of suspected carcinogens and the no longer required warning labels on foods containing it. Currently, the risk of cancer is not associated with normal and moderate intakes of saccharin (about 5 mg daily) for adults (Rolfes, Pinna, & Whitney, 2006). Products containing aspartame, however, must bear a warning label for people who have a condition called phenylketonuria (PKU). People with PKU are unable to properly digest and dispose of phenylalanine, a component of aspartame. Accumulations of phenylalanine are toxic to the nervous system and can lead to brain damage. People with PKU need to follow a special diet to regulate their intake of phenylalanine.

Other concerns address the technical and synthetic origins of artificial sweeteners in general. For example, Schlosser (2001) wrote that "the current methods for preparing fast food are likely less to be found in cookbooks than in trade journal such as Food Technologist and Food Engineering" (p. 6). He concluded that, because most individuals do not know how to say the names of most of the chemicals in their food, much less the nature of the ingredients, consumers should be wary of fast food. Similarly, Pollan (2008) warned consumers to be cautious of nutrient-deficient processed foods, including but not limited to fast food. He advised consumers to instead eat "real food," referring to plant and animal products that have not been processed or treated with chemical and
hormones. Pollan's advice concerned artificial sugars, but also table sugars and HFCS because they are heavily processed and refined.

In sum, the meaning ascribed nutritive and nonnutritive sweeteners does not simply rest in their ability to flavor foods, but, rather, their meaning exists within webs of political, economic, health, scientific, technological, and consumer discourses. The risks and recommendations associated with sweeteners are numerous, yet contested and ever changing. Nestle (2003) argued that the food industry has a major role in negotiations concerning the public understandings of foodstuffs, including sugar.

**Co-opting knowledge through research, journals, and conference.** The Food, Drug, and Cosmetic Act, under which sweeteners are regulated by the FDA, serves to ensure dietary guidelines are based on the evidence provided by good science (FDA, 2009). Good scientific evidence constitutes a strict adherence to the scientific model to find truths about reality. Beck (1992, 1999) argued that though risks may have some material reality, they are only meaningful to the extent that humans can identify and describe them. He wrote, “‘constructions of reality’ may, so to speak, be distinguished according to whether they have more or less ‘reality’” (1999, p. 30). That is to say, human observation and sense-making is limited. Therefore, from Beck's perspective, defining risk and developing nutritional guidelines based on those definitions is inherently problematic. However, even assuming that it is possible for functional sciences to understand reality, Nestle (2001) suggested that recognizing sound science is a thorny task. In addition to needing an in-depth understanding of research and statistical methodologies, she argued that readers have to recognize the social nature of research
reports. She identified multiple conflicts of interest that serve to influence the production and publication of nutritional knowledge.

First, food companies frequently fund nutritional research, journals, conferences, and lectures. For example, in 1996, approximately 30% of 2052 university life-science faculty members surveyed reported receiving funding from the food industry (Blumenthal, Campbell, Causino, & Louis, 1996). This does not account for the research that is produced outside of the academy. Simon (2006) claimed that support from these corporations could influence the outcomes of the studies or the publication of certain findings over others. For example, she questioned the validity of an article that concluded that soft drinks do not lead to childhood obesity because its author, Liz Marr, was funded by Mar Barr Communications, a firm that represented Coca-Cola. Indeed, a systematic evaluation of nutrition research on beverages found that results were more likely to be favorable or neutral if the study was sponsored by industry than if the study was not sponsored (Lesser, Ebbeling, Goozner, Wypij, & Ludwig, 2007). Specifically, they found that of 24 studies of soft drinks, milk and juices financed by the industry, 21 had results favorable or neutral to the industry, and 3 were unfavorable. Of 52 studies with no industry financing, 32 were favorable or neutral to the industry and 20 were unfavorable.

In addition to sponsoring research, the food industry has also developed its own research institutes (Simon, 2006). For example, Coca-Cola formed its own institute, the Beverage Institute for Health & Wellness, to create an organization focused on studying its products and educating the public about research findings. Ludwig and Nestle (2008) pointed out that the findings of studies are not invalid just because researchers accept
support from the industry. However, they suggested that that this relationship should be watched closely as research departments and the food industry have a lot to gain by publishing results that are favorable to the respective industries' products.

Nestle (2001) argued that industry sponsorship of research has been problematic in the past. For example, research sponsored by the pharmaceutical and tobacco industries has been skewed in the industries' favor. Nestle suggested that it would be helpful for journals to require authors to disclose any potential conflicts of interest before publishing; however, she claimed that, as of 2001, very few required such disclosures. Simon (2006) argued that, even when the journals disclose this type of information, the conflict of interest is not reported when the study’s conclusion is cited in the media or used by the food industry in their own defense.

In addition to citing a potential co-opting of scientific knowledge, Nestle (2001) also claimed that much of our knowledge about food should be scrutinized because the food industry also sponsors journals and conferences. For instance, she claimed that, in 2001, The Journal of Nutrition and the American Journal of Clinical Nutrition reported 11 and 28, respectively, different food and pharmaceutical companies on their list of corporate sponsors. Profession relevant conferences and publishers also advertise in peer reviewed journals. Nestle reported that "The New England Journal of Medicine and the Journal of the American Medical Association, which publish the 'hottest' of nutrition research, each receive around $20 million annually from drug and food company advertising" (p. 1016). She suggested that this support may interfere with the research and ideas that are presented even if it is the job of the editor to separate their scientific and business rationales. Finally, Nestle identified the publications in journals as
potentially problematic because business can also sponsor articles in journals. Businesses buy pages of journals and decide on the content, usually a research study in which they have some interest. These articles look like traditional studies; however, their page numbers in some journals are followed by an 'S' to indicate that the article was sponsored by an outside source. Nestle was concerned with the proportion of space dedicated to these sponsored sections and the fact that only knowledgeable readers privy to the coding system would recognize that these sections are sponsored. But even this coding system is ambiguous as an ‘S’ can stand for ‘sponsored’ or ‘supplement’.

**Co-opting knowledge through public health policy.** Nestle (2001) is careful to mention that corporate sponsorship does not necessarily equate to biased research, but she does suggest that readers should be careful because the potential for bias is great. Biased research is problematic because it influences public health policy and risk communication agendas to the artificial advancement of one side. If science can highlight the issues that should be thought about, and, if the industry can influence science, then it follows that the industry has a great deal of influence on what is considered legitimate nutritional knowledge, what policies are developed, and what type of research is conducted in the future. Morris and Bate (1999) wrote that, "from the certainty of dietary advice, it would be reasonable for us to believe that there was a strong scientific basis for the recommendations and that there would be a worldwide consensus on the recommended levels of consumption. But we would be wrong" (p. 102). Similarly, Nestle (2003) argued that, even with the most valid of research, the identification of risks and the development of health guidelines are always "political
compromises between what science tells us about nutrition and health and what is good for the food industry” (p. 30).

Indeed, many have critiqued the impact of the politics of nutrition and the efforts of special interest groups on the creation and dissemination of public information on nutrition. T. Colin Campbell, a nutritional biochemist, spent most of his career arguing that animal-based foods are responsible for high rates of heart disease, diabetes, cancer, obesity, Alzheimer's, osteoporosis, and the effects of aging (Campbell & Campbell, 2004). Grounding his argument in personal and outside research, he petitioned public health officials to develop more rigorous guidelines concerning diets consisting mostly of animal-based foods. He described the challenges he had in persuading health officials on the Public Nutrition Information Committee:

This committee was a stacked deck; its members were entrenched in the status quo. Their professional associations, their friends, the people they trained with were all pro-industry. They enjoyed the meaty American diet themselves and were unwilling to consider the possibility that their views were wrong. In addition, some of them enjoyed handsome benefits, including first-class travel expenses and nice consulting fees, paid by animal food companies. Although there was nothing illegal about any of these activities, it laid bare a serious conflict of interest that put most of the committee members at odds with the public interest. (p. 256)

It makes sense that some public health officials would have connections to the food industry. Their interests and areas expertise overlap. Members of both sides would need similar knowledge and skill sets. The problem for many critiques comes when
relationships, conflicts of goals, and benefits limit public health officials' discretion. For instance, Campbell and Campbell (2004) and Nestle (2003) each argued that, though there is plenty of evidence that diets rich in animal-based foods are harmful to humans, public health officials have been slow to make strong recommendations to reduce our intake. Nestle suggested that, instead thinking solely about public health, economic and industry issues have also been accounted for in the food pyramid's recommendations concerning meat consumption. For example, many people, such as feed and cattle farmers, processors, marketers, and retailers, maintain their livelihood through the sale of meat products. To protect their interests, Nestle argued that the food pyramid suggests people limit their intake of meats high in saturated fats, particularly red meats. Nestle (2003) argued that the food pyramid's guideline is questionable because the beef industry lobbied the USDA to use the word "limit" instead of using a term like "remove". Nestle suggested that "investigative reports revealed fierce industry lobbying to retain the 1995 wording 'choose a diet moderate in sugars' (p. 486), which is ambiguous and, as such, maintains a place for "added" sugars in the public's diet.

Pollan (2006, 2008) also suggested that lobbying and economic interests block the development of more rigorous regulations and guidelines concerning corn based products, including HFCS. Lobbying is a significant function of both individual companies and trade associations. Nestle (2003) explained that it is the job of lobbying groups, such as trade associations, to make sure that "the government (1) does nothing to impede clients from selling more of their products and (2) does as much as possible to create a supportive sales environment" (p. 110). Similar to the companies they represent, trade associations draw on health and risk discourses to promote their products. Simon
(2006) wrote that trade associations repeatedly claim that the keys to healthful diets are balance, variety, and moderation. In all of these claims the implicit conclusion is that their foods can be part of a healthful diet. For example, the American Beverage Association (ABA) has countered scrutiny of the high sugar levels in their products with several key points related to scientific evidence and health benefits. The ABA has claimed that the accusations are unfounded because the science linking soft drink consumption to negative health outcomes is flawed or insufficient. The ABA has promoted their beverages by claiming that soft drinks are a good source of hydration and fund the schools where they are sold. Finally, the ABA has denied the significance of their products’ relationship to obesity by highlighting arguments that there is no such thing as a good or bad food or by privileging the role of physical activity in weight maintenance (Vartanian & Schwartz, 2007). In addition to framing particular food products as healthy to promote consumption, trade associations have sought to avoid industry regulation which would limit consumption. For instance, the Grocery Manufacturers Association (GMA) is a large organization that represents a variety of food producers, distributors, and retailers. Paarlberg (2009) claimed that the GMA opposes governmental regulation of the caloric content of foods or beverages. Instead, the organization calls for consumer education and positions itself as a potential source of that information.

A variety of trade associations are connected to food products that are sweetened with sugar, HFCS, and artificial sweeteners. The beverage industry, for example, has faced stiff criticism lately based on the nutrient-deficiency of their products, particularly soft drinks and juices (Brody, 2010). To improve public health, national and state
officials are considering an excise tax of about one penny per ounce on high-calorie sweetened beverages. The beverage industry has reacted to the proposed tax with lobbying and advertising. The Associated Press reported that Pepsico spent $3.6 million in the first quarter of 2010 to lobby the government on topics related to soda taxes and childhood obesity, among other matters (Associated Press, 2010a). Pepsico's efforts were supplemented by the American Beverage Association which spent over $5.4 million on lobbying for the same issues during the same time (Associated Press, 2010b). In addition to questioning the influence of food lobbying on research and health policy, recently critics have also raised concern over how information about nutrition, health, and risk is communicated to the public.

**Co-opting knowledge though health promotion.** Issues of risk and health are often addressed by health promotion campaigns. Lupton (1995) said that "the underlying premise of these campaigns is the notion that health promoters are 'communicating health'; that is, conveying the 'facts' about health risks to a complacent population, and strongly advising that individuals deemed 'at risk' of disease change and their behavior in ways prescribed by authoritative professionals" (p. 106). Traditionally, health promotion campaigns concerning nutritional intake have been sponsored by nonprofit organizations, such as the American Heart Association, or public health agencies, such as the USDA, and positioned in opposition to the messages communicated by the food industry. Recently, however, the food industries have faced mounting pressure to take responsibility for their role in the obesity epidemic (Lupton, 1995; Nestle, 2003; Simon, 2006, Wansink, 2005; Wansink & Peters, 2007). The food industry has been asked to make information about nutritional content more accessible, to design new products to
aid in weight loss and maintenance, and to adopt healthier messages in their marketing communication. Recently, the food industry's marketing and public relations efforts have been looked to as potential means of diffusing health education (Ludwig & Nestle, 2008; Wansink & Peters, 2007). Changes in the ways issues of nutrition, risks and health have been taken up by the food industry have been met with mixed reactions.

Ferreira (2006) contended that "an important part of almost any food product's image is constituted by means of marketing and promotion efforts that strive to add value to these products in the eyes of the consumer" (p. 854). While marketing communication and associated public relations efforts can be viewed as giving meaning to inherently meaningless products, advertising discourses can also serve to reinforce cultural values concerning a product category (Lupton, 1995). Lupton (1995) argued that "advertising and other promotional activities are most effective if they tap into a corpus of existing meanings, rather than attempting to create new ones" (p. 123). For example, advertisements have ascribed desirable abstract values such as glamour, sensuality, and youthfulness to candy, soft drinks, and alcoholic beverages (Nettleton & Bunton, 1995).

In addition to the marketing and public relation efforts of individual companies, trade associations also serve a significant role in the overall message of the food industry, as it is their job to "educate the public about the value of the industries and professionals that they represent" (Brown & Ruhl, 2003, p. 22). Indeed, researchers, such as Simon (2006) and Nestle (2003), have identified some rhetorical strategies used by the food industry that may be considered to reflect and shape 'risk' ideologies.

First, Nestle (2003) documented the food industry's effort to tap into 'risk' ideologies and improve sales by highlighting the nutritional value of foods and associated
scientific knoweldges. For instance, in 1984, Kellogg’s was the first to label a food 
package with a health claim, linking the high fiber content of their cereal *All Bran* to the 
prevention of some cancers (Ford, Hastak, Mitra, & Ringold, 1996). Since then, food 
claims have become commonplace on food packages and in food advertising. Recently, 
Mars, known for their chocolate candies, has added prominent calorie-count info to the 
front of many of its candies (Goodman, 2010). Further, companies have developed new 
products to fit the requirements to carry a health claim. For example, after the era of fad-
diets that linked high fiber foods to good health, marketers reformulated some products 
so they could carry "whole grain" claims. While front-panel health claims were approved 
by the FDA because they can help consumers identify healthier products based on 
specific criteria, research has found that they can also hinder decision-making processes 
because they make consumers think the product is healthy in general (Ford, Hastak, 
Mitra, & Ringold, 1996; Williams, 2005). A consumer may read a health claim, such as 
“low fat,” generalize the food to be helpful in weight management—not minding sugar 
and calorie contents, even if the low fat version is higher in calories—then infer all 
products under that brand to be diet friendly (Andrews, Netemeyer, & Burton, 1998). 
This generalization is called the “halo effect” (Williams, 2005).

Nestle (2003) argued that "because all food and drinks include ingredients 
(calories, nutrients, or water) that are essential for life, any one of them has the potential 
to be marketed for its health benefits" (p. 315). In addition to adding health claims to 
food packaging, food marketers may make strategic language choices to make their 
products seem healthy. For example McDonald’s sells “crispy chicken salads” not “fried 
chicken salads.” Marketers may also draw on scientific evidence to promote the
healthiness of their product. For example, Capri Sun, a brand of sugary drinks targeted at children, carried a claim that said research shows that Capri Sun hydrates better than water. Simon was concerned that the use of science was strategic and that consumers who did not thoughtfully consider the evidence could experience a halo-effect. A typical consumer, Simon argued, may think that Capri Sun was healthier than water. However, she explained that a consumer that actually read the research would find that the only reason Capri Sun hydrates better than water is because children like to drink more of the sugary beverage than they like to drink water. Though a correct interpretation of the research (the children were better hydrated), Simon argued that the claim was strategically ambiguous because the claim suggested that there was something special about the chemical composition of Capri Sun that made it better than water. Similarly, Gatorade and like products are only needed to replace extreme dehydration and electrolyte loss, for instance after vigorous workouts or an illness that includes vomiting and or diarrhea. Simon described, however, that the promotion of Gatorade has drawn on the strategic interpretation of research and scientific imagery to make the drink look favorable to all types of consumers. She quotes dietician Melinda Hemmelgarn who claimed that “Gatorade is simply sugar and water; it’s not a healthy product” (as cited in Simon, 2006, p. 110). In general, Simon (2006) argued that when food marketers boast health interests or the perceived nutritional value of a foods they are engaging in something she called “nutriwashing.”

In addition to using labels and science claims directly to promote their products, food companies have also sought partnerships with health and science associations. For example, the American Diabetes Association has partnered with Cadbury Schweppes, the
maker of Dr Pepper and Chocolate Crème Eggs to promote sugar free sweets for people with diabetes. Coca-Cola has partnered with the American Academy of Pediatric Dentistry to promote diet beverages and the moderate consumption of beverages sweetened with nutritive sweeteners to encourage dental health (Kanner & Golin, 2005). Wansink and Peters (2007) claimed that these types of partnerships seek to develop "profitable win-win solutions (where both industry and the public health benefit) to help consumers better control what they want to eat" (p. 195).

Lupton (1995) explained that pairing public health initiatives with commercial promotions could be a socially responsible idea. First, public health has fewer resources than commercial enterprises, so the pairing allows public health agencies gain access to larger audiences with greater frequency. Second, commercial marketing is well-grounded in a tradition of persuasion and social influence research. By pairing with commercial promotions, health agencies are more likely to effect a change. Finally, the pairing is beneficial for commercial enterprises too. By drawing on public health recommendations, companies can reap the benefits of public health agencies' credibility. By doing so, they promote a positive image of their product. Wansink and Peters (2007) argued that the current "win-win" phase of marketing is better than earlier phases where corporations denied their role in obesity or held consumers completely responsible for their diet and health status. Simon (2006) and Nestle (2003), however, expressed concern because they fear that the health agencies will abandon their initiatives and values to maintain the support of the food industry. Further, they are concerned that the endorsement of a health organization will lead to halo effects and confuse consumers.
In addition to nutriwashing and partnerships, individual responsibility has been identified as a dominant theme in food marketing communication. Ferreira (2006) found that food media increasingly privileged personal choice and preference. Nestle (2003) described these strategic frames:

The emphasis on individual choice serves the interests of the food industry for one critical reason: if diet is a matter of individual free will, then the only appropriate remedy for poor diets is education, and nutritionists' should be off teaching people to take personal responsibility for their own diet and health—not how to institute societal changes that might make it easier for everyone to do so. (p. 360)

Further, Simon (2006) claimed that discourses that frame health within the context of personal responsibility also support supposed "sensible" decision making. If consumers are situated as being capable of making informed choices, then the responsibility of health outcomes is consumers' burden to carry, not the industry's concern.

Nestle (2003) noted that, to promote responsible personal choice, the food industry incorporates "educational" messages about safe consumption practices that are equally strategic. For instance, food companies argue regularly that "all foods can be part of a healthful diet" and the keys to healthful diets are "balance, variety, and moderation" (p. 360). Simon (2006) was critical of the educational quality of ambiguous messages in food marketing communication. She argued that "moderation" is "a meaningless word that leaves people in the dark" (p. 328) and that "balanced diets" represent "the oversimplified and meaningless way that food companies like to describe how to eat. The purpose is to keep people confused about nutrition while maintaining the status quo"
These authors contend that it is in the interest of the food industry to deflect blame and to keep educational materials that might damage their company's or products' images vague and open to interpretation.

The emergence of nutritional information and guidelines in marketing communication is likely more than a reflection of companies’ appeals to dominant risk ideologies. Instead, many of these tactics are strategic acts to manage corporate image and avoid future litigation (Simon, 2006). In the past decade, the food industry has been highly criticized in the media for its production of foods and promotion of diets that are "unhealthy" and high in added sugars, artificial sweeteners, fats, and sodium. For example, Fast Food Nation (Schlosser, 2001) and Super Size Me (Spurlock, 2004) criticized the health value of McDonald's foods. These critiques parallel those of food scholars, such as Nestle (2003), Simon (2006), and Pollan (2006, 2008). The food industry has also been accused of marketing of unhealthy foods to young and vulnerable audiences (for review see McGinnis, Gootman, & Kraak, 2006). Finally, though the case was dismissed, the lawsuit by plaintiffs against McDonald's for serving allegedly unhealthy foods that contribute to obesity drew international attention and criticism (Pelman v McDonalds, 2003). In the wake of mass criticism by activists, nutritional scientists, and consumers, it was important that food marketers address the impending crisis.

Nestle (2003) pointed out that marketing and public relations efforts to avoid negative images are not novel; however, the new discursive constitutions of health and risk in food marketing is just as discerning as the original advertisements. She wrote,
Although all kinds of businesses use these strategies [advertising to increase corporate and product image] as a means of increasing sales, our concern here is the way multinational as well as American food companies use public relations to divert criticism and to convince people that their products promote health or are—at worst—harmless. (p.145)

Lupton (1995) suggested that fears concerning the role of promotional discourses in framing health behaviors is underscored not only by the meanings constructed within marketing communication, but also in the sheer frequency of audience exposure to industry messages. Food companies have more financial resources available to them than public health agencies, so the commercial promotion of food products is disproportionate to public health efforts. This is an important distinction; the rhetoric of the food industry is becoming more and more comparable to that of public health. Lupton (1995) argued that the similarity exists because it serves both public health and food industries to construct health behaviors as organizational concerns, but, at the same time, a personal responsibility and a set of ambiguous goals open to redefinition. Similarly, Wansink and Peters (2007) claimed that the food industry is not trying to make people obese; rather, they are invested in selling the products consumers want. Further, it is beneficial to the industry if people do not abuse food products by over eating because normal consumption will lead to repeat purchases.

Wansink and Peters (2007) positive evaluations of the current state of food promotion as health education have not been completely accepted. Nestle (2003) argued that the similarity between the two discourses is due to the food industry's influence on the construction of food guidelines and food policy. Further, because the food industry
has a greater understanding of how to develop persuasive messages and more financial resources, even when public health and food companies align, Simon (2006) feared that the initiatives of the food companies would dominate discussions and message design decisions. More recently, Ludwig and Nestle (2008) argued that "irreconcilable conflict" would consistently keep the food industry from adequately promoting health. Indeed, according to marketing penetration strategy, businesses can increase the sales of existing products in current markets by initially lowering a price and then increasing the price gradually over time and/or to increase the frequency a product is purchased (Olsen & Zhao, 2010). As such, humans can only consume so many calories, which, means that, outside of population growth, the only way food businesses can grow is to gain market share for their current products by lowering prices or to promote increased consumption of low calorie products. Essentially, to grow, companies need people to eat more food. It is not in companies' best interest to promote restricted consumption of or, perhaps even, abstinence from a particular food. Nestle nicely summarized the issue: “Obesity causes a conflict of interest for food manufacturers…On the one hand, they need to please stockholders. ... On the other, they need to appear to be doing something about obesity. ... That’s a dilemma not easily resolved” (as cited in Goodman, 2010, p. 3).

Further, Ludwig and Nestle (2008) argued that there have not been significant changes in how health and risk are addressed in food marketing. Issues of consumer responsibility and health through balance and moderation are still dominant. Food is still positioned as a desirable commodity, so desirable that overconsumption is likely. While the authors do not explicitly address Wansink and Peters' (2007) argument concerning the
evolution of food marketing, it is likely that they would either argue that the third "win-
win" phase is a facade or that is not truly different from earlier types of food promotion.

In sum, the food industry has a large influence on the framing of food, health and risk issues. Many scholars have demonstrated that the industry is involved in the obesity epidemic and in both the production of knowledge and the translation of this knowledge to the public, be it through their influence on health policy or their marketing and public relation efforts. However, controversy exists when the value of their role is discussed. Wansink and colleague see the food industry as holding the positive solution for the future and praise their evolution so far (Wansink, 2005; Wansink & Huckabee, 2006; Wansink & Peters, 2007). Other scholars continue to see the food industry as the architect of the obesity epidemic, questioning the authenticity and value of the industry’s role as a health educator (Ludwig & Nestle, 2008; Nestle, 2003; Simon, 2006).

Unlike many of these authors, I am not interested in evaluating the validity or authenticity of the industry's health claims. Rather, I enter this literature interested in exploring how issues of health, risk, and nutrition are represented in media developed by the food industry. I want to understand if trade associations representing sweeteners provide a symbolic repertoire for identifying, making sense of, and managing risks related to nutrition and if so, how. Further, I wish to expand the current literature by addressing the unique contributions that trade associations representing sweeteners offer to the social construction of nutritional risks. The discourses produced by trade associations are tailored to educate consumers, public health and members of the organizations they represent about their products. Further, trade associations can supplement the promotional and lobbying activities of individual companies, and “they
can also effectively serve as the sole lobbying voice in situations where companies may not wish to publicly lobby an issue” (Doorley & Garcia, 2006, p. 171). Simon (2006) wrote that the rhetoric of trade associations is unique because it is able to be more vociferous, proactive, and irreverent when tackling key issues than individual companies that stand to tarnish their brand image. Essentially, trade associations insulate individual companies and brand names from criticism. Trade companies “are at liberty to play the 'bad cops'” (p. 47).

In the current project, I explore the intersection of risk, dietary advice, and food media to study the unique contributions of food marketing communication to the social construction of food risks. Specifically, I am interested in the rhetorical strategies of new campaigns that attempt to perform both the role of commercial and health promotion (Wansink & Peters, 2007), attempts which have been met with mixed reviews. I explore how the discourses of trade associations provide a symbolic repertoire for identifying, making sense of, and managing risks related to nutrition. I ask, Do trade associations representing the sweetener industry provide a symbolic repertoire for identifying, making sense of, and managing risks associated with sweeteners and, if so, how? How, if at all, do these strategies reflect, contribute to, or distract from dominant risk ideologies related to food and health? And, finally, how do particular stakeholders benefit more or less from these discursive strategies?
Chapter Two: Methods

There are a variety of ways to approach the study of risks and risk communication (for review see Lupton, 1999). Technical and scientific approaches adopt realist frameworks to determine the "real" nature of risk and cognitive structures that influence risk perception and behavioral change. Constructivists, on the other hand, emphasize the role of cognitive structures in the identification of risks. Alternative approaches adopt a social constructionist framework. From this standpoint risks and understandings of risks are grounded in social processes.

In the literature review, I developed a theoretical framework that situated the nutritional risks within risk societies (Beck, 1992, 1999), healthism (Crafowrd, 1984), and nutritionism (Pollan, 2008). I described how the social practices and discursive choices that are used to identify, understand, and manage risks are "neither required of or demanded by 'what is there?'" yet through regular use over time, the ways of understanding are experienced as reflections of 'what is there' (Gergen, 2000, p. 47). Social practices, including rhetorical practices, reflect and respond to the social construction of risks. In my dissertation, I adopted rhetorical methods to explore the discursive contributions of one type of rhetor to these social processes of collective sense-making. Specifically, I looked at how risks were socially constructed and negotiated in three different online discourses produced by trade associations representing sweeteners.

In this chapter, I begin by identifying the linkages between rhetoric as a discursive practice and the social construction of reality. I then describe the politics that surround rhetorical acts to define and represent reality. Next, I describe how rhetorical analysis,
specifically close textual analysis (CTA), provides an appropriate means of analyzing the nature of risk representation and constructions. I describe four key principles that guide CTA and their application in my dissertation. Within this discussion I establish standards for rigorous scholarship that shape my analyses and serve as a point of evaluation post-analysis. Finally, I justify and describe the rhetorical texts that I will analyze, and I describe ambiguity and equivocal communication, as preliminary readings of the texts suggest that these issues will be re-occurring and forceful findings in the analyses.

**Rhetoric as a Discursive Practice**

Rhetoric in practice is often also referred to as rhetorical acts, rhetorical events, rhetorical artifacts, rhetorical texts, or rhetorical discourse (Stoner & Perkins, 2005). When the term rhetoric is used in contemporary society to describe discursive acts and performances, it often carries negative connotations (Jasinki, 2001a; Kuypers, 2009). Indeed, Heath (2009) argued that, "at its best, it [rhetoric] is founded on the substance of good reasons to make society better for all. At its worst, it can engage in deception, manipulation, slander, character assassination, distortion, misinformation, and disinformation" (p. 23). While the intent and effect of rhetorical acts vary, the pervasiveness and centrality of rhetoric in our lives is consistent (Lucarites & Condit, 1999; Stoner & Perkins, 2005). Kuypers (2009) wrote that "we simply cannot do without rhetoric" (p. 10).

The possibility of social and political life exists in humans' abilities to use, and at times misuse, language (Berger & Luckman, 1966). Rhetoric allows us to give some kind of shape and structure to our individual and collective experiences (Strecker & Tyler, 2009). The meanings enacted through language, the basis for discourse, are
understood to be contextual; that is, meanings are shaped by the particular experiences and understandings of particular sources and audiences at particular times. At the same time, meanings are also rooted in historical and cultural contexts. Because meanings are contextualized in both ways, they are neither completely relative nor unstable. Lucarites and Condit (1999) wrote,

A rhetorical perspective on the relationship between language and meaning thus stands in stark contrast to more philosophical and scientific perspectives that presume that either the meaning of linguistic usages is permanent and universal, or that it is essentially ahistorical, fundamentally unaffected by the particular communicative contexts in which it is employed. (p. 4)

Rhetorical practices shape and are shaped by the world, language, participants, prior discourse, medium, and purpose (Eisenhart & Johnston, 2008). Further, this confluential shaping occurs through acting rhetorically and rhetorical acts.

Rhetoricians have debated about the definition of a rhetorical act. Traditionally, rhetoric was defined as public speaking in civic contexts; however, contemporary scholars have expanded the scope of symbolic action they consider valuable to study to parallel changes in the media through which messages are communicated and changes in thought about the function of messages that are not spoken in civic contexts (Kuypers, 2009). More recent definitions of rhetoric situate it as symbolic action, including texts, spoken messages, images, art, or even everyday talk, that address the public (Lucarites & Condit, 1999). Kuypers (2009) acknowledged that rhetoric can be categorized as informative or persuasive in nature; however, he noted that both uses of rhetoric would effectively shape understandings of the social world. Burke (1950) wrote that,
"wherever there is persuasion there is rhetoric. And wherever there is 'meaning' there is 'persuasion'" (p. 172, original emphasis). Under this premise, the mere selection of words is influential. Selection, reflection, or deflection of some words implies particular world views or adherence to a particular knowledge system, shapes how sources and audiences understand of the world, and, subsequently, influences human action in that world.

Further, choices concerning how to represent the world are embedded in social relations and power dynamics; as such, rhetoric serves the interests of some group(s) (Lupton, 1994).

I understand rhetoric within this context. I consider rhetoric to be strategic discursive practices that gather around an object, person, social group, or event of interest and serve to shape how that object, person, group, or event is understood and acted upon. I position all rhetoric, including discourses traditionally defined as informative or persuasive, as a potential source of social influence. This is not to say that all messages will affect audiences in a manner the rhetoric intended, but, rather, that rhetoric has the potential to influence because it represents a particular view of the world. Language shapes how people see the world and how they share that world they perceive with others (Sapir, 1929). Rhetors’ word choices reflect a particular understanding of the world. In sharing that world view through rhetoric, they create the communicative possibility for an audience to develop, alter, or extinguish their understanding of that same topic, which will influence how they experience and share their world with others.

**Rhetoric as a way of knowing.** From a social construction perspective, language is "essential for any understandings of the reality of everyday life" (Berger & Luckmann, 1966, p. 37). Language allows us to perceive, share, and organize. Burke (1966) wrote,
“[h]owever important to us is the tiny sliver of reality each of us has experienced firsthand, the whole overall picture is but a construct of symbol systems” (p. 5). We may be able to sense a material reality, but language influences how we filter, understand, and share reality. Burke used a photography metaphor to describe the processes of observation and sensory. Any single photograph is limited in its ability to capture the essence of its subject because it cannot capture what is outside of its frame. Similarly, human observation is filtered through terministic screens, the frames that our language allots us. In Burke's conception, terminology and definitions are reflections, selections and deflections of reality.

Things exist because we sense them, label them, define them, and give them essence. However, "language cannot magically conjure up material objects from thin air" (Jasinski, 2001a, p. xxx); rather, language and discursive practices are mediated by speech communities and their shared understandings of the surrounding world. Rhetorical practices add coherency to our experiences as individuals and collective societies. Our intelligence as humans rests in our ability to give words to our subjective experiences of reality in a way that promotes intersubjective understandings (James, 1991).

Theoretical traditions develop out of humans' desire to gain an intersubjective experience of reality. Theorizing provides society a shared way "to classify, explain, order, predict, understand and/or clarify their worlds, phenomena, and the unknown" (Heath, Toth, & Waymer, 2009, p. 13). Societies use theory because people are compelled to make enlightened choices in times of doubt (Health, 2009, p. 23).
Burke (1966) wrote that “when you get to doubt, you're within the scientist area of information” (p. 425, original emphasis). By adhering to the scientific and objective methods, scientists claim to be able to make valid assessments of the current conditions and make reliable predictions and generalizations about related or future conditions (Condit, 1990b; Zerbe, 2007). Risk discourses, for instance, appeal to science and technology in attempt manage uncertainty about the relationship between humans, nature, and the future (Beck, 1992, 1999; Lupton, 1995). The truths claimed by these theories do not rest in a material reality, but, rather, in our common censuses that a given theory explains our experiences and our confidence that it is beneficial to believe reality to be as such (James, 1991). Although theory may be more or less a reflection of reality, we act on it because it is better to have something to believe in than to have no explanation whatsoever.

Theories play a role in rhetoric of enlightenment because they provide people with common definitions. Schiappa (2003) wrote that through defining practices societies develop shared understanding of themselves, the world, and how they ought to use language. Definitions, however, are also "rhetorically induced" (p. 3). That is they are the products of persuasive processes. Grounded in social processes, definitions are not products of fact, but rather symbolic products of disputes. Definitions are challenged frequently, often with the goal of altering a definition to fit a respective group’s beliefs, values, and goals. Schiappa pointed out that not all definitions are adopted. Rather, widely accepted definitions often reflect the interests of dominant social groups and institutions. For example, Gard and Wright (2005) argued that obesity was and continues
to be framed as a medical problem that can be fixed with medical attention because this definition validates scientific expertise and maintains the power of medical professionals.

In addition to defining issues, a rhetoric of enlightened choice privileges one option over alternative solutions (Heath, 2009). To justify this choice, "the communicator is obligated to offer facts, reasoning, and evaluation that can help individuals to make an enlightened choice, one that reflects the best facts, reasoning, and evaluations" (Heath, 2000, p. 36). Condit (1990b) argued that these scientific facts, reasoning patterns, and evaluation outcomes are based on the assumption that "the knowledge science produces is certain, universal, and non-judgmental. That is, scientists ‘know’ rather than merely believe” (p. 323, original emphasis). However, in *The Tactics of Motivation*, Burke said that the validity of scientific knowledge is a matter of faith and rhetorical strategy, rather than of scientific proof (as cited in Wolin, 2001). As much effort, if not more than, goes into proving the validity of facts and theories to the public as that which goes into scientific and technological procedures that conjure up the facts (Potter, 1996).

If one assumes that understandings of reality are socially constructed, the validation of particular choices based on fact and evidence can be problematic. McGee (1999) wrote that, while advocating for some particular reality, advocates "write or speak as if they had an 'airtight case' that accounted for all possible interpretations of evidence and all conceivable courses of action that appeared to follow from the truths the evidence appeared to support" (p. 74). Inevitably in this mode of speaking voices are silenced, competing evidence and theories are ignored, and weaknesses in logic are avoided. Through the process of validating new understandings of the world, facts are commonly
positioned within previous constructions and serve to reinforce the original ways of understandings the world (Potter, 1996).

Scholars have explored how medical, technical, and scientific discourses have constructed facts and the impact of those constructions on the progress of science and the public (Ceccarelli, 2001a, 2001b; Gross, 1994, 2006; Myers, 1990, 2003). Gross (1994) argued that "facts" are often considered valid and reliable because they are established by scientific or technical experts. He claimed that the reliance on scientific and technical expertise perpetuated the deficit models of public understandings of science, which privilege expert over lay knowledge systems. Gross furthered his argument by demonstrating that scientific facts and theories themselves are socially constructed products. He supported his argument by describing the processes by which researchers draw on prior research and ideas to design, conduct, and interpret their own research. Research designs are shaped by prior research and fit the conventions accepted by others. Interpretations are shaped by what researchers are taught to observe or label. Finally, the diffusion of research findings relies on the consensus of others in the knowledge community where reviewers and editors serve as gatekeepers. Ceccarelli (2001a) also demonstrated the role of social consensus on the adoption of scientific facts. She described how Darwin's theory of evolution was not originally accepted due to the conflict between the theory and dominant scientific and religious understandings of the origin of species.

The simplification of our understandings and experiences of the world is not just a product of rhetorical processes within the sciences, but rather a process that is innate to language in general. Burke (1966) claimed that language is an abbreviation. We do not
have the cognitive capacity to process and make sense of every sensory experience, so we use single symbols or strategic pairings of symbols as filters so we do not go mad. Further, language becomes an abbreviation for communicating experiences with others. Depew (2001) argued that scientific theories "are simply definitions of kinds of systems that generate or provide a matrix for classes of models rather than high-level statements about the nomic structure of the world" (p. 12). The world is messy and complex, he reasoned. The deductive nature of the scientific method is weak in that it only accounts for small fractions of the human experience, a limitation which does not make much sense beyond or serve a practical purpose outside of the messy web of other interactions with limited scientific conclusions. Speaking of public discourses, Brummet (2006) wrote that issues must be reduced or metonymized. He said that, "only in that reduced form can people participate in the management of public issues, by helping to determine what those issues and their components mean" (p. 132). The limitations of scientific reasoning stem not only from our limited capacity to experience and observe the world, but also from our limited capacity to describe it.

**Wrangle of the market.** The constructed nature of reality suggests the possibility that knowledges can be partial, flawed, or even strategically assembled to serve the purposes of different groups (Potter, 1996). Heath (2009) claimed that "a rhetorical perspective realizes that people defend and attack contestable propositions and argue over accuracy, sufficiency, and relevance of knowledge claims...[in] a contest among voices" (p. 21). Burke (1969) and Heath (2009) referred to this contest of voices as the wrangle in the marketplace.
Rhetoric, in this instance, is "the contest for advantage; each voice is a part of the dialectical wrangle" (Heath, 1986, p. 228). Heath (2009) wrote that the metaphor of a wrangle is not the most pleasant rendering of social interaction, however, neither are the voices always pleasant. Rhetoric can be manipulative and become "slick and hollow" (p. 24). Potter (1996) wrote that when an individual, group or organization has something to gain or lose, such as financial resources or public image, they have a higher stake in the way in which an issue is defined and the outcomes that come from this defining. As a result, groups advocate more vigorously to make sure that their voice is heard and their position on a topic is adopted. To ensure their voice is heard, many organizations have hired public relation specialists to shape key issues, induce actions, and develop favorable organizational image by building strategic relationships, lobbying, and marketing (Heath, 2009).

Though debates are rarely settled once and for all (Burke, 1969), from this "competitive" standpoint groups are likely to win or lose their right to frame an issue. Even in these situations, the wrangle in the market is still apparent in “the ways in which the symbols of appeal are stolen back and forth by rival camps” (Burke, 1937, p. 365). Heath (2009) provided an example of this tactic within a risk context in the automobile industry. He suggested that companies that oppose stricter regulations, such as those to prevent pollution or install seat belts, will counter-argue and define their current vehicles as safe and efficient. However, if forced to adopt these measures, the organizations then shift their rhetoric to adopt the stance of the advocates of automobile safety and praise their improved products as though it were their idea all along. Heath maintained that this
shift in rhetoric is persuasive because it tends to distance companies from their original rhetoric and to position their products as favorable.

While this wrangling can present itself as a conflict, the wrangle at times can also represent a diplomatic dialogue between different groups, each seeking to share information, to reach sufficient agreement, or to coordinate actions (Heath, 2009; Toth, 2009). From this perspective, ideas must "be examined and compared against one another because no other standard exists" (Heath, 1986, p. 79). The wrangle tests completeness and adequacy of competing voices, definitions, and theories. Also from this perspective, Heath (2009) suggested that the wrangle can be positive, because it is a time when people listen to one another and collaborate, instead of ignoring or trying to speak louder than others.

Burke (1969) proposed that substance is evidenced by the wrangle of ideas in a society. Though we commonly use the term substance to explain the intrinsic value of some concept, for example we say, "It is substantial," Burke argued that it is nearly impossible to define substance in terms of what is it. Rather, a paradox of ambiguity surrounds substance, and its definitions rest in descriptions of what it is not. And, as such, the substance of objects, events, and ideas is debated. The substance of an issue, according to Burke (1969), is apparent by the motivation of multiple publics to participate in its definition and regulation. Substance is a product of multiple clashing voices, voices that are transformed through dialogue, which together develop a deeper way of viewing or acting toward the respective object, event, issue, or idea. Social knowledge of substance, then, is a medium of rhetorical action (it makes arguments possible) and an outcome of rhetorical action (Farrell, 1979). Burke (1950) theorized that
we are only able to share substance momentarily and incompletely. Though shared meanings are developed through dialogue, to some degree their interpretation and investment of interests are always also relative. Rhetoric is not only a practice that produces substance, but it is also a method for analyzing how discourses function to enable and constrain understandings and actions.

**Rhetoric as Criticism**

Knowledge can be considered more or less an actual reflection of "reality"; however, it is often acted on as though it is reliable, factual or literal (Potter, 1996). Berger and Luckman (1966) explained that this contradiction arises because "man [sic] is capable of forgetting his own authorship of the world" (p. 89). Lupton (1994) described social construction as "an approach which questions claims to the existence of essential truths" (p. 12). Instead of focusing on the validity of a claim, which is contested as to whether we could ever *really* know, constructionists are concerned with what claims are made, who makes claims, how claims are made, and how audiences understand and incorporate those claims into their everyday lives (Lupton, 1994, 1995, 1999). For example, concerning the nature of risks, Lupton (1999) wrote that "to draw a distinction between 'real' risks (as measured and identified by 'experts') and 'false' risks (as perceived by members of the public) is irrelevant" because both assessments are enabled and constrained by the human capacity to use language. Rather, "it is the ways in which these understandings are constructed and acted upon that is considered important" in a social construction paradigm (p. 33, original emphasis).

Rhetorical criticism is a way of generating alternative ways of seeing and understanding the world (Condit, 1990b). Instead of seeking to increase our knowledge
of reality, rhetorical criticism can identify, describe, and question our understandings of reality. Heath (2009) explained that rhetorical criticism focuses on "the role information…plays in shaping knowledge and opinions as well as being convincing and motivating actions. It addresses the ways evaluations are debated and confirmed or challenged. It contests the wisdom of various policies, identities, and reputations" (p. 21). As such, rhetorical criticism is a way of understanding that is built on different principles than scientific research. While science seeks to reduce the world, rhetorical methods seek to expand our understandings of what is possible and desirable. Condit (1990b) argued that the two methods of inquiry are not necessarily in opposition. The strengths and limitations of these methods can equally contribute to how we understand the world.

While rhetorical criticism can take many shapes and forms (Black, 1965), it is generally characterized as a more deliberate consideration of a discursive act than simple or spontaneous reactions to a message (Stoner & Perkins, 2005). Rhetorical critics apply rhetorical theories to message structures to pose question and generate analyses in effort to build understandings of the function(s) of a particular discourse. Campbell and Burkholder (1997) said that there are three basic questions that rhetorical criticism attempts to answer:

(1) How and why are people capable of and subject to influence, and what is the nature of human motivation?...(2) What is the relationship between rhetoric and reality?...(3) What is the relationship between rhetoric and cultural history and, relatedly, what are the ethical of evaluative standards to be used to judge persuasive discourse? (p. 14-15)
While most criticisms follow a set of norms concerning how to go about answering these questions, criticism is not a mechanical process (Jasinski, 2001b, Kuypers, 2009). Rather, Kuypers (2009) argued that all criticisms move through three stages: conception, communication and counter-communication. Conception is the point of entry for critics. During conception the critic identifies and describes a discourse and a theoretical sensibility that could provide insight into the functioning of the respective rhetoric. This stage may take a variety of forms. A critic might adopt a deductive approach, asking particular questions based on theory and then seeking discourses that answer those questions. On the other hand, a critic can also adopt an inductive approach, where the critic starts with a particular discourse and then develops a theoretical argument. After conception, the rhetoric develops their ideas for public consumption. This communication stage often takes the form of a written document. While writing the document critics have to build a clear argument and provide a thick description of the discourse and theoretical framework to evidence their claims. Finally, after sharing their criticism, critics should be prepared to consider and respond to counter-arguments concerning their work and in discussions about the topic or practical implications of the study which may extend beyond the immediate audience of the rhetorical criticism. Condit and Bates (2009) suggest that the audience for a particular criticism might not simply be communication scholars and students, and in such cases, critics should make an effort to adopt the vocabulary and argument structures familiar to imagined audiences beyond the field of communication. For example, I used the nutritional and marketing vocabulary associated with the discursive strategies I identified so that my work will be more approachable to scholars and professionals in those fields.
**Close Textual Analysis (CTA).** As evidenced by Kuypers (2009), there are a variety of entry points for rhetorical critics. Browne (2009) described Close-Textual Analysis (CTA) as one of these analytical approaches. CTA refers to "an interpretive practice, the aim of which is to explain how texts operate to produce meaning, effect persuasion, and activate convictions (p. 63). Rhetoricians engaging in CTA tend to focus on the dispositional, linguistic and argument structures of a single text at a time (Ceccarelli, 2001a; Condit, 1990a). Ceccarelli (2001a) explained that "by examining details of the text, they uncover subtle and otherwise unrecognized rhetorical strategies. They do this to explain how a text was constructed to invite a particular response in a particular audience" (p. 6).

In this section, I outline the premises of the four principles and their implications during the conception stage of criticism. Then, I discuss some of the major critiques of CTA and the corresponding rebuttals. Finally, I describe how the principles of CTA were applied in my analysis and writing.

**Guiding CTA principles.** Browne (2009) said that critics using CTA are guided by four principles. First, CTA critics work from the assumption that rhetorical texts are sites of symbolic action (Browne, 2009, p. 64). Burke (1966) originally theorized language as symbolic action. He explained that the meanings associated with language allow humans to act with purpose toward even abstract concepts, such as the past or future, rather than just move as animals do. The meanings attached to language shape how we think and act. The notion of language alone can cause people to have vivid, passionate, and, at times, physiological reactions (Campbell and Burkhart, 1997). The connotative meanings associated with this language motivates action. It is important,
thus, for critics to ask what a text means, but it is also valuable to consider what a
discourse does or serves to do. Rhetorical scholars believe that the symbolic properties
of discourse serve to (re)produce, legitimate, and justify social systems and structures
(Stillar, 1998; Toth, 2009). One way critics can characterize what a discourse does is by
ascribing verbs to it (Browne, 2009; Potter, 1996). For instance, some discourses may be
described as informing, persuading, inviting, honoring, blaming, denying, hiding,
pleading, promising, seducing, distancing, announcing, dissuading, abusing, or
complimenting. Critics using CTA seeks to elaborate on how message features served to
invited audiences to interact and respond to a particular text through identifying these
motivational actions of the text.

As sites of symbolic action, CTA critics often try to emphasize how the internal
dynamics of elements and rhetorical forces induce a preferred interpretation or outcome
(Jasinski, 2001a). Discourse can induce specific interpretations by including direct and
implied tactics. Direct tactics are explicit requests, appeals, or argument for audience to
think or behave in a particular way. Brummet (2006) said that "the critic who chooses to
focus on them [direct tactic] should first simply note what appeals are, make a list of
them, and identify what is being urged and why" (p. 119). It is also important to note the
most likely audience of the appeals and the likelihood of the appeals succeeding with the
audience. Brummet claimed that, while that not all discourses will have direct tactics, all
texts will have implied strategies and structure that aim to influence the interpretation of
the text. Because implied strategies are not explicitly stated by the rhetor, they are more
difficult to identify. To identify implicit strategies, critics should ask questions about
associations, implications, and conflict or absence that are in the text, but not explicitly
stated. Using these questions to guide a part of the analysis will help the critic identify the way the text positions the relationships between concepts, people, and time.

Second, CTA critics believe that “form and content cannot be divorced” (Browne, 2009, p. 64). The form of a message is constructed to give structure to some concept. Without form discourse would consist of randomly placed symbols and would lack coherence. Form cannot exist without content, or else there would be nothing to talk about. The notion that what (content) is communicated is related to how (form) this is communicated situates discourse as consisting of more than a mechanism to transmit ideas. Burke (1968) argued that form is important because audiences feel gratified when they are able to anticipate the next part of the message. Rhetors communicate more effectively if they use a form that parallels the content of their message because they play into those expectations. Societies have certain expectations concerning, for example, how to tell a joke, to apologize, or to deliver a eulogy. To a similar extent, though a joke makes use the same form as other jokes, the content may vary based on whether the audience is comprised of friends, family or co-workers.

Brummet (2006) wrote that, when a critic chooses to analyze a text based on its structure alone, "he or she is dealing with the pattern, the form, the bare bones or organization of that text"; The critic must ask, "Is the pattern cohesive, and if not, why not?... Is the pattern recognizable?" (p. 126). Campbell and Burkholder (1997) wrote that explorations of pattern can be generic in nature. Generic analyses often focus on a particular type of circumstance, though, because there are unifying themes, principles, and rules that are associated with repeated situations. Leff and Sachs (1990) argued that both approaches "deflect attention from the complex, variegated texture of specific
rhetorical products and focus upon abstract, essentialized conceptions of the rhetorical process" (p. 254). Critics using CTA should instead seek to identify a text's "rhetorical texture" (Leff, 1980, p. 339) by paying close attention to the interconnectedness of a text's representational content, discursive form, and the context of the situation. Critics using CTA seek to understand "how one part of a text sets up the possibility of a later set of meanings, which then set up later possibilities" (Condit, 1990a, p. 331). In practice, Andrews, Leff, and Terrill (1998) suggested that critics should make a detailed outline of the text to identify the relationship among the key elements and patterns and expand meanings.

Third, CTA critics place emphasis on the notion that discourse informs and is informed by context. Simply put rhetorical practices do not exist within a social vacuum, but rather they are products of and serve to affect the social world (Ceccarelli, 2001a; Lupton, 1994). Rhetorical context refers to the relevant and significant social conditions which enable and constrain the development, interpretation, and application of messages (Stoner & Perkins, 2005). McGee (1999) highlighted the importance of context in rhetorical criticism when he argued that "failing to acco unt for ‘context,’ or reducing ‘context’ to one or two of its parts, means quite simply that one is no longer dealing with discourse as it appears in the world" (p. 73, original emphasis).

Adherence to this principle means that it is important for scholars to understand the circumstances that influenced the production of a given message. According to Bitzer (1968), rhetorical events are the products of a rhetorical exigency, a problematic situation that demands that a position be taken, an idea asserted, and a choice recommended. The context, then, gives rise to the rhetorical act but also constraints "how it must be said, by
whom it must be said, to whom it must be said, and to what end it must be said" (Heath, 2009, p. 33). Browne (2009) argued that "texts work rhetorically by responding to exigencies, yes, but the work as well by reconstituting their own interpretive contexts" (p. 66). The former part of Browne's statement reflects Vatz's (1999) position on the rhetorical situations. For Vatz, rhetors respond to situations, but they also help to constitute the problems through their responses.

In addition to understanding the contexts that are shaped by and give shape to discourse, we should acknowledge that "while each text is distinctive on its own terms, it yet partakes in and deploys an indefinite range of other texts and discursive modalities" (Browne, 2009, p. 66). Intertextuality, as it is, "occurs when one text includes part or all of another text.... meanings associated with the older text become incorporated into the new text, contributing to its rhetorical impact‖ (Brummet, 2006, p. 116). Lupton (1994) said that discourse often draws on other texts to achieve meaning in a more succinct fashion.

Leff (1986), a close textual critic, referred to the dynamic influence of context and intertextuality on texts as their "integrity and density" (p. 381). To privilege the integrity and density of a text, a critic must locate information about the specific circumstances in which the message was communicated, such as features of the place, time, source and audience, and broader historical information about cultural norms, values, beliefs, and expectations (Campbell & Burkholder, 1997). Critics should also explore messages that were communicated during similar circumstances to identify potential commonalities, differences, or influences. When discourses are positioned within their original contexts, historical accuracy becomes an issue of rigor (Brummet, 2006). A broad understanding
of the immediate and broad contexts that surround a rhetorical act and similar discourses can also help a critic account for the intertextual or fragmented nature of a discourse of interest. Sometimes these connections are not explicit; however, an understanding of context and similar discourses will provide a rough idea of them (Fairclough, 2002).

Fourth and finally, critics using CTA believe that “rhetorical texts exhibit artistic density” (Browne, 2009, p. 66). The artistic value of a text is located in its ability to use style, language and form to assert symbolic force (Campbell & Burkholder, 1997). Unlike poetry or other forms of verbal art, rhetorical texts tend to hide their status as an art. As such, the artistic nature of rhetoric, as opposed to poetics, has been long been contested, however, it remains an important criterion for CTA (Browne, 2009; Jasinski, 2001a).

To analyze the artistic nature of discourse, critics should first focus on the rhetorical "strategies that are particularly well executed, such as powerful narrative development, heightened dramatic conflict building to a climax, a wedding of language and thought, the powerful embodiment of a persona or role, to the creation of a work that seems to sum up the central ideas of a movement to represent value" (Campbell & Burkholder, 1997, p. 123). Jasinski (2001a) claimed that, because the artistic nature of many rhetorical discourses is not always apparent, "close readers have to employ some mechanism for piercing the veil that covers the text so as to see how it works" (p. 92). Specifically, Slagell (1991) said that CTA uniquely "slows down the reading experiences so that 'events' one does not notice in normal time, but which do occur, are brought before our analytical attention" (p. 155, original emphasis).
Critiques and defenses of CTA. Like any method of inquiry, CTA’s ability to provide valuable and useful understandings of the world has been contested (Browne, 2009). These critiques have mainly focused on the intrinsic nature of CTA, suggesting that the method is limited in its ability to speak directly about audiences’ readings and the contexts that shape and are shaped by the rhetorical events of interest. Close-textual critics have participated in this conversation and defended their decisions. In Rhetorical criticism and audiences: The extremes of McGee and Leff, Condit (1990a) synthesized these debates and provided theoretical links between the camps of thought which she argued helped to build rhetorical theory across text, audience, and context, as opposed to reducing it to one of these factors as most important.

A common critique of CTA claims that, because critics focus so much attention on the internal characteristics of a particular work, they “neglect to fully explore the external influences that the text had on its context, or the external influences its context had over it” (Ceccarelli, 2001b, p. 7). Browne (2009), however, argued that context is very important to critics of CTA. He held, "it is inconceivable that a satisfactory interpretation of rhetorical texts is possible without taking all relevant features of context into consideration" (p. 65). Moreover, understanding context establishes grounds for selecting texts, and for recognizing, interpreting, and evaluating discursive strategies. For example, Leff’s (1984) exploration of Lincoln’s House Divided speech revealed the ways in which Lincoln employed a conspiracy metaphor as a precise adaptation to specific demands of the voting public. This analysis is one example of how CTA addresses the interaction between discourse and the specific situational demands of real and particular audiences. While CTA does look mainly at the intrinsic nature of a text, it
is through understandings of context and similar discourses that the critic is able to develop his or her argument.

Arguments concerning the ability of CTA to account for external influence of the text have also claimed that the method does not account for audiences’ experiences of the rhetorical event. Condit (1990a) said that these criticisms have stemmed mostly from researchers interested in audience studies. McGee (1999), one such critic, privileged audiences’ actual interpretations of a text over the rhetor’s intended meaning. He argued that audiences are fragmented because segments draw on a unique set of beliefs, values, and experiences to interpret a specific rhetorical event. Because audiences are fragmented, there will always be multiple interpretations of a text. Critics adhering to this assumption believe that the meaning of any rhetorical event can only be understood by accessing information about how audiences made sense of and reacted to the message, which CTA does not do. Critics using CTA consider a particular collective audience could engage with a rhetorical event instead of the actual experiences of a fragmented audience (Leff & Sachs, 1990). The collective audience does not necessarily imply a homogeneous audience, but rather particular audience segment, either immediate or long range, that the critic positions as relevant to the text and posing an argument in the criticism.

Because the CTA critic does not look at the actual responses of the audience, but rather uses a constructed collective audience to give meaning to the text, critics using CTA can only speak of how a relevant audience was "invited" to respond to a text based on the rhetorical strategies within the text. That is, how a text’s intrinsic attributes motivated an audience to think or act. For example, the use of implicit conclusions could
be interpreted as inviting audiences to continue thinking about the idea as opposed to explicit conclusions which may serve to end thinking in favor of an immediate behavioral change. While Condit (1990a) respects Leff’s decision to privilege the rhetorical act, rather than abandon it for the audience, she argued that Leff’s thinking is still problematic. She wrote that critics are amiss if they write about the meaning of a rhetorical event for any particular audience. Instead, she suggested that critics “speak only of some experiences made possible for certain situated audiences” (p. 335).

In general, scholars defending CTA have argued that it is in these areas, that others view as weaknesses, that CTA gains its strength as a method of inquiry. Because CTA is microscopic, it allows the critic to learn about the nuances of a text that may otherwise be looked over if one were surveying a larger discourse. For example, Lucas (1988) said that,

The benefit of close textual analysis is that it allows the critic, in essence, to "slow down" the action within the text...it is as if a slow-motion camera with an automatic stop action effect were recording our linguistic experiences and presenting them to us for viewing. (p. 249)

By identifying the nuances of a text, close readings can provide a richer understanding of a particular text, but also contribute to the thickening of theoretical concepts (Leff & Sachs, 1990).

Condit (1990a) said that the close reading of a text is not as unique to CTA as some scholars have suggested in the past. She claimed rhetorical critics in general could not “effectively trace the structure of ideographs, or reveal fantasy themes, or describe generic structures without close reading of texts” (p. 331). Further, similar to other
analyses, close textual analyses can and do incorporate external issues. Condit argued that the unique aspect of CTA is that it is concerned with how new meanings are constructed through disposition.

Guided by these four principles, critics using CTA engage in "sensitive and instructive" readings of a rhetorical text, so that they are "better able to see the ways in which rhetoric works at its most fundamental levels of operation" (Browne, 2009, p. 67).

While I have discussed how these principles are applied in rhetorical criticism, I have yet to describe how I applied these principles in my rhetorical criticism.

**Four stages of analysis.** To begin, I structured my analysis as a series of three consecutive case studies. CTA is particularly aligned with the goals of case study analyses (Leff, 1986); both are designed to provide an intensive description and analysis of the meanings and processes of a particular situation, as opposed to studies that are concerned with general descriptions of large discourse or outcomes (Bloomberg & Volpe, 2008). Leff (1986) said that close readings lead to "theoretical understanding of the particular case" (p. 378), but the criticisms can also be compared to complicate and contribute to theoretical understandings of the discourse in general. Each case study represents a chapter in the analysis section of my dissertation. Analysis chapters stand alone as criticisms, yet cling together because the texts are circumstantially related and are written successively.

To conduct the criticism, I followed Campbell and Burkholder’s (1997) four stages of rhetorical analysis: descriptive analysis, historical-contextual analysis, the development of a critical perspective, and evaluation. First, during the descriptive analysis the critic looks at only the rhetorical act itself to identify its unique and
distinctive attributes. Relying on the intrinsic attributes of the text, critics seek to better understand and to describe (1) the purpose of the text, including the argument conclusions and/or the response desired by the rhetor; (2) the persona adopted by the rhetor in making the argument; (3) the audience as evidenced by the discourse; (4) the tone of the rhetor, highlighting their attitude toward the subject, audience, self, and subject matters; (5) the structure; (6) supporting materials evidencing the argument; and, (7) other significant or reoccurring strategies. This stage of analysis parallels Leff and Sachs’ (1990) description of the process of close textual analysis: "working from the evidence within the text, the critic proceeds to make inferences about what the work is designed to do, how it is designed to do it, and how well that design functions to structure and transmit meanings within the realm of public experience" (Leff & Sachs, 1990, p. 257).

In line with Stoner and Perkins’ (1997) description of how to survey and describe messages, I conducted the descriptive analysis by reading the corpus of texts for a particular case multiple times. After the initial readings, I typed descriptions of the forceful and reoccurring rhetorical patterns, styles, and appeals alongside excerpts that I transcribed from the text. With additional readings, I continually added to the descriptions until additions do not contribute new or more refined insights.

Criticism begins during the description analysis (Campbell & Burkholder, 1997; Kuypers, 2009). To account for my thoughts and arguments as I conducted the descriptive analysis I typed notes into the descriptive analysis concerning any patterns I began to recognize in the discourse, the strengths and weaknesses in the argument, theoretical connections, alternative readings, and questions I had about the content.
Acknowledging the polysemic and polyvalent nature of rhetoric, that is a plurality of meanings and evaluations (Ceccarelli, 1998), I also took notes on readings and understandings I envisioned potentially emerging from the text.

Campbell and Burkholder's (1997) second stage of analysis focuses on the factors that are extrinsic to the discourse. During this stage of analysis, critics typically research the rhetorical problem, the response of the audience, and the historical-cultural contexts that surround the rhetorical artifact. In chapter one, I outlined the historical, cultural, culinary, and scientific contexts that serve as a rhetorical exigency for the texts.

Committed to the intrinsic nature of CTA, I used this information to better understand references and rhetorical actions within the texts.

The first two stages of criticism, according to Campbell and Burkholder, focus on description. The third stage of analysis, on the other hand, includes the "development of a critical standpoint from which to interpret and evaluate a rhetorical act" (p. 73). During this stage, a critic looks at the conclusions of the first two stages and considers his or her own experiences and sensibilities to determine the theoretical perspectives best suited to critique the particular rhetorical act. Campbell and Burkholder said that criticism is "never wholly impartial and objective" (p. 2); Rather, the process is "entirely reflexive" (p. 73). Finlay and Gough (2006) wrote that strong criticism emerges from critics asking and attempting to understand a series of difficult questions, such as.

What do I understand by 'A'? What are the implications of choosing this? Why have I done this like B, and not C? Why might I have found this? Why am I finding this? Why am I finding this difficult? How do I know that I have done this well? Can I convince others that this has been done well? If so, how? (p. 68)
I recognized that my prior interests, understandings, and experiences shaped how I describe and make-sense of the texts. I accounted for my thoughts and concerns during these reflexive moments in a journal and, when relevant, in the written criticism. One simple, yet meaningful, choice I made is to use a first-person voice in my writing. The journal entries and in-text notes did not necessarily serve to make the criticism more objective; rather, they helped me to develop a greater appreciation of the texts and understanding of my deliberation process (Ellingson, 2009). These entries helped me develop more arguments and establish "some degree of intersubjective reliability in...judgment and in...reasons for the judgment" (Brokreide, 1974, p. 167).

While I recognized that it is impossible to approach a text objectively, my aim was to also avoid using criticism as a springboard for a personal agenda. To work within the tensions inherent between systematic study and subjectivity, I grounded my theoretical decisions and claims with examples from text as I described in the first stage of analysis. These examples and theory supported my arguments. Combs (2005), similarly, wrote that, "if I can point to examples from the text when I assert, I feel more comfortable defending my claims than when I am vulnerable to the argument that the text itself does not support my claims" (p. 80). Brokreide (1974) argued that explicit discussions of the philosophical and theoretical bases of a criticism are valuable because, not only do they strengthen the credibility of the critic, but the practice also becomes more informative and potentially more controversial for readers.

With this said, I recognized the hermeneutic relationship that existed between the texts and the literature I selected. I simultaneously selected the risk society theoretical frameworks, described in chapter one, and the rhetorical texts for analysis. They
informed each other’s selection and, as such, will be reflected in the descriptive analysis. However, I was interested in exploring how these discourses uniquely construct risk. As such, I used the literature review as a starting point to identify discursive themes in the texts. As I became more familiar with the strategies employed in the texts, I narrowed the scope of my analysis to develop a more concise argument that reflects the text’s internal characteristics and responds to my research questions.

The final stage of analysis provides an evaluation to help audiences make better informed and more deliberate judgments of the discourse’s persuasive appeals (Campbell & Burkholder, 1997). Critics typically evaluate rhetorical texts based on their artistic value, effectiveness, truthfulness, and ethicality. While each of these dimensions has unique characteristics, they also overlap.

The artistic value of a text refers to “the degree to which a discourse displays ritualistic, aesthetic, dramatic, and emotive qualities” (Campbell & Burkholder, 1997, p. 121). Evaluation of a text’s artistic value are always based on a critic’s tastes; however, “good criticism on artistic grounds goes beyond the critic’s personal reaction to judge discourse against clearly defined standards of artistic excellence” (p. 121). To evaluate a text based on its artistic value, critics consider how well the linguistic styles and patterns work in conjunction with one another to achieve some purpose in a given communication context. Specifically, critics can evaluate a text based on whether its language is clear or ambiguous, illustration and figurative, audience appropriate as opposed to jargon. Metaphors and other analogous arguments may be found to contribute to the overall force of the text. Further, critics may look at the overall text to see if there is a discernable thesis and consistency in the rhetor’s tone. These elements are not universally applicable.
Rather, they are guided by the particular circumstances of a rhetorical act and the interests and inclination of the rhetor. It is the critic’s job to identify the artistic elements in a text and to evaluate whether they contribute to the purpose of the discourse in those instances.

The effectiveness of discourse can be judged by the actual audience response, including media effects data or public responses to the discourse, such as voting or buying behaviors, blog postings, or articles in the popular press. However, rhetoricians, specifically those using CTA, judge discourse not in terms of its actual effects, but in terms of how the discourse served to be persuasive in inducing immediate and future audiences.

Similarly, within the truth criterion, honesty is valued over deception, distortion, and willful misrepresentation. It is sometimes possible to make this determination based on external evidence (Stoner & Perkins, 2005). For example, a surveillance video of a crime might discredit a defendant's not-guilty plea. However, the truthfulness of claims is not always easy to discern. Most rhetoricians consider truth relative (Heath, 1986) and hold that no text could ever be long enough to tell the whole truth even if it could (Burke, 1966). Heath (2009) explained that rhetorical criticism focuses on "the role information, fact, plays in shaping knowledge and opinions as well as being convincing and motivating actions. It addresses the ways evaluations are debated and confirmed or challenged. It contests the wisdom of various policies, identities, and reputations" (p. 21). Relying on the intrinsic nature of texts, a critic can consider how language, form, content, and style serve to reflect or deflect particular realities in relation to the rhetor's objectives (Campbell & Burkholder, 1997). For instance, a critic might question if the
reasoning and evidence are sufficient to support the rhetor's argument (Stoner & Perkins, 2005).

The final criterion of rhetorical evaluation is concerned with the ethical dimensions of a rhetorical act (Campbell & Burkholder, 1997). There are a variety of standards that can be used to evaluate the ethical dimensions of a text, as rhetoricians judge "the long-term social and political implications of both the means and the ends of rhetoric" (p. 117). To determine how to evaluate the ethical dimensions of a discourse, Stoner and Perkins told critics, "review your analysis to see what sorts of questions you had upon discovering the rhetorical patterns in the texts" and "listen to what bothers you or impresses you about what you found in your analysis" (p. 117). Further, Kuypers (2009) said that, while the tastes and preferences on the critic will influence the ethical evaluation, critics can strengthen their evaluations if they consider how the text might be judged by others and by supplying good reasons for the judgments they do make. I recognized that the texts I analyzed have a variety of audiences. Before reaching my judgment, I considered not only my gut reaction to the rhetoric, but also tried to understand how other stakeholders would consider its social and political implications. Ceccarelli (1998) wrote that resistive readings help critics to examine texts that are likely to be experienced by groups differently or that are interpreted within the structure of intergroup conflict. Because there are a variety of stakeholders, there was no one clear-cut ethical evaluation, but rather I had to develop a judgment based on a variety of dimensions. I evaluated the texts based on these criteria within case analyses at the end of each analysis chapter and then across the case analyses in the final chapter of my dissertation.
Writing the criticism. Kuypers (2009) emphasized the importance of sharing a criticism with the public and preparing for, even inviting, counter-criticisms. While Campbell and Burkholder (1997) provided a good description of how to actually conduct a rhetorical criticism, they did not detail issues related to "writing-up" the criticism. I believe that reflecting on the art of writing a criticism is as important to engaging in rigorous scholarship as is considering analyses. I have already addressed some stylistic and reflexive issues related to writing in the prior section of this chapter; however, issues surrounding structure and style should be addressed with more depth.

A rhetorical criticism is more rigorous if is advances a new, well-developed, and well-supported argument (Brokreide, 1974). The first assumption in this statement is that criticism should advance a new idea. While description may supplement or substitute for a rhetorical experience, it does not build current theoretical or public understandings of a particular event or discourse in general. Black (1965) noted that the purpose of a well-developed argument is to help critics "gain the agreement of rational people" (p. 8). While Brokreide (1974) and Kuypers (2009) agreed that the purpose of an argument was to influence, they situated the need for a strong argument in the educational and invitational purposes of rhetorical criticism. For instance, Brokreide (1974) said that critics who argue are more useful and informative than those who do not because "a reader learns from an argued evaluation the grounds on which that judgment rests" and because these types of critics invite "confrontation that may begin or continue a process enhancing an understanding of a rhetorical experience or rhetoric" (p. 173). Kuypers stressed the invitational nature of rhetorical criticism so much that the critic should "hope that it [the criticism] will provoke some type of feedback" (p. 19). Feedback can be
positive or negative; regardless, it represents the critic’s entrance into a larger conversation in which they should continue to engage.

Critics develop their argument through the analysis; however, in practice, Brokreide (1974) described a set of criteria that establish a good argument:

(1) an inferential leap from existing beliefs to the adoption of new beliefs or the reinforcement of an old one; (2) a perceived rationale to justify that leap; (3) a choice among two or more competing claims; (4) a regulation of uncertainty in relation to the selected claim—since someone has made an inferential leap, certainty can be neither zero nor total; and (5) a willingness to risk a confrontation of that claim with one's peers. (p. 166)

Stronger arguments represent a greater number of these criteria with greater vigor than weaker arguments.

Critics must put forth new ideas and argue for particular understandings of a text, but they must also do so in a logical fashion. Because the effectiveness of argument structure is culturally bound, it is important to consider your audience(s) (Stoner & Perkins, 2005). Traditionally, Western and academic audiences prefer and expect arguments to develop using linear reasoning (Rybacki & Rybacki, 2004). In addition to considering the structure, it is important to focus on the quality of the argument. The quality of an argument is evidenced by the extent the critic justified his or her claims (Brokreider, 1974). It is important to balance description, interpretation and evaluation and to draw on examples from the discourse and the theoretical standpoint to evidence your claims. A well argued and supported, and as such a useful, criticism requires
rigorous analysis and careful planning to develop an argument, but also a commitment to process writing and draft revision.

Rhetorical texts. Heath (2009) positioned the voices of marketing and public relations professionals within a "wrangle in the marketplace of ideas, preferences, choices, and influence" (Heath, 2009, p. 23). With so many interest groups struggling for the authority in public negotiations of health risks, it can be difficult for a single group to attract public and policy makers' attention (Baumgartner & Leech, 2001). The collaboration of multiple organizations to form trade associations affords each corporation more discursive resources, including lobbyists and financial backing. When these resources are coupled with a quality messages it increase the likelihood of the associations being heard and drowning out the voices of rhetors with fewer resources, including public health and consumer groups. The Lobby Disclosure Act (LDA) of 1995 requires organizations to disclose the names of their lobbyists and the amount of money they have spent on lobbying efforts (Hind, Kay, & Vaerla, 2008).

Hind, Kay and Vaerla (2008) argued that the numbers reported by lobbying organizations are conservative because the LDA only accounts for the money spent on lobbying the U.S. House of Representatives. It does not account for the money spent to influence public opinion and ultimately policy using other forms of communication, including strategic communication aimed at the public. Ferreira (2006) argued that, even though the messages that emerge from marketing and public relations contribute to public understandings of the healthy and risky food practices, few scholars have analyzed how trade associations address notions of risk. The strategic communication produced by these groups, including advertisements, press releases, and web content, can be
understood as momentary snapshots of the wrangle that highlight certain beliefs, values, and discursive strategies (Cronin, 2004; Leff & Sachs, 1990). I elected to analyze the discourses presented on the trade associations’ websites because looking at the online discourses provided access to the most comprehensive set of information the public, industry groups, and health professionals would obtain if they were to use online resources as a source of information about sweeteners.

My case studies addressed this gap in the literature by critiquing discursive activity of three trade associations representing sweeteners. These associations provide strategic communication for a conglomerate of individual organizations. In this section, I briefly describe each trade association and identify the exact texts for critique.

McGee (1999) wrote that rhetoricians "first job as professional consumers of discourse is inventing a text suitable for criticism” (p. 288). There are numerous trade associations that represent the sweetener industry. I began to make-sense of this corpus of voices by categorizing the associations by the sweeteners they represented. Specifically, I sought to identify one association representing cane sugar, high fructose corn syrup, and artificial sweeteners each because these three sweeteners are popular with consumers and have been in the middle of regulatory and risk debates recently in the United States. I found the websites of these associations by searching terms such as "association," "organization" and the respective sweetener with Google's search engine. From the websites identified by the search, I was also able to find links to additional associations. Once I identified a variety of websites, I selected one association to represent each sweetener. I based these decisions on the professional appearance of the website (including graphics, texts, and interactive features) and the presence of multiple
rhetorical texts (including connective links, pamphlets, press releases, and advertisements). Based on these criteria, I selected the discursive activities of the Sugar Association (representing beet and cane sugar), the Corn Refiners Association (representing high fructose corn syrup), and the Calorie Control Council (representing sugar replacers such as artificial sweeteners).

First, in chapter three, I analyzed the rhetoric of the Corn Refiners Association (CRA). This association was established in 1913 to provide technical service, public relations, and government relations for the corn industry, specifically the wet milling industry in the United States (CRA, 2010a). A few of the member companies include major corn processors, such as Archer Daniels Midland Company, Cargill, and Corn Products International (CRA, 2010a). According to reports filed with U. S. House of Representatives, the CRA had at least eight lobbyists between 2006 and 2010 and spent nearly one million dollars ($970,000.00) on lobbying efforts aimed at government officials during this time (U.S. House of Representatives, 2010).

While this organization's homepage is www.corn.org, their materials concerning high fructose corn syrup are located at sweetsurprise.com. I analyzed the discursive activity located on the latter website and its connective links. Sweetsurprise.com contains discourse about high fructose corn syrup and specifically highlights the CRA's multimedia campaign that was launched in the summer of 2008 "to dispel myths and correct inaccuracies associated with this versatile sweetener and highlight the important role high fructose corn syrup plays in our nation’s foods and beverages" (CRA, 2010r). Links from sweetsurprise.com give audiences access to educational sites, myth vs. fact sheets, links to research studies, news and press releases, and the multimedia associated
with the campaign, including web banners, print advertisements, and videos of the television commercials. The rhetorical resources allotted to developing the CRA's online messages, aimed at educating the public about HFCS, were not necessarily reflected in their lobby disclosure reports, though its launch necessitated organizational resources and served to shape public understandings of risks associated with HFCS.

Next, in chapter four, I explore the rhetoric of the Sugar Association (SA) located on its website sugar.org and connective links. The association assumed its current name in 1947, but existed as the Sugar Research Foundation since 1943 (SA, 2010a). Originally, the group was "dedicated to the scientific study of sugar’s role in food and communication of that role to the public." However, their current mission is to "promote the consumption of sugar as part of a healthy diet and lifestyle through the use of sound science and research" (para. 1). Specifically, the group represents the growers, producers, refiners, and retailers of sugar from beets and sugar cane.

The SA's member organizations include a variety of large sugar companies and refineries based in and outside the United States, such as the American Crystal Sugar Company, the Imperial Sugar Company, American Sugar Refining Incorporated, and Dublin Dr. Pepper (SA, 2010b, 2010v). According to reports filed with U. S. House of Representatives, between 2006 and 2010, the SA spent less than 100 thousand dollars on lobbying efforts aimed at government officials during this time (U.S. House of Representatives, 2010). Not included in this monetary value was the amount of resources the SA allocated to developing their messages on their homepage, sugar.org. The website networks audiences to a variety of sites containing discourse meant for consumers, such as health information, news updates, recipes, games, and media resources, such as press
releases, fact sheets and background information. There was also a part of the website for SA members, which was not accessible to non-members.

Finally, in chapter five, I critiqued the discursive contributions of the Calorie Control Council (CCC) located on its website caloriecontrol.org and connective links. The association, established in 1966, aims to "provide an effective channel of communication among its members, the public and government officials, and to assure that scientific, medical and other pertinent research and information is developed and made available to all interested parties" (CCC, 2010a).

Currently, the Council represents low-calorie and reduced-fat food and beverage industries from around the world. It has over 30 members including candy companies (such as Cadbury Adams and the Wrigley company), beverage companies (such as Dr Pepper Snapple Group, Pepsico, and the Coca-Cola company), sweetener brands (such as Sweet'N Low), and a variety of technological firms that develop and sell sugar and fat replacers to the food and beverage industry (CCC, 2010b). The amount of financial and lobbying resources the CCC spent on developing messages to shape policy is more complicated to determine than of the CRA and SA. The CCC outsources their strategic communication efforts to Kellen Communications, a public and government relations agency (Kellen Communications, 2011). Lobbying disclosures of Kellen Communications do not reflect the agency's efforts to craft persuasive messages on behalf of the CCC. Kellen Communications did claim that their public and government relations maintained the acceptance of saccharin by the FDA and the public a time during which Hrebenar (1997) reported that the CCC said that they spent more than $800,000 in one quarter in 1977 lobbying against the ban on saccharin.
Kellen Communications designed and maintained CCC's two main websites, caloriescount.org and caloriecontrol.org. These websites have information and resources related to sugar and fat replacing ingredients. For the purpose of my dissertation, I focused on the links to the sugar replacers and their unique connective links. From this section of the website, audiences can access websites and documents containing information about sugar replacers, recipes, articles and videos, press materials, among other items.

Each association's website contained links to a variety of information, all of which could lend itself to rhetorical analysis; however, for the purpose of my dissertation, I limited the discourses those which were a part of the homepages' domain. I surveyed and generally described each association’s discourses as a whole to identify significant patterns. At this point, I selected a smaller number of specific texts that exemplify the patterns for analysis. Preliminary readings of the texts and the literature in chapter one suggested that issues of ambiguity and equivocation were likely to become central in the subsequent analyses. I have chosen to incorporate a discussion of these issues in the analysis as they also influenced how I looked at the texts.

**Ambiguity and Equivocation as Discursive Practices.** The polysemic nature of rhetoric means that no word has a single and universal meaning (Ceccarelli, 1998). This implies that all discourses can be interpreted differently by audiences based on how they experience the event. Further adding to the ambiguity of discourse is the under specification of terms and the ability of metaphor, proverbs, analogies and other analogous arguments to prevent definiteness (Beck, 2005). Although multiple interpretations can arise from a communicative event, even greater distortions occur in
the context of equivocal and ambiguous communication (Eisenberg, 1984). Ambiguity is usually operationally defined in opposition to clarity. It is often paralleled with indirectness, vagueness, and disqualification. Papa, Daniels, and Spiker (2008) wrote that "ambiguity occurs simply because a symbol or expression has different meanings for different people. There is no guarantee that two people will share the same meanings for a term or expression, even when it is simple and concrete" (p. 25).

Traditionally, ambiguity has been situated as incompetent communication because a shared meaning was not attained. For example, ambiguity has been found to increase knowledge stickiness, that is the difficulty of sharing information at the expense of the interactants (Simonin, 1999). However, Eisenberg (1984) pointed out that "clarity is a measure of communicative competence if the individual has as his or her goal to be clear" (p. 230). Sometimes ambiguity is accidental and unintentional; other times, ambiguity is quite deliberate and strategic. Indeed, Ceccarelli (1998) argued that the polysemic nature of discourse can be seen as a subtle instrument of a skillful rhetor, rather than a subversive instrument of audiences. In these cases, ambiguous and equivocal communication could be considered a competent and valuable rhetorical strategy.

Bavelas, Black, Chovil, and Mullet (1988) developed a more extensive theory of equivocation to explain how rhetors use ambiguity. They theorized that strategic ambiguity or equivocation arises from social situations in which the rhetor considers it best not to say anything, but still feels has he or she has to say something. They argued that equivocal messages avoid or obscure one of four elements in a communicative situation: sender, content, receiver, or context. First, an equivocal message may avoid
showing whether the message is a speaker’s own opinion. A speaker using the expression “authorities claim,” for instance, is not clearly saying whether it is the source’s own opinion (Hosman, 2002). Second, a message may be equivocal because it does not have clear content. For example, a rhetor might not make explicit conclusions when explaining the relationship between variables (O’Keefe, 2002). Causal ambiguity may arise from uncertainty about event, but it can also arise when rhetor does not want to disclose causal information that is not favorable (Mosakowski, 1997). Research on crisis communication has found that the tobacco and alcohol industries often use ambiguity when they address the relationship between smoking or binge drinking and personal health (Atkin, McCardle, & Newell, 2008; Ulmer & Sellnow, 1997). Equivocal messages may also avoid addressing a particular audience. For example, politicians often avoid addressing critical audiences by holding private press conferences (Bhatia, 2006). Finally, equivocation occurs if someone wants to avoid the immediate context. This occurs, for example, if someone does not offer a direct answer to a question (O’Keefe, 2002). For example, instead of answering “no comment” to questions about rumors, which usually is interpreted as a sign of guilt (Coombs, 1999), a rhetor might say “As a matter of policy I never discuss or speculate on rumors” (Howard & Mathews, 2000). Lippard (1988) found that people tend to use equivocation when they are concerned that answering a question honestly would negatively impact their relationships with important others.

Messages that are ambiguous can serve multiple discursive functions. In general, ambiguous or equivocal messages “allow for the broadest possible degree of common ground, identification, and co-creation of meaning” (Larson, 2009, p. 145). As a result,
strategic ambiguity can lead to “two or more otherwise conflicting groups of readers converging in praise of a text” (Ceccarelli, 1998, p. 404) and promote "unified diversity" between sources and audiences (Eisenberg and Goodall, 1997). For example, strategic ambiguity is found in organizational missions, goals and plans, allowing divergent interpretations to coexist and enabling diverse groups to work together (Eisenberg & Witten, 1987). In health contexts, scholars have argued that health promotions should include situational and audience ambiguity to broaden the appeal of entertainment-education messages (Svenkerud, Rahoi, & Singal, 1996) and public service announcements (Dejong, Wolf, & Austin, 2001).

On the other hand, equivocal communication can also deny interpretations or stir disagreement. Eisenberg and Goodall (1997) explained that often ambiguity is used strategically to preserve “privileged positions by shielding the powerful from close scrutiny” (p. 24). This serves the rhetor because words that seem to mean one thing can be made to mean something else if the context, relationships, or goals change. For example, rhetorical critics have claimed that strategic ambiguity enables governments to avoid taking a clear stance on issues to keep future politics or military options open (Keith, 2001; Williams, 1983). Berheim and Whinston (1998) found that rhetors account for unforeseeable changes in the economic environment by leaving some verifiable aspects of initiatives ambiguous in contracts so to allow renegotiation in the future. On the other hand, the denial of a common interpretation can also be beneficial if a rhetor wants to initiate or maintain a controversy. For example, Murphy (1994) claimed Al Gore used an analogy assimilating the Marshal Plan and climate change because
audiences’ lack of consensus concerning the Marshal Plan would transfer to climate change, essentially serving to keep climate change on the cusp of public debate.

The use of ambiguity and equivocation in messages can also influence audiences’ perceptions of the rhetor. For example, Barrett (2005) argued that, because knowledge of anthrax’s transmission and effects was sparse, when anthrax became a crisis in 2001, the Center for Disease Control and Prevention (CDC) used ambiguity and equivocation to avoid making statements that they would later have to retract. However, Barrett argued that these strategies hurt the CDC’s credibility because anxious audiences wanted clear information about their risks and means of prevention. Ambiguity was interpreted as either a lack of expertise or a lack of goodwill. Atkin, McCardle, and Newell (2008) argued that the alcohol industry has utilized ambiguity to maintain a favorable image in light of unfavorable claims about the relationship between alcohol and health. Specifically, their response appeals to consumers to use alcohol in "moderation" and/or to "drink responsibly." They found that ambiguous "responsibility" messages negatively impact both the alcohol manufacturer’s corporate credibility and consumer's purchasing intentions.

Bevlas, Black, Chovil, and Mullet (1988) argued that equivocal communication arises from situational variables and that ambiguity is best understood when it is studied using message effect data. Atkin, McCardle, and Newell adopted such an audience response method to study the meanings of ambiguity in alcohol advertisements. While this approach was valuable, it falls outside my goals for my dissertation. Because few scholars have looked at the construction of risk in marketing and public relation discourses (Ferreira, 2006), it was important to survey the nature of strategic
communication. Ceccarelli (1998) suggested that when exploring issues surrounding ambiguity, critics need to value the hermeneutic depth of discourse. Rather than considering a text's meaning as universal, critics should “expose the tensions within works” (p. 369) by “arguing that both an interpretation and its opposite are sustained by the text” (p. 408). Further, the level of discursive clarity or ambiguity is also dynamic in that it changes over time even within the same text (Cornelison, 2001). As Brokreide (1974) said, critics should make an argument. Looking at ambiguity from a rhetorical lens allows critics to make claims that expanded way that audiences should read a text.

To identify and explore ambiguity and equivocal communication, Ulmer and Sellnow (1997) told critics to consider three questions during analysis: questions of intent, locus, and evidence. While the trade associations I chose to analyze in my dissertation are not currently situated in times of crisis, I believe Ulmer and Sellnow’s questions are valuable guideposts of analyses of strategic ambiguity. As I analyzed the text I used these questions to enrich my interpretation of the texts; however, I did not adopt them as a rigid framework for analysis.

Questions of intent consider the motivation behind producing a particular discursive event. Because language is purposeful (Burke, 1966), Ulmer and Sellnow (1997) argued that scholars can explore discourses in an effort to discern the motives of rhetors. For example, in a crisis situation, rhetors have to prove their authenticity, or they will likely lose credibility and public support (Hearit, 1995, 1996a, 1996b). Critics concerned with questions of intent could analyze messages to see if the text includes evidence of contradicting goals or if the story about an exigency appears incomplete. For example, Ulmer, Sellnow, and Seeger (2007) suggest that, when exploring rhetorical
responses to crisis, critics should consider the rhetor’s involvement the exigency and then how that involvement is discussed in the text.

*Questions of locus* are concerned with the placement of blame (Ulmer & Sellnow, 1997). For example, in crisis situations, Seeger (1986) said that if an organization's social legitimacy is called into question, the responsibility may lie within or outside the organization. To counter the threat of being blamed, some companies present a story to the public that identifies a particular external agent as a responsible source and, thus, the source who is to blame. Frequently, organizations deny responsibility and situate factors outside of their control as the source of the problem (Ulmer & Sellnow, 2000, p. 148). Similarly, Benoit's (1997) image restoration strategies including denial, evasion of responsibility, and reducing the offensiveness as frequently used strategies. Critics concerned with ambiguity can use questions of locus to identify how the text situates blame and then question who or what is and what is not being held responsible.

*Questions of evidence*, on the other hand, are concerned with the management of scientific or regulatory controversy (Ulmer & Sellnow, 1997). Frequently, scientific and legal debates emerge over the reality of the crisis situation or the best plan of action for the future (Beck, 1992). These controversies often have interlocutors who draw on the same data but who arrive at a variety of complex and conflicting interpretations. The sides are communicated by the distinct organizations, but the complexity of the arguments is interpreted and presented through the media (Sellnow, 1993). From a social constructionist standpoint, the validity of these claims are not of importance nor necessarily knowable. Rather, social constructionists are often concerned with the messiness of such controversies and are concerned with discourse and the way the
language and reasoning shape the way we understand the world (Turnbull, 2004). In sum, Ulmer and Sellnow (1997) included reasoning from evidence in this category because, regardless of validity, it is often the reasoning process that impacts public understandings of issues. Critics looking at how ambiguity functions within a text can use questions of evidence to identify fallacies in reasoning and weaknesses in the rhetor’s support for their argument.

Ulmer and Sellnow (2000) claimed the answers to questions of intent, locus, and evidence are likely to hold some ambiguity because organizational discourses exist within historical, social, and economic contexts and in relation to other organizations and stakeholders. Similarly, Heracleous (2006) argued that "organizational texts are often bound up with and shaped by, imperatives such as rules of communicative appropriateness in particular organizations, and overarching purposes as espoused by dominant coalitions" (p. 6). Since the meaning of texts does not reside solely in intra- or inter-textual relations, it is also important to consider the dynamic interaction and exigencies that exist in the social context within which agents act, the organizations and other stakeholders (Lupton, 1994).
Chapter Three:
When a Spoonful of Ambiguity helps the Sweetener Go Down: An Analysis of the Sweet Surprise Campaign's Negotiation of Risks Associated with High Fructose Corn Syrup

Rhetorical Context

High fructose corn syrup (HFCS) is a corn-derived ingredient that has been added to food products, such as soft drinks, snack foods, and baked goods, as a sugar substitute since the late 1970s (Thompson, Garcia, & Dallafoir, 1996). Although HFCS, cane sugar, and honey share similar chemical structures, flavors, and caloric values (White, 2008), HFCS has become the sweetener of choice for many food companies because of its liquid form, intense sweet flavor, and nature as a preservative. Perhaps most importantly, HFCS costs less for major manufacturers to produce, incorporate into products, and transport. The use of HFCS has expanded to the point that, between 1995 and 1997, the United States Department of Agriculture (USDA) reported that production of high-fructose corn syrup outstripped sugar (Lord, 1997). However, the USDA projected that consumption would stabilize due to new taxes on the export of items containing HFCS (Brant & Flores, 2004). Indeed, while the consumption of HFCS peaked in 1999, at 63.7 pounds per capita, more recent estimates of 53.2 pounds per capita in 2008 are similar to the amounts consumed during the early 1990s (USDA, 2009). The consumption of HFCS remains comparable to refined sugars.

According to White (2008), the success of this seemingly mundane ingredient was deflated by a publication in the 2004 Journal of Clinical Nutrition. In this article, Bray, Nielsen, and Popkin (2004) concluded that the HFCS may play a unique role in the
obesity epidemic because items that contain HFCS, such as cookies, candies, and soft drinks, are often cheaper than healthier choices and, therefore, consumed more frequently. White (2008) argued that this study's conclusions were "translated as fact by leading nutrition journals, weekly and specialty magazines, national and local newspapers, and an endless number of television programs"; subsequently, HFCS was "vilified by scientific circles and then in the public arena" (p. 1717S).

Since the publication of Bray's study, there has been much debate over the riskiness of HFCS. The main point of contention concerns the relationship between HFCS and the health risks associated with weight gain, such as obesity and diabetes. There are two lines of argument that stem from this point of contention. One centers on the unique role of HFCS from a functional nutrition perspective; the other focuses on its contributions to health risks from a ecological perspective.

The functional nutrition-based debate surrounding the unique contributions of HFCS toward health focuses on how the body processes the sweetener. Many of the concerns related to HFCS risks have been based on research findings that indicate positive associations between fructose consumption and obesity, insulin resistance, metabolic syndrome, and elevated LDL cholesterol and triglyceride levels (Elliott et al., 2002, Lustig, 2006; Isganaitis, & Lustig, 2005). These studies have been criticized for their lack of external validity as they generalized results based on fructose to HFCS (White, 2008). To address this problem, recently a study compared HFCS to other sweeteners to determine its contributions to various health conditions. The study found that rats with access to high-fructose corn syrup gained significantly more weight than
those with access to table sugar, even when their overall caloric intake was the same (Bocarsly, Powell, Avena, & Hoebel, in press).

The findings of studies supporting the healthiness of HFCS based on functional nutrition evidence have been challenged by experts who contend that HFCS does not uniquely contribute to obesity and associated conditions (White, 2008). Their main argument is that HFCS, sugar, and honey are all metabolized similarly and, as such, HFCS is no more risky than sugar or honey. For example, Soenen and Westerterp-Plantenga (2007) concluded that the energy imbalances resulting from HFCS-sweetened soft drinks were not different from those of other caloric drinks, such as those sweetened with sucrose. Similarly, Melanson, Angelopoulos, Nguyen, Zukley, Lowndes, and Rippe (2008) found that HFCS and sucrose had comparable influences on appetite and, subsequently, caloric intake. White's (2008) literature review also demonstrated that HFCS is safe and that most research that has unfavorable conclusions about HFCS is based on careless research designs and inferences. In addition to finding that HFCS impacts appetite and metabolism similarly, scholars have addressed the relationship between HFCS and diabetes. White (2009), for instance, concluded that "HFCS does not pose a unique dietary risk in healthy individuals or diabetics" (p. 1219S).

The second major debate over HFCS's link to obesity is based on an ecological framework. As opposed to being concerned with a unique biological cause-effect relationship between HFCS and obesity, ecological frameworks understand the causes of obesity and its potential solutions as involving more than applying science to understand the functions of various foods in the body (Monsen & Van Horn, 2008). It expands on
scientific explanations of weight gain to identify and change organizational structures that promote excess weight, including physical and social environment of communities.

Many accusations against HFCS are not concerned with the unique nutritional contributions of HFCS, but, rather, low nutrient-densities of foods containing HFCS and the increased availability of and disparities in access to foods with added sugars. For example, researchers claim that the presence of added sugar in the market place rose by 20 percent between 1970 and 2000 (Bray, Nielsen, & Popkin, 2004; Putnam, Allshouse, & Kantor, 2002). The increased availability of items high in added sugars is correlated with the consumption of added sugars. Increased consumption of added sugars is framed as problematic for two reasons: (1) added sugars contribute to the caloric values of foods, and (2) usually, this increased caloric intake is not coupled with increased nutrition. For example, some scholars have pointed out that foods with added sweeteners are commonly nutrient deficient (Pollan, 2006, 2008; Popkin & Nielsen, 2003). That is, they "provide most of their energy in the form of sugar but contain little or no dietary fiber, vitamins, or minerals" (Insel et al., 2004, p. 157). The concern is not just that HFCS adds calories to one's diet, but that those calories do not provide any additional nourishment.

In addition to being increasingly available and nutrient deficient, scholars have expressed concern that the low-price foods containing HFCS and other added sweeteners, disproportionally available to economical depressed communities, may explain why these groups are also more likely to be overweight. While people of all classes, genders, races, ages, and geographic locations may experience excess body weight, obesity is highly correlated with poverty (Maurer & Sobal, 1995). Research has demonstrated that low income families spend less on fruits and vegetables and more on nutrient-deficient, foods
than do higher-income families (Blisard, Stewart, & Joliffe, 2004). Additionally, some argue that nutrient deficient foods are often available in increasingly large portion sizes at relatively low prices (Story et al., 2008). Low income families are more likely to purchase these cheap, but nutrient deficient, foods (Drewnowski & Bellisle, 2007; Spark, 2007). In addition to the discrepancies that exist due to one's income, access to healthier foods is also correlated with one's neighborhood. Studies in the US and Canada have found neighborhood differences in the price and availability of food. Healthier foods are generally more expensive and less readily available in poorer than in wealthier communities (Chung & Meyers, 1999; MacDonald & Nelson, 1991; Morland, Wing, Diez-Roux, & Poole, 2002).

Multiple scholars have resisted ecological claims that frame HFCS as risky. For example, White (2008) agreed that, from 1970-2005, caloric intake and obesity in the United States increased; however, they removed the blame from sugars to a focus on more general nutritional changes. Increases in caloric intake, he argued, were not due to a disproportionate increase in added sugars, but rather an overall increase in calories from all food sources including fats and all other nutrient groups. Similarly, others have diffused the attention from HFCS to focus on the numerous environmental factors that may also contribute to obesity, including food media, changes in portions sizes and decreases in physical activity (Hill, 2006; Hill & Peters, 1998). Little research refutes research findings concerning nutrient densities of foods that contain HFCS or added sugars in general. Nor are the, socio-economic disparities related to access usually disputed.
While researchers have arrived at different conclusions about the healthiness of HFCS, they all seem to agree that more research is needed. Of specific concern from a functional standpoint is that very few studies have actually tested HFCS or looked at the long term effects of HFCS (Bray, 2010; Nuttall, 2005). From an ecological standpoint, "more information concerning current levels of HFCS in the food supply, as well as individual-level HFCS consumption, must be established" (Hein, Storey, White, & Lineback, 2005, p. 253). The publication of new research means that the debate over HFCS's riskiness from a functional standpoint has not yet been resolved.

**Corn Refiners Association**

The scientific controversy surrounding HFCS amounted to a great deal of uncertainty about the role of HFCS in the human diet, which has implications on HFCS consumption and, subsequently, the industries involved in HFCS production and retail. The threat to the agricultural and food industries demanded a rhetorical response (Bitzer, 1968). The Corn Refiners Association’s (CRA) online discourses are one response.

The CRA is a trade association that provides technical service, public relations, and government relations for the corn industry, specifically the wet milling industry which processes more than half of the corn processed in the United States (Singh & Johnston, 2004). A few of the member companies include Archer Daniels Midland Company, Cargill, and Corn Products International (CRA, 2010p).

The homepage, sweetsurprise.com, had seven links to secondary pages that categorically provided access to tertiary materials concerning HFCS and family health, myths versus facts, science and research, the media, and educational documents among other things. Through these pages audiences could access educational handouts, press
releases, and the campaign's multi-media kit, including three television advertisements, three magazines adverts, two newspaper adverts, and seven internet banner advertisements. I accessed and printed the CRA’s discourses on June, 18, 2010 before starting analysis.

**Study Rationale**

Given their discursive resources and potentially significant role in consumer health, it is particularly important to focus on the role trade associations play in public discussions of food risks. However, few scholars have explored their role in representing the food industry in the context of nutritional risk. In this chapter, I employ close textual analysis to uncover the discursive contributions of the CRA's online communication. Specifically, I offer an analysis of the discursive activity on its website, sweetsurprise.com.

**Analysis**

The CRA relied heavily on scientific evidence and reasoning to build an argument from authority. However, I argue that their presentation of science was not without bias. The CRA was ambiguous about the scientific findings that do not support HFCS. This ambiguity was established through a series of straw man fallacies ranging from the misrepresentation of HFCS's opponents to the strategic selection of the arguments it presented to counter-argue. In this section, I explain these themes, and I provide key examples to support my claims about the CRA’s rhetorical contributions to identifying, making sense of, and managing the risks ascribed to HFCS.

**Argument from scientific authority.** The Sweet Surprise campaign was aimed at "changing the conversation about HFCS" (CRA, 2010r, para. 1). As suggested earlier,
the CRA entered into a conversation where there was a great deal of confusion and, subsequently, skepticism of the nutritional value of HFCS in our food system. To secure vitality of the CRA, and the refiners it represented, the CRA (2010r) developed a message that sought to "dispel myths and correct inaccuracies associated with this versatile sweetener and highlight the important role high fructose corn syrup plays in our nation’s foods and beverages" (para. 1). To reduce the skepticism surrounding HFCS, the CRA drew heavily on scientific expertise and reasoning to support their argument that HFCS was safe.

Sweetsurprise.com attempted to build expertise by emphasizing the authority of science and medicine. The most obvious construction of expertise was presented in the "Experts on HFCS" section (CRA, 2010j), which contained a series of links to expert sources. These sources included the American Medical Association (CRA, 2010f), the American Dietetic Association (CRA, 2010e), the Food and Drug Association (CRA, 2010h), physicians (CRA, 2010i), registered dieticians (CRA, 2010k), academic researchers (CRA, 2010d), and consumer advocates (CRA, 2010g). On each "expert" page, the CRA provided quotes about HFCS made by the organization or a particular person that fell into the respective category. Following each quote was a citation that included the organization's or person's name and, when relevant, the source's degree(s) and certification(s), job title, and the name and date of the resource from which the quote was taken. All of the individuals cited on these pages had some form of advanced education, ranging from medical and dietary degrees to doctorates of philosophy. Expertise was also represented in a more general form. For instance, the titles of the CRA's four internet fact banners, Doctors on Obesity (2010aa), Nutrition Experts on
In addition to describing the health professionals as experts associated with food risks, the CRA (2010o) also established expert resources. The "science and research" section listed seven different journals that they claimed were valuable sources of information about HFCS, including the *American Journal of Clinical Nutrition*, *Critical Reviews in Food Studies and Nutrition*, *Food and Chemical Toxicology*, the *Journal of Nutrition*, *Nutrition, Nutrition and Metabolism*, and *Nutrition Today*. The CRA provided information about fourteen different studies, conference proceedings, or scientific reviews that address the relationship between HFCS and its correlations with health risks. Each link contained a brief description of the article written by the CRA, an abstract of the study written by the authors, and, often, a link to the article.

The CRA employed this rhetorical strategy to construct expertise as an attribute of health professionals who are able to produce and/or interpret scientific information about nutrition objectively. By drawing on health experts to judge the value of HFCS in our food system, the CRA situated questions about HFCS within the domain of scientific evidence. Not only did these references to scientific experts and resources serve to establish the authority of science in the conversation about HFCS's safety, but it also served to build secondary credibility for the CRA. The experts’ credibility became grounds for the CRA's argument. By citing these sources, the CRA demonstrated their access to the information and opinions of the scientific community. And, because the information was from authoritative sources, the information presented by the CRA should
not be questioned in the same manner as that which is talked about in everyday media and interpersonal transactions.

In sum, the CRA's reliance on science-based information and experts was consistent with the dominant risk ideologies that Crawford (1985) and Pollan (2006, 1008) argued govern how people understand the relationship between health and lifestyle. The representation of scientific information coupled with portrayals of an ignorant public throughout the CRA's website established that scientific professionals had the authority to talk about the safety of HFCS. By situating the value of HFCS within the domain of scientific discourse, the CRA reflected and served to reinforce dominant risk ideologies. As Pollan (2008) suggested, under an ideology of nutritionism, science is privileged over other ways of understanding and interacting with food, such as adherence to tradition or tastes. Also, by situating science as the most valuable form of debate over HFCS's safety, the campaign limited who could participate in discussions about health, decision making, and relevant policies. Competent conversations about HFCS were dependent on interactants' educational background. Those who had received formal training in the sciences could participate in conversations. Those who had not were excluded. Rather, they needed to be educated by the experts first. This framework reinforces a deficit model where the public is understood to be helpless and in need of information.

In addition to appealing to scientific expertise to gain authority, the CRA situated their argument using a style of argumentation that has authority within the scientific communalities. As opposed to accepting a claim based on its source, scientists are more likely to reason for the acceptance or rejection of a particular proposition based on the general consensus and long-standing support for one theory over another (Rieke, Sillars,
& Peterson, 2009). The CRA drew on this appeal to authority to support their argument that HFCS is safe by frequently referencing scientific publications and consensus in the community. The CRA (2010y) said that,

> the validity of a study is often measured by the scientific journal in which it is published. The significance of publication in peer-reviewed journals is that the research has passed the scrutiny of trained scientists, with no vested interest in the subject, who are able to comment on the adequacy of the experimental design and the validity of the conclusions. Considerable research on high fructose corn syrup has been published in prestigious, peer-reviewed journals. (para. 3)

This passage described objectivity and consensus as criteria used by the scientific community to establish the validity of scientific information. The most obvious development and reinforcement of the CRA's (2010j) argument through appeals to scientific consensus appeared in the "Experts on HFCS" section. This section provided links to the opinions of eight different categories of expert sources. The quotes represented on these pages represented a scaffolding framework to develop an evidence-based argument. The original argument that HFCS is safe and nutritionally equivalent to sugar was repeated by each source. Each additional source also provided a new argument and reinforced or supplemented the sub-arguments presented before it. The sub-arguments suggested that there is unfounded confusion about the safety of HFCS. The CRA said that a variety of issues have lead to uncertainty surrounding HFCS's safety, including the media, marketing, and consumer ignorance.

Another sub-argument refined the argument that HFCS is safe by advocating for the safety of HFCS if it is eaten in moderation.
For example, the American Medical Association (AMA) page was the first link on the list of expert sources. Both of its quotes claimed that sugar and HFCS are nutritionally equivalent. The reasoning is that if one thinks sugar is safe, then they should also think that HFCS is healthy. For instance, the AMA was quoted as saying "after studying current research, the American Medical Association (AMA) concluded today that high fructose corn syrup does not appear to contribute more to obesity than other caloric sweeteners" (CRA, 2010f, para. 1). The second link contained quotes from the American Dietetic Association (ADA). The quotes represented on this page ranged from factual claims that equated sugars with HFCS and ones that framed total calorie intake as a larger concern than any sweetener. In 2008, they wrote, "The source of the added sugar – whether sucrose, high fructose corn syrup, honey or fruit juice concentrate – should not be of concern; rather it is the amount of total calories that is important" (as quoted in CRA, 2010e, para.4). These sources reinforced the original argument. The third link represented quotes from the Food and Drug Administration (FDA), which reinforced the messages that HFCS was the same as sugar and safe, but also added that HFCS is considered a natural ingredient.

The next four sources fell under broader professional categories. The sources were individuals, as opposed to the unified voices of organizations. The quotes represented in these sections were not very diverse. Each page had a few quotes that reinforced the notion that HFCS is safe to eat and nutritionally the same as sugar. Each quote contributed new ideas sequentially. The page that referenced the quotes of medical doctors contained five quotes from three different sources. Together these sources reinforced the notion that HFCS is nutritionally equivalent to sugar and safe, but they
extended upon the prior quotes from the AMA, ADA, and FDA by describing the public understandings of HFCS. For example, David Ludwig, M. D., Ph.D., (2009) was quoted as saying, "HFCS is one of the most misunderstood products in the food supply" (CRA, 2010i, para. 1). Arthur Frank, M. D., said that the negative image HFCS has acquired is based on insufficient correlation data (as quoted in para. 3). Together these quotes suggested a deficit in public understandings of HFCS and claimed that misinterpretations of research data was the source of the problem. The fifth page, made up of quotes from registered dieticians, presented quotes from five different sources (CRA, 2010k). These quotes reinforced the idea that sugar and HFCs are nutritionally equal and that there are misunderstandings about HFCS, but the quotes also contributed to the overall argument by identifying journalists as the sources of the confusion about HFCS. The final two links to quotes from academic researchers (CRA, 2010d) and consumer advocates (CRA, 2010g) reinforced the notion that HFCS and sugar are nutritionally equivalent and that there is wide misunderstandings of HFCS, but attribute the source of the confusion to other sources, including marketing (Kurfeld as quoted in CRA, 2010d, para. 3), public assumptions (Levine as quoted in CRA, 2010d,para. 4), and urban myths (Center for Science in the Public Interest, as quoted in CRA 2010g, para. 3).

By using a scaffolding framework to structure the development of their arguments the CRA established that their arguments about HFCS are valid because there is long-standing disciplinary acceptance of the safety of HFCS, its similarity to sugar, and arguing that faulty beliefs are due to media and consumer ignorance. In this way, authority was established not only by citing a variety of scientific sources and evidence,
but also by apparently demonstrating consensus. However, in the next sections I question the CRA’s construction of consensus by identifying straw man fallacies in their argument.

**Argument from ambiguity and fallacious reasoning.** In the previous section, I demonstrated that the Sweet Surprise CRA relied heavily on scientific expertise and notions of scientific consensus to promote HFCS. Much of the credibility given to scientific results and claims was based on the authority of the scientific method, a method that is commonly thought to make humans better able to make objective and valid claims about reality. While the CRA drew on scientific experts, evidence, and consensus to build their case for HFCS, its argument was not as strong and objective as it appeared. In this section, I argue that the CRA used fallacious reasoning and was strategically ambiguous about scientific literature on the nutritional value of HFCS. Specifically, I claim that the CRA developed multiple straw man fallacies to weaken their opposition and strengthen their case that HFCS is a safe sweetener.

A straw man fallacy is committed "when you misrepresent your opponent's position, attribute to that person a point of view with a set-up implausibility that you can easily demolish, then proceed to argue against the set-up version as though it were your opponent's" (Johnson & Blair, 1983, p. 71). Talisse and Aikin (2006) further developed theoretical understandings of the straw man fallacy to include not only strategic misrepresentations of one's opposition to strengthen the rhetor's argument, but also the strategic selection of weak opponents or easily defeated parts of an opponent's argument. Both forms are considered problematic because they violate conversational norms and limit dialogue.
First, the representation form of the straw man occurs when rhetor A takes advantage of a rhetorical situation by incorrectly representing the argument of his or her opponent, B, but refutes this crafted version as though it were the original. Talisse and Aikin (2006) called the representation form of the straw man fallacy "opportunistically misrerepresentative" (p. 347) because the perversion happens in a way that weakens B's position and strengthens rhetor A's claims. Walton (1996) said that a rhetor can weaken the views of their opposition by oversimplifying, omitting of nuances or qualifications, applying unfavorable analogies, or using absolutes or generalizations when describing their opponent's statements.

The second form of straw man fallacy occurs through the process of selection. To commit the selection form of the straw man, a rhetor is ambiguous about the variety or sophistication of their opposition. Instead of discussing all of the major points of contention, a rhetor "cherry picks" the weakest critiques or parts of the opposition to refute (Talisse & Aikin, 2002, p. 347). When a rhetor commits a selection straw man fallacy, he or she presents an accurate description of only an aspect of their overall opposition. For example, a rhetor can select and refute the least substantial claims of their opposition. In this case, audiences who know little about the debate are lead to believe that the rhetor attended to and successfully refuted the strongest criticisms. A rhetor can also commit a selection straw man if he or she refutes the positions of a single weak individual or generic opposition as though they were representative of the larger opposition movement to which they belong. The rhetor then refutes the weakest critic and their criticisms "and then explicitly takes himself or herself to have shown that all
extant articulations of the opposing view are as easily dismantled" (p. 35, original emphasis).

I argue here that the CRA used a straw man fallacy by misrepresenting the significance of the scientific controversy that surrounds HFCS and by selecting critics and counter-arguments that are most easily refuted. Walton (1996) said that to identify and analyze a straw man fallacy, audiences and critics must be familiar with extant literature on the subject and the arguments of the multiple voices that comprise the rhetorical environment. The claims I make in this section are based on a close reading of the CRA discourses in concert with the scientific literature on HFCS that was and was not represented in by the CRA. This literature was previewed in the literature review and is cited in the reference section.

**Erecting the straw man.** Though there are multiple voices contributing to the debate over the safety or riskiness of HFCS, including scientists, scholars, and consumer advocates who represent a range of positions, the CRA situated HFCS criticism as coming from media, marketing, and consumer ignorance, not the scientific community. By distorting the identity of HFCS's opposition, the CRA reconstructed the debate over HFCS and altered the rhetorical situation. In this section, I demonstrate how the CRA committed a straw man fallacy by strategically distorting the identity of HFCS critics to make all opposition of HFCS look inept and, thus, easily discreditable by the CRA.

**Constructing an inept opposition.** At the heart of the CRA's argument are the claims that HFCS is as safe as sugar, and that any other views are misinformed. Quotes from the "Experts on HFCS" section suggested that media, marketing, and consumer ignorance were the main source of misinformation about HFCS. Within each of these
quotes, and other CRA discourses, the oppositional source is situated as inept and incapable of identifying and making sense of the research on HFCS.

The CRA situated the media, including journalists and marketers, as a main source of misinformation about HFCS. For example, Kathy Kolas, R. D., Ph.D., (2009) was quoted as saying that,

As a rule, journalists are trying to report something ‘new’ or something that challenges the usual way of thinking. This goal can contribute to reporting health stories that conflict. … Journalists writing about the supposed dangers of consuming high-fructose corn syrup (HFCS) fell into that trap. As a result, many consumers blame HFCS for causing the obesity epidemic. … Most experts know that the composition of HFCS and sucrose are very similar and that the body uses both in the same way. (CRA, 2010i, para. 3)

Similarly, the "Educational Toolkit" claimed that

Obesity is an important public health matter. As a result, many scientists, health professionals and regulators are actively searching for causes and solutions. Journalists are also covering the subject, with varying levels of expertise. Unfortunately, some press reports oversimplify the issues by attempting to single out specific ingredients, including high fructose corn syrup, as the sole cause for the complex conditions of overweight and obesity. (CRA, 2010n, para. 1)

These passages recognized that there are a variety of sources of information about HFCS, including experts, such as health professionals, regulators, and journalists. Journalists are sources of health information about HFCS, but the CRA suggested that they lack credibility because they seek sensationalism and conflict, rather than stable and well-
agreed upon information. These goals, they argued, have limited the capacity of journalists to interpret and communicate health information.

Marketing was another media form selected by the CRA as a source of misinformation about HFCS. For example, the CRA (2010s) said that an "analysis of high fructose corn syrup-free marketing suggests that some food companies are contributing to sweetener confusion" (para. 1). The CRA argued that the HFCS-free labels on food products constructed or reinforced negative connotations about HFCS that were invalid. Denotative meanings of the HFCS-free claims are not inaccurate; it is likely that the products do not contain HFCS. Similar claims about marketing were provided in a full-page newspaper advertisement called the Schmear Ad (CRA, 2010q).

In this ad, a picture of a bagel topped with cream cheese was accompanied by text that asked, "Could it be another schmear advertisement?" The ad used a play on the word "schmear" to refer to the marketing that spoke poorly of HFCS. At the bottom of the ad, smaller-sized text continued, "Lately, high fructose corn syrup has had its name dragged through the media." This advertisement extended the argument that information presented in marketing and media might not only be invalid, but also malicious. When the CRA assigned the media as the source of HFCS criticism, the CRA could easily refute the credibility of their opposition.

The CRA (2010x) also represented its opposition as incompetent members of the public. The television advertisements best demonstrate this rhetorical strategy. For example, in the television advertisement Party, two mothers, approximately thirty years of age, had a very awkward conversation at a children's birthday party. One mother approached the hostess, also assumed to be a mom, who was pouring red punch into a
cup. The mother said, "Wow! You don't care what the kids eat huh?" Clearly confused, and probably offended, the hostess asked the mother why she would say such a thing. Confidently, the mother replied that the punch had HFCS in it and asked if the hostess knew what people were saying about HFCS. However, instead of answering the hostess asked about what others were saying. When the mother could not respond, the hostess began to pour another cup and said, "It's made from corn. It's natural and, like sugar, it's fine in moderation." The mother awkwardly looked around, picked up a cup of juice, and then changed the topic. A similar storyline was used in the television advertisement entitled *Brothers* (CRA, 2010w). In it a male teenager approached a younger male who was eating a bowl of cereal. The older brother said, "Once again you are demonstrating your inferior intellect...that cereal has high fructose corn syrup in it...even a doofus like you must have heard what they say about it." The younger brother asked for an explanation of what is wrong with HFCS. The big brother was at a loss for words because he did not know what people actually said about HFCS. The younger brother replied, "It's made from corn. That it's nutritionally the same as sugar, and its fine in moderation." In both of these advertisements the person who questions the safety of HFCS was presented as ignorant. The guest and the older brother who questioned the safety of HFCS did not have any real claims about the risks associated with HFCS, other than that people were talking about it. Further, when the hostess or younger brother asked what people were saying, they could not respond. They were incapable of engaging in an argument because they could not advance, support, criticize, or modifying claims about HFCS (Rieke, Sillars, & Peterson, 2009). They were inept representatives of those opposing HFCS. On the other hand, the hostess and younger brother were able
to advance and support an argument that HFCS was safe, so they easily defeated the opposition.

*Constructing an absent opposition*. While some parts of the CRA actually identified a source of opposition, much of the discourse sought to deflate the credibility of claims against HFCS by omitting the source of the information. Two of the most obvious examples of this rhetorical strategy occur within the "Myths vs. Fact" and "Science and Research" sections of the CRA. The "Myth vs. Facts" section contained a page called "HFCS myths" which listed ten "myths" about HFCS ranging from claims about its origins, to its similarity to sugar, to how it is metabolized and connected to health conditions. The word "myth" preceded a single sentence claim that was separated from the other text and listed in green font. References were not provided for any of the myths. A paragraph labeled "reality" followed each myth. These sections refuted the myth, used bold font to emphasize the CRA's main points, and often cited scientific resources. For example, the CRA (2010n) said,

Myth: High fructose corn syrup is to blame for obesity and causes diabetes.

**Reality**: There is no scientific evidence to suggest that high fructose corn syrup is uniquely responsible for people becoming obese. Obesity results from an imbalance of calories consumed and calories burned. U.S. Department of Agriculture data shows that per capita consumption of high fructose corn syrup is actually on the decline, yet obesity and diabetes rates continue to rise. In fact, obesity rates are rising around the world, including in Mexico, Australia and Europe, even though the use of high fructose corn syrup outside of the United
States is limited. Around the world, high fructose corn syrup accounts for about 8% of caloric sweeteners consumed. (para. 3, original emphasis)

By omitting a reference to the source of the criticism and labeling the claim a "myth," the CRA constructed a generic, fictional critic, rather than an individual speaker, and, as such, one that lacked credibility. This generic source is further supported by the CRA's subsequent claim that there is no scientific evidence claiming that HFCS is to blame for obesity or causes diabetes. However, many of these "myths" about the risks of HFCS can be linked back to research published in peer-reviewed articles not referenced explicitly by the CRA. For example, Bray, Nielsen, and Popkin (2004) published the original study analyzing time, trend, and pricing data and concluded that HFCS uniquely contributed to the obesity epidemic. Ambiguity about the source of the information weakened the credibility of the opposition, so that the "myth" claim could be easily defeated by the CRA's representation of the empirical evidence supporting the safety of HFCS. This rhetorical decision to misrepresent critical resources can be understood as a form of strategic ambiguity, as the vague references helped develop the straw man fallacy.

In sum, the CRA's reconstruction of the controversy over HFCS's safety positioned those who support HFCS, in general, as credible sources and made critics who argue that HFCS poses risks appear inept or fictional. However, this portrayal did not accurately depict the on-going rhetorical situation. As demonstrated in the literature review, opposition to HFCS is also grounded in, among other things, empirical research published in peer-review journals. The CRA's selection and misrepresentation or omission of the voices that are involved in the debate over HFCS's safety was characteristic of a straw man fallacy. By misrepresenting the controversy, the CRA
developed a weaker version of their opposition, which they were able to defeat by representing and citing scientific sources that support HFCS.

**Selecting a straw man's argument.** It is hasty say that there are those who oppose and those who support HFCS as safe food additive. The debate over the role of HFCS in the American diet spans a variety of topics and a range of positions. However, I argue in this section that the CRA distorted the actual rhetorical situation with ambiguous communication about the nuances of the HFCS controversy. In this section, I highlight the CRA’s main arguments and then situate these claims within the larger discussion of HFCS risks to demonstrate how the CRA committed a straw man fallacy by oversimplifying or omitting significant portions of their opposition's criticism. I address how the CRA's presentation of the relationships between sweeteners before attending to their discussion of the nature of food practices that lead to obesity.

**Strategic Relationships.** To support their claim that HFCS is safe, the CRA frequently talked about the similarities and differences between HFCS and other sweeteners. Consistently, HFCS was likened to sugar and honey. For example, the CRA (2010u) wrote, "high fructose corn syrup is safe and nutritionally the same as table sugar and honey" (para. 3). They "are equally sweet, have the same number of calories, and are handled similarly by the body" (CRA, 2010ff, para. 1). The CRA (2010c) reasoned that HFCS "may have a complicated-sounding name, but it’s actually a simple sweetener, made from corn, that is nutritionally the same as sugar" (para. 3). While these passages made claims without much evidence or reasoning, other passages explained how the similar chemical structures of HFCS, honey, and sugar leads to a similar metabolism of the foods with the ingredients. For example, the CRA (2010ee) said that, "high fructose
corn syrup contains approximately equal ratios of fructose and glucose. Table sugar also contains equal ratios of fructose and glucose. High fructose corn syrup and sugar are equally sweet and both contain four calories per gram" (para. 3). Together, these passages helped to build a basic point of comparison between sugar, honey, and HFCS to refute beliefs that HFCS was somehow different or worse for people. By constantly reinforcing the similarities between these ingredients, the CRA was also able to draw on the familiarity of sugar and honey. Possibly, the most important connection the CRA (2010u) appealed to the fact that nutritionally sugar, honey, and HFCS contribute to weight gain equally because each yields four calories per gram. This similarity allowed the CRA to say that "HFCS is not a unique contributor to obesity" (para. 2). Indeed, from the standpoint of functional nutrition, ingredients that have the same amount of calories should contribute equally to weight gain.

While the CRA frequently referenced the similarities between HFCS, honey, and sugar, it also discursively distanced HFCS from other sweeteners. The most explicit distinction the CRA made between sweeteners was between HFCS and fructose. For example, the CRA (2010y) wrote that "many confuse pure 'fructose' with 'high fructose corn syrup'" (para. 1). Fructose is one of the main simple carbohydrates. HFCS, on the other hand, is comprised of two simple carbohydrates, fructose and glucose. The CRA (2010ff) argued that "the absence of glucose makes pure fructose fundamentally different from high fructose corn syrup. This is because glucose has been shown to have a tempering effect on specific metabolic effects of fructose" (para. 3). This passage explained that HFCS is less risky than fructose because it has glucose which mediates the
metabolic influences of fructose. By distinguishing between HFCS and fructose, the CRA distanced HFCS from these health risks.

This rhetorical strategy also discriminated between research findings based on HFCS and on fructose. The CRA (2010ff) explained that studies using fructose, much of which has found that excessive fructose leads to negative health outcomes, have been "inappropriately applied to high fructose corn syrup and have caused significant consumer confusion" (para. 1). The CRA's omissions about fructose are also telling. For example, the CRA never discussed the sweetness of fructose as compared to other sweeteners. Even documents likely to contain this information failed to make this comparison, including a chart comparing the sweetness and caloric values of five different nutritive and nonnutritive sweeteners (CRA, 2010t). This is interesting because fructose is twice as sweet as table sugar and sweeter than HFCS (Drummond & Brefere, 2006). Technically, a person could use less fructose and achieve the same level of sweetness with fewer calories. The negative claims about fructose coupled with the omission of this information about fructose's sweetness weakened an argument in favor fructose's nutritional and gastronomic contributions. HFCS easily emerged as the more favorable sweetener.

While the relationships between HFCS, sugar, and fructose were constantly referenced by the CRA, much less attention was given to the relationship between HFCS and alternative sweeteners, such as artificial sugars and sugar alcohols. For example, there were only a few passages within the discourse that mentioned alternative sweeteners. The lengthiest passage was a response to a question about the effects of various sweeteners on cavities. The CRA (2010l) wrote,
Are some sweeteners better for your teeth than others?

Yes. Polyols such as xylitol, sorbitol and erythritol do not contribute to dental caries (cavities). Likewise, low-calorie sweeteners such as aspartame and saccharin do not contribute to tooth decay because they are used in such minute quantities. All caloric (nutritive) sweeteners, including sugar, honey and high fructose corn syrup, contain carbohydrates that “feed” bacteria in the mouth and can contribute to tooth decay. (para. 4)

HFCS was aligned with sugar and honey in terms of their contributions to cavity formation, whereas artificial sweeteners and sugar alcohols were positively framed in terms of their effects on tooth decay. From the standpoint of dental health, HFCS did not emerge as the best sweeteners. However, presenting this information, though not favorable of HFCS, served to benefit the CRA’s argument. First, linking HFCS to tooth decay reinforced the CRA’s argument that HFCS is the same as sugar. Second, by focusing on tooth decay as a primary health concern linked to HFCS, the CRA avoided discussions of a more pressing topic that they also could not win so easily. Specifically, while this passage mentioned that sweeteners have varying amounts of calories, for the most part the passage was ambiguous about how the sweeteners contribute to body weight differently. In fact, calories are framed as fuel for cavity causing bacteria, not the person eating the food. "Comparisons of Sweeteners." A link from the "Quick Facts & Stats" page (CRA, 2010t), made more concrete references to body weight and the consumption of artificial sweeteners and sugar alcohols. The link displayed a chart comparing HFCS, sugar, honey, xylitol, and saccharin on a number of criteria, including caloric value and benefits. The chart said that xylitol is a "calorie reducer" and that its
benefits lie in its ability to reduce plaque formation and repair of damaged tooth enamel. Once again the main focus was on dental health not weight management, though xylitol has half of the calories as HFCS. Of saccharin, the CRA wrote, that it is a calorie reducer capable of providing sweetness without calories. This statement was one of the few, if not the only, explicit reference to one's ability to obtain sweetness without calories. Limiting this discussion restricted the opportunity for readers to consider replacing nutritive sweeteners (HFCS and sugar from beets and sugar cane) with nonnutritive sweeteners (artificial sugars and sugar alcohols) that reduce one's caloric intake and help manage one's weight.

This discursive negotiation of the benefits and risks associated with sweeteners can be likened to the development of a straw man fallacy by what Talisse and Aikin (2006) termed "opportunistic misrepresentation" (p. 346). There is a distinct difference between the sweeteners aligned with or distinguished from HFCS. Sugar, honey, and fructose are nutritive sweeteners, that is, they contain calories and can contribute to weight gain. Artificial sugars and sugar alcohols, on the other hand, are nonnutritive sweeteners that contain few to no calories and contribute little to weight changes. By comparing HFCS risks with sugar and honey risks, the CRA was able to argue that "high fructose syrup does not appear to contribute to obesity more than other caloric sweeteners" (American Medical Association, as quoted in CRA, 2010u, para. 1) and that "there is no nutritional benefit gained by replacing High Fructose Corn Syrup with another caloric sweetener" (CRA, 2010ff). Indeed, sugar, honey and HFCS all have the same number of calories and could contribute to weight gain similarly (Drummond & Brefere, 2010). On the other hand, artificial sweeteners and sugar alcohols are
nonnutritive sweeteners, which contribute few to no calories during digestion and, as such, do not contribute to obesity. The limited discussion of nonnutritive sweeteners in relation to obesity failed to establish that these alternatives have a significant role in weight maintenance. Further, by establishing dental health as the only criterion for comparing the risks of HFCS and artificial sweeteners, the CRA avoided having to discuss other risks, such as diabetes, which artificial sweeteners can help manage, but HFCS cannot. Finally, by distancing HFCS from fructose, the CRA established that fructose was not a safe option for consumers. Essentially, by aligning HFCS, sugar, and honey, the CRA was able to promote HFCS as a safe, common, and natural food and appeal to the consumers who have a limited understanding of nutritional sciences. This healthy and familiar ingredient then easily defeated the ambiguity and misrepresentation that characterized the CRA's discussion of fructose and nonnutritive sweeteners.

Environmental denial. While the nutritional and health sciences have traditionally dominated the discussions of obesity and HFCS risks, recently some scholars and health advocates have positioned the benefits, risks, and health policies associated with sweeteners within an ecological framework (Bray, Nielsen, & Popkin, 2004; Pollan, 2006, 2008; Drewnowski & Bellisle, 2007). Ecological critiques were addressed and refuted by the CRA to varying degrees. In this section, I demonstrate how the CRA's reliance on science led to ambiguity about ecological issues related to HFCS and excess weight. I argue that by selecting to only refute claims regarding and using functional nutrition, the CRA committed a selection straw man fallacy. The absence of ecological issues weakened the overall position of HFCS's opponents. Defining HFCS only in terms of functional nutrition allowed the CRA to easily defeat its opposition and
strengthen the image of HFCS. I develop this argument by comparing how the CRA and critics talked about issues related to added sugars and nutrient density in general before addressing differences in the proposed solutions to obesity.

One ecological criticism of HFCS is concerned with changes to the overall quality of the foods readily available to consumers (Pollan, 2006, 2008; Popkin & Nielsen, 2003). It is argued that rates of obesity are correlated with increasing amounts of nutrient deficient foods in our system. That is, consumers have increased access to foods that have plenty of calories due to added sugars and fats, but lack other important nutrients, vitamins, and minerals. As such, people have easy access to foods that can lead to weight gain and malnourishment.

The CRA acknowledged that changes in the American diet may have led to obesity. It (2010b) said “it is especially important to understand that Americans are consuming more calories from all types of foods today than what was consumed 30 years ago” (para.3). Further, the CRA (2010h) said that, “excess body fat [obesity] arises from the energy imbalance caused by taking in too much energy and expending too little energy...Obesity is a complex problem and its cause cannot be simply attributed to any one component of the food supply such as sweeteners” (American Dietary Association, 2004, as quoted in CRA 2010h, para. 6). These passages situated all foods as potentially contributing to obesity, which served two purposes. First, by focusing on all foods, the CRA was able to ignore issues of nutrient density. It is technically true that all foods that contain calories and have the potential to cause weight gain. But, to get here, the CRA had to make the implicit argument that the 100 calories from a pear or a soft drink are the same, ignoring that the pear will have more vitamins and fiber.
While the CRA did not explicitly address nutrient deficiencies, issues of nutrient density were very obvious in the CRA’s discussion of the types of foods and beverages that contain HFCS. For example, to refute the claim that the amount of HFCS in foods is excessive, the CRA (2010v) explained that,

There has been significant confusion about just how much high fructose corn syrup is contained in everyday foods. It is true that this highly versatile ingredient performs numerous functions besides sweetening that make it useful in many food preparations. But it does so in most cases using very small amounts. How small? Well, taking bran cereal as an example, Americans would need to eat 87 bowls in a single day to reach the recommended daily allowance of added sugars from high fructose corn syrup. For bread, they would need to eat 39 slices. For spaghetti sauce - 20 servings. For salad dressing - 50 servings...These out-sized quantities show that many foods contain only small amounts of high fructose corn syrup. (para. 1-2, original emphasis)

This passage described the number of bread, spaghetti sauce, salad dressing, or bran cereal servings an average person would need to consume to reach the Institute of Medicine's added sugars threshold of 500 kcal/day for 2000 kcal/day diet (Drummond & Brefere, 2007). The ridiculously large amounts of each product one would have to eat made it appear as though most common foods have small amounts of HFCS and that it is difficult to reach one's threshold for added sugars. The passage did not address the variety of foods and combinations of foods a person might eat throughout the day. It is also interesting to note that the foods that the CRA used in their rebuttal are all considered very healthy, nutrient dense foods. While it is true that these foods can
contain HFCS, "junk foods" are the more commonly criticized food products and these junk foods contain approximately 58.9% of the calories from added sugars consumed by people aged two years and older (Gutherie & Morton, 2000). Considering that the average 12-ounce soft drink contains 10-12 teaspoons of added sugars (Insel, Ross, McMahon, & Bernstein, 2011) and the average American consumes approximately 52 gallons of soda per year (Shearer, 2008), would not it be more informative for consumers to demonstrate the number of soda servings someone would need to consume to meet their threshold? Considering that it would only take approximately 2.5 cans of a soft drink for the average person to meet their threshold (Drummond & Brefere, 2007), such a demonstration of HFCS's presence in food would have likely not been as convincing.

The omission of foods in a typical diet and the general ambiguity that surrounds the relationship between HFCS and junk food served to weaken the accusation that HFCS is found in excess in foods and allowed the CRA to maintain a healthy image for HFCS.

In addition to promoting HFCS as an ingredient in healthy foods, the CRA's ambiguity about HFCS and junk foods served to avoid a discussion of larger and potentially more damaging debates surrounding added sugars in general. In addition to being concerned with the quantity of HFCS in foods, some critics interested in the ecological nature of obesity are also concerned with increased access to foods with added sugars. For example, Bray, Nielsen, and Popkin (2004) concluded that the HFCS may play a role in the obesity epidemic because items that contain HFCS, such as cookies, candies, and soft drinks, are often cheaper than sugar-based cookies and, therefore, over consumed. Further, because these foods are cheaper, scholars argue that there are socioeconomic disparities related to the public's ability to secure nutritious foods.
(Brownell & Horgen, 2004; Sobel & Maurer, 1995). Issues related to the cost and subsequently disparities in access are more difficult to talk about and to refute than issue of causation within the functional sciences. By oversimplifying and for the most part ignoring the critics' concerns with the quality of foods with HFCS and accessibility issues, the CRA developed a weak version of their opposition's arguments. However, it developed its claims as though the CRA were successfully refuting HFCS's strongest criticisms.

By situating all foods as potential contributors to obesity, the CRA removed the blame from any one ingredient, especially sweeteners. Instead of suggesting that people limit their consumption of sweeteners, the CRA was able to develop an argument for a more general solution to obesity. The CRA (2010l) said that "excessive consumption of sugar could lead to adverse health effects just as excessive or unbalanced consumption of many otherwise safe food ingredients could potentially be problematic for some individuals" (para. 1). This passage reinforced the notion that all foods are potentially problematic, which took the focus off the contributions of sweeteners to obesity. The CRA (2010dd) explained that sweeteners "can be part of a balanced diet" (1A1, para. 1) and that "moderation is key" (para. 4). The CRA's appeals to moderation and balanced diets are not unique to this CRA. For instance, Nestle (2003) wrote that food companies argue regularly that "all foods can be part of a healthful diet" and the keys to healthful diets are "balance, variety, and moderation" (p. 360). Simon (2006) was critical of the educational quality of ambiguous messages in food marketing communication. She argued that "moderation" is "a meaningless word that leaves people in the dark" (p. 328) and that "balanced diets" represent "the oversimplified and meaningless way that food
companies like to describe how to eat. The purpose is to keep people confused about nutrition while maintaining the status quo" (p. 323). From this standpoint, the CRA’s "moderation" discourse reinforced the notion that food plays an important part in weight management, but displaced any blame that could be put on HFCS or the CRA.

In addition to limiting risk accusations against any one food or food ingredient, the CRA’s "moderation" discourse situated who is to blame for obesity. Moderation means that individuals need to be responsible for the types and amounts of foods they eat. The logical progression is that people who eat in moderation are thin, and those who eat in excess are at risk of becoming overweight. Body weight, then, becomes an issue of personal responsibility. By appealing to moderation, the CRA reflected and contributes to dominant risk ideologies. While this argument is consistent with understandings of functional nutrition, it is limited because it does not address the environmental and structural factors that influence what we eat, such as the prevalence of added sugars in common foods, the accessibility of nutrient deficient foods, or the influences of food marketing. The selection of a moderation appeal to address the obesity problem, as opposed to a solution related to the food environment, can be seen as a selection straw man fallacy. When faced with accusations that HFCS lead to obesity, the CRA responded to only arguments based on the biological processes involved in metabolizing HFCS. Within this framework, it made sense that any person could avoid the risks of obesity by controlling their consumption. Further, the CRA appeared responsible because they were educating consumers about how to eat healthier. It did not mention that critics were also concerned about the greater food environment or that some consumers were literally incapable of moderating their consumption of nutrient deficient
foods. Under this framework, the responsibility would have been placed on the food industry to limit the amount of added sugar they put in products. By selectively refuting criticisms related to individual responsibility and avoiding those concerning the food environment, the CRA rebuttals situated individual responsibility as the main point of the discussion about risks related to eating. In doing so, the CRA avoided a discussion of corporate responsibility. This rhetorical negotiation of blame is similar to Beck's (1992) process of "individualization," during which corporations mask systematic hazards to downplay institutional accountability and emphasize individual responsibility.

**Conclusion**

I have argued that, although the CRA primarily drew on notions of scientific expertise and consensus to establish authority in the debate over HFCS, their use of ambiguity and fallacious reasoning reconstructed the HFCS debate in a manner that differed markedly from the actual rhetorical situation. A straw man fallacy emerged as the CRA weakened HFCS opposition by constructing inept or fallacious critics and strategically selecting criticisms that were easily defeated or less damaging to HFCS's image. Together these rhetorical strategies positioned HFCS as a safe food additive and, further, the CRA to appear responsible. To evaluate the role of straw man reasoning in the CRA, it is valuable to consider the soundness and sustainability of such rhetorical choices.

**Fallacious reasoning.** Traditionally, fallacious reasoning and ambiguity have been considered errors in reasoning and incompetent forms of communication because they fail to reduce uncertainty and hinder optimal decision making (Eisenberg, 1984; Simonin, 1999). van Eemeren and Grootendorst (1992), however, argued that
categorizing all fallacies as errors is limited because while this standpoint accounts for the dialectical nature of argumentation, it does not take into account the rhetorical dimension. When rhetorical intentions are taken into account, fallacies can be better understood as competent communication, but also "a hindrance or impediment to the resolution of a disagreement" (van Eemeren & Houtlosser, 1999, p. 130). That is, a rhetor may purposefully and competently use a fallacy in an argument, but in doing so will limit discursive opportunities for dialogue.

This study contributes to this theoretical argument by demonstrating how both ambiguity and straw man fallacies can be used competently by rhetors seeking to take advantage of opportunities to influence the result of a controversy in their own favor. The CRA's opportunistic representation of critics and selection of criticisms can be understood as a form of strategic maneuvering. The rhetorical strategies employed by the CRA reconstructed the debate over HFCS in such a way that HFCS emerged as an uncontested, risk-free ingredient and the refiners of corn were not held responsible for fighting obesity.

While the CRA used ambiguity and straw man fallacies competently and effectively to shield HFCS from criticisms, one must question whether this strategic maneuvering is sound. The soundness of a rhetor's reasoning can be evaluated from a logical perspective, which suggests that a sound argument is "one in which a clearly stated claim is supported by acceptable, relevant and sufficient evidence" (Wenzel, 1990, p. 2). Two criteria must be met for reasoning to be considered sound. First, the argument must be valid. That is, the conclusion should follow logically from the premises. Second, all respective premises contributing to the conclusion must be true. According to
Gross (2004), the truth of a premise exists in its ability to be empirically verifiable. From a social construction standpoint, the material reality of the relationship between HFCS and health is not fully knowable (Stallings, 1990). However, the social reality that surrounds HFCS is knowable. It is important to emphasize here that this analysis does not argue whether claims for or against HFCS are scientifically credible, were due to experimental artifact, or were due to methodological flaws. Rather, I explored how the CRA used and presented evidence to develop an argument about the nature of risk and HFCS.

I have demonstrated that the CRA argued that because (1) scientific consensus is an indicator of the truthfulness of a claim about reality, and because (2) there is scientific consensus that HFCS is healthy, it can be concluded that (3) HFCS is healthy because there is scientific consensus on its nutritional value. Within the boundaries of the CRA's reconstructed rhetorical situation, the CRA's reasoning appeared sound. Their argument is valid, as it follows logically from the premises. And, because no rational critic or criticism was presented within the CRA's discourses, the premises appeared truthful. However, when evaluated in the context of the actual rhetorical situation, the CRA's logic is unsound because one of these supporting premises is false. The argument remains valid, but the second premise is a straw man and false because there is not scientific consensus as to the healthiness or riskiness of HFCS. There are a variety of critics, within and outside of the scientific field, that have expressed a diverse set of criticisms about HFCS.

Positioning the CRA's reasoning as unsound, calls the sustainability of the CRA's rhetorical strategies into question. The ability of the CRA to maintain the argument that
HFCS is healthy based on the premise that no rational criticism is available for any length of time is questionable. On one hand, it seems as though the CRA developed a defeasible argument because it could be easily "defeated if new evidence comes in to the case that provides a rebuttal to the original argument" (Walton, 2005, p. 78). Indeed, Talisse and Aikin (2006) argued that the sustainability of representation straw man arguments is dependent audience's ability to recognize the nuances of a particular rhetor's opposition. By using fallacious arguments, Hofmann (2009) argued that rhetors chance losing their trustworthiness, which would give opponents easy points. If audiences were to base their understandings of HFCS on only the CRA, then it is likely the CRA will sustain a favorable image for HFCS. However, if audiences go beyond the CRA to learn about HFCS and find that there is scientific opposition to HFCS, then the CRA's efforts are not likely to be sustainable.

On the other hand, the CRA's argument and overall rhetorical strategy seems sustainable considering the complex nature of the controversy. Talisse and Aikin (2006) said that the success of a straw man argument relies on an "audience's inexperience or ignorance" (p. 347-348). Indeed, "consumers wanting to find their way within these discourses on food and health and the connections between the two therefore stand before an arduous task" (Őstberg, 2003, p. 4). Not only is the science on HFCS abundant, it is also changing. Additionally, to understand the nuances of the CRA's argument, and the distinctions between their claims and that of their opponents, is dependent on public understandings of science. Science literacy “commonly implies an appreciation of the nature, aims, and general limitations of science, coupled with some understanding of the more important scientific ideas” (Jenkins, 1994, p. 5345). Shamos (1995) argued that,
because obtaining a high level of science literacy is a difficult and demanding, it is unlikely that all audience members will be able to think critically about science-based arguments. Audiences who are unable or unwilling to sift through the wrangle of the market to discern the credibility and nuances of claims about HFCS are unlikely to recognize discrepancies between the CRA's constructed situation and the actual rhetorical situation. Further, the scientific nature of the controversy coupled with the CRA's construction of journalists, marketing, and the public as inept sources of information served to cast doubt on drawing any conclusions in opposition to HFCS, even if audiences explored the literature published on HFCS outside of the CRA.

The potential success of straw man fallacies and ambiguity is based on creating doubt. Low science literacy suggests that these rhetorical strategies draw on and contribute to the deficit models which Gross (1994) described as dominating understandings of the public's understanding of science. Deficit models consider the general public to be ignorant and easily swayed by subjective biases. To make up for their deficits, the public is thought to rely on objective and sufficiently knowledgeable experts. In the current context, the public was situated as misled and in need of the expert information presented by the CRA. The CRA emphasized scientific expertise and appeared to perform the role of health educator; however, its success as an organization necessitated an ambiguous presentation of the HFCS controversy and an uninformed audience.

(Di)sectioning commercial health promotion. As food media are at the intersection of health and commercial promotion, it is important to consider the CRA's negotiation of the tensions between advancing the health and vitality of consumers and the companies
represented by the CRA. The CRA (2010r) said that its objective was to "Chang[e] the conversation about high fructose corn syrup" (para. 1). However, their discursive strategies do not align with the guidelines of clarity, honesty, efficiency, and relevance which van Eemeren, Grootendorst, and Henkemas (1996) said would mark open dialogue aimed at resolving differences. These guidelines, though, "apply only where the discourse is actually aimed at resolving a dispute" (van Eemeren and Grootendorst, 1992, p. 105), and the CRA may not want this dispute to be resolved.

Why would the CRA be aimed at anything other than resolving a dispute? The answer may lie in a consideration of who benefits more or less from the rhetorical strategies implemented by the CRA. While the CRA's discourses do have implications on consumer health and eating behaviors, its specific impact on consumer health is to encourage the consumption of HFCS. The CRA's influence on public understandings of how to identify, make sense of, and manage food risks is pertinent to this essay. Ultimately, the CRA contributed to dominant ideologies that privilege scientific authority and notions of personal responsibility. This alliance served to keep audiences reliant on expert sources of information, specifically the information that is often summarized on the CRA’s website. By using ambiguity and fallacies to present HFCS criticisms, the CRA painted a less than truthful picture of the current wrangle of the market. The more favorable impressions of HFCS that could stem from these misrepresentation and strategic selections are likely to support the presence of HFCS in foods, which benefits the agricultural and refining industry. More favorable impressions of ingredients, regardless of their validity, can also influence policies surrounding certain foods.
To manage perceived health risks associated with sweeteners, the CRA suggested that HFCS is safe and that moderation is key. Nestle (2003) explained that it is in the interest of the food industry to maintain this assumption so that the foods and related industries, themselves, cannot be blamed for poor nutrition. Gross (1994) explained, "in so far a product is of science or industry...it is safe; in so far a food is dangerous, the fault is the consumer" (p. 12). The CRA’s appeal to moderation served the wellbeing of the industry. If HFCS is considered safe and an issue of personal responsibility, then it is unlikely that the government will interfere with the industry's status quo. And, if HFCS is considered safe and tastes good, the public is more likely to eat these foods and feel safe doing so. Further, by centering the obesity discussion on personal responsibility, the CRA removed its member organizations and other food industries from public scrutiny.

**Concluding thoughts.** Nestle (2003) argued that food companies "routinely put the needs of stock holders over considerations of public health" (p. viii). While this study does not comment on the scientific veracity of the claims made, it does call into question the actions of trade associations as health education. Indeed, the Sweet Surprise CRA served as an effective illustration of how trade associations can use ambiguity and fallacious reasoning to opportunistically reconstruct scientific controversy. However, it equally demonstrated the conflicts of interests that accompany trade association's hybridized role as promoters of both public health and corporate interests. This essay supports Simon’s (2006) warning that "we cannot expect food companies to be the guardians of public health" (p. 2).
Chapter Four: Naturally Sweet: An Analysis of the strategic positioning of sweeteners by the Sugar Association

Rhetorical Context

At the end of the 20th century, popular discourses started to ascribe healthiness to natural products and riskiness to processed and modified foods (Williams, Gabe, & Calan, 2000). The labeling of “natural foods”, however, can be problematic. Hansen (2006) said that the word “natural” can "accommodate a multitude of contradictory meanings," which makes it difficult to develop a shared definition" (p. 813). In his research, he found that “nature” and “the natural” were used by the media to describe traditions, items, or events that pre-dated the audience, changed slowly, or had limited human intervention. For example, plants have been deliberately cross-pollinated for years to produce new crop varieties or lines with desirable properties; however, these actions were considered natural. On the other hand, genetic modification and other forms of biological manipulation were considered unnatural because they are relatively newer.

Due to the difficulties and politics associated with determining how much human intervention is too much, even the FDA has not established a definition for the terms “natural” or “nature”. The FDA (2010) stated that,

From a food science perspective, it is difficult to define a food product that is 'natural' because the food has probably been processed and is no longer the product of the earth. That said, FDA has not developed a definition for use of the term natural or its derivatives. However, the agency has not objected to the use of the term if the food does not contain added color, artificial flavors, or synthetic substances. (para. 1)
Though they do not provide a concise definition of what a product must be or must contain to be labeled as natural, the FDA situated natural foods in opposition to items that have been linked to human intervention. They do not specifically define which human interventions are unnatural. Harvesting, manufacturing, and consumption processes may be “natural.” The FDA does state that natural foods do not contain added colors, artificial flavors, or synthetic substances. In sum, the FDA’s tautological definition of naturalness lacks clarity and is not helpful in accurately and consistently categorizing foods as natural or unnatural. As such, the definitions provide the rhetorical space for food and consumer groups to petition the FDA to appraise or recant permission to label foods as natural products and the rhetorical space for the FDA to negotiate whether it will accept or reject these petitions.

The ambiguity of the FDA’s definitions has been the center of a dispute between trade associations representing sweeteners. For example, in 2006, the Sugar Association (SA), representing sugars from canes and beets, petitioned the FDA to set clearer guidelines for “natural” claims. The Corn Refiners Association (CRA), representing high fructose corn syrup refiners, (2006) argued that even if all of a food's ingredients exist in nature, the food should not automatically qualify it as natural. Instead, natural should be used only if it meets two criteria: "1) a food that does not contain anything artificial or synthetic and 2) a food or food ingredient is not more than minimally processed" (p. 5). These guidelines, they argued, would make the FDA's definitions of natural comparable to the United States Department of Agriculture. Shortly, after the SA's petition, the CRA provided a petition to the FDA that rebutted the SA's position (CRA, 2006). They argued that the FDA's current definition was rigid enough to help consumers and that "the SA's
Petition is a thinly veiled attempt to obtain a marketing advantage for sucrose over HFCS" (p. 4). Currently, issues of processing are not considered when the FDA determines if a food can be labeled as natural.

The ambiguity of the FDA's definition has created legal contests. For example, a regular consumer of Snapple® beverages filed a lawsuit against the company alleging that the organization misled her and consumers by advertising that its juices were "all natural" when HFCS was the primary sweetener in the products (Holk v. Snapple, 2008). The U.S. District Court of New Jersey dismissed the lawsuit, stating that food labeling regulation fell under the jurisdiction of the FDA. One month after the court ruling, the FDA issued a statement that officially identified HFCS as a natural ingredient as long as it did not include synthetic fixing agents (FDA, 2008).

**The Sugar Association**

The polysemic richness of "the natural," makes it a "powerful and flexible construct in virtually any public debate or controversy" (Hensen, 2006, p. 813). As such, rhetors struggle to identify "desirable' or ‘appropriate’ natures" when framing their products (MacNaghten & Urry, 1998, p. 3). The SA is one voice in the contest to conceptualize nature and the natural.

Originally founded in 1943 as the Sugar Research Association, the Sugar Association assumed its current name in 1947 (SA, 2010c). The original responsibilities of the Association included conducting research on sugar and educating the public about its findings. In 1968, the Association divided and the World Sugar Research Organisation, Ltd., was developed to conduct and apply scientific research. The contemporary SA was given responsibility for educating "health professionals, media,
government officials and the public about sugar’s goodness” (para. 1). Its member companies include major processors like C&H Sugar company, the Imperial Sugar Company, the American Sugar Refining, Inc. (producers of Domino Sugar), the American Sugar Cane League, and the American Crystal Sugar company.

To illustrate how the SA contributed to the construction of sweetener risks, I offer an analysis of the discursive activity on their website, sugar.org, because it was easily accessible by audiences who wanted information about sugar. The homepage, sugar.org, had thirteen links to secondary pages that categorically provided access to tertiary materials concerning Sugar Basics, Family Health, Sugar and Diet, Other Sweeteners, Nutritional Advocacy, Sugar-Based Products, Newsroom materials, web-films about harvest time and information about the organization and membership. I accessed and printed the campaign's discourses on September 9, 2010.

**Study Rationale**

Because notions of the natural serve to shape public understandings of and the management of sweetener risk, it is valuable to explore the SA’s discursive contributions to the definition of the term natural and the implications of this defining process on various stakeholders. In this chapter, I explore the rhetorical contributions of the SA's website, sugar.org, to public understandings of sweetener risks.

**Analysis**

A central theme in the SA's discursive strategies was the negotiation of the relationship between sweeteners and "the natural." For example, the organization's slogan was "Sweet by Nature" (SA, 2010e), and the phrase "Nature's very own sweetener..." was repeated throughout the website (2010q, para. 2). These phrases and passages served to
link sugar explicitly to nature and the natural. In this section, I describe the SA’s framing of "the natural" as existing in ecological harmony, gastronomic tradition, and natural processes. In the subsequent section, I argue that the Association's rendering of "the natural" served to distinguish sugar from other sweeteners in order to promote sugar consumption.

**Natural as ecological harmony.** Greider and Garovich (1994) described landscapes as "symbolic environments created by human acts of conferring meaning to nature and the environment, of giving the environment definition and form from a particular angle of vision and through a special filter of values and beliefs" (p. 1). The imagery of the SA's homepage, sugar.org, contributed to the construction of the natural. Two main images comprised sugar.org. The background depicted a luscious, green field of sugar cane plants. This field stretched vertically up three-quarters of the screen to meet a blue sky with fluffy cumulus clouds. This landscape was only partially visible, as it served as a border around foregrounded images. This faded image depicted two older males holding the hands of a young boy while walking in a green field away from the viewer. Both of these images positioned the natural as existing in ecological harmony between the humans and the landscapes of sugar cane and beet farms of past and future.

These representations of landscapes romanticized association between sugar and nature. The image of bountiful green fields and ideal blue skies with white clouds, stands in contrast to the urbanized and industrial landscapes that mark modern risk societies, which are commonly associated with risk due to human intervention (Enticott, 2003). Compared to urban or industrial landscapes, the farm landscapes depicted in the images exist much closer to the earth's material ecology. However, it is important to remember,
as Greider and Garovich (1994) suggest, the partiality of the material reality represented in the SA's images. These renderings of these farm landscapes represented a particular angle or standpoint. These images did not, for instance, display the unnatural components of an open space for farming, perfect rows of plants, or the absence of other types of vegetation such as weeds. Further, these representations omitted images of the machines or pesticides that might have been used to protect, water, and harvest the sugar cane and beets. Though the fields in the images appeared untouched by human intervention, the landscapes of sugar cane and beets fields in reality are mostly products of human intervention, not that of nature. The website's images served as strategic representations of reality, in that they positioned sugar as a product of rural, untouched landscapes, and, therefore, a less risky food ingredient.

While at first the image of the two men walking with a young boy seems to contradict this claim, as they represent the presence of humans in this natural, "untouched" setting, the landscape image's representation of humans also served to reinforce notions of ecological harmony. The image of the two adult males and the young boy represented tradition and the inter-generational nature of a family owned sugar farm. This image drew on what Vos (2000) called the cultural idealization of small, family run farms as safe and responsible locations for food production as opposed to large industrialized farms. The incorporation of the humans demonstrates the harmony that exists between sugar cane farmers and the types of agricultural landscapes that they are represented as producing and maintaining.

**Natural gastronomy.** In addition to framing the natural as ecological harmony, the SA identified gastronomic tradition as a characteristic of the natural. For example,
the Association (2010r) said, "For thousands of years sugar has been an important food ingredient that provides a balanced sweet taste, safety as a preservative and provides functional properties essential in a multitude of foods" (para. 1). This passage argued that food practices, specifically sugar consumption, that pre-date contemporary society are safe. It supports this claim by saying that sugar has a desirable taste and serves a functional purpose. Consistent with Pollan's (2006) description of the omnivore's dilemma, tradition and taste were established as important guidelines because by taking advantage of the knowledge garnered by others’ experiences people are able to avoid the undue risks they would take if they were to eat any object they came across. The natural was situated within notions of customary culinary culture and privileged tradition as a valuable form of knowledge. The enduring place of sugar in gastronomical tradition served may have been intended to reduce perceptions of its riskiness.

In addition to situating the naturalness of sugar as a traditional gastronomic practice, the SA emphasized the ubiquity of sugar consumption as an integral part of a natural gastronomy. It wrote, for instance, that "'Regular' or white sugar, as it is known to consumers, is the sugar found in every home's sugar bowl, and most commonly used in home food preparation" (2010s, para. 2). By employing familiar terms such as "regular" sugar and repeating the word "home", this passage normalized sugar as an ingredient. Sugar consumption was positioned as an everyday, mundane food practice. The constructed ubiquity of sugar consumption, distanced "natural" sugar from discussions of risks ascribed to the consumption of novel foods, which often leads to consumer distrust (Sassatelli & Scott, 2001).
In addition to touching on the tradition of human gastronomy, the SA also positioned the marriage of biological and sensory as signs of a natural gastronomy. The SA linked sugar to the biological by providing information throughout the website concerning the caloric value of sugar. For example, it wrote, "Nature's very own sweetener has only 15 calories in a teaspoon" (2010q, para. 2). The caloric value of sugar is important because it represents how much energy the body will acquire if sugar is eaten. The contribution of calories to the body represented natural foods as meeting a biological need. The SA also situated the natural as a biological process by characterizing the body's need for sugar. It wrote, "Sugar is a healthy part of a diet. Carbohydrates, including sugar, are the preferred sources of the body's fuel for brain power, muscle energy and every natural process that goes on in every functioning cell" (2010l, para. 1). This passage suggested that sugar is not only safe for the human body, but that it is also the body's preferred source of energy.

Regardless of the scientific veracity of this claim, this passage suggested that the relationship between the body and sugar was more than biological. The body was characterized as having a physiological desire and preference for sugar. From this standpoint, sugar was naturalized as not just an elemental part of functional nutrition, but also as a natural biological craving. The Association emphasized the subjective experiences of eating sugar-sweetened foods. They wrote,

Eating is a sensory and emotional experience that is made up of many factors such as flavor preferences (salty, sweet, bitter) and even mouth-feel. How a food item feels in your mouth is a major component in food preferences. (SA, 2010d, para. 1)
Situating the sensory experience of sugar consumption as valuable in its own right, the pleasure associated with the consumption of sugar was framed as a natural gastronomical response.

Situated as natural bodily desires, the Association suggested that consumers should marry the biological and pleasurable aspects of eating. The Association (2010l) explained:

The keys to a healthy lifestyle are as much common sense as they are scientific. You should strive to maintain a diet that includes a wide variety of foods that contain a range of carbohydrates, proteins, vitamins, minerals and fats. When it comes to consuming these foods, think moderation and choose reasonable portion sizes. (para. 4)

Similarly, in another passage the Association (2010m) said:

individuals can enjoy sugar as part of a balanced, nutritious diet without fear of negative health effects... sugar makes many healthful foods palatable, which helps contribute to intakes of key vitamins and minerals necessary to maintain good health. Sugar in moderation can be a part of a balanced, healthful diet and lifestyle (para. 8-9).

These claims represented the SA’s guidelines for the incorporate nature into the body. They argued that it was not only safe, but healthful for consumers to eat sugar because it helped them achieve balance of both the biological and the sensory experiences of food. This approach to consumption reflects Hippocratic injunctions that a balanced diet promotes good health (Lupton, 1996). The natural and gastronomic traditions were linked by an appreciation for both the sensory and biological experience of food.
By situating the negotiation of biological and sensory experiences as a natural balance in gastronomic tradition, the SA implied that poor health resulting from sugar consumption somehow represented a perversion of the natural. To address this problem, the SA suggested that consumers should assert control over their "unnatural" consumption patterns. While balance referred to a somewhat natural state that emerged from the incorporation of sugar into one's diet, implicit in the SA's claims about the roles of moderation in gastronomic tradition was the conclusion that people are responsible for their health. If balance did not come naturally for audiences, they were told to be mindful of their consumption patterns and caloric intake. As a rational process to control the incorporation of foodstuffs into the body, moderation held individual eaters responsible for knowing what "reasonable portion sizes" looked like. However, the size of a reasonable portion is ambiguous and was never clarified by the Association. The failure to clarify reasonable portion sizes could be understood as the SA strategic avoidance of consumption limits on its product.

**Natural Processes.** In addition to positioning ecological harmony and gastronomical tradition as central risk criteria for eaters, the SA identified processing as an important aspect of the natural. The SA promoted sugar by identifying it as natural. For example, the Association (2010k) explained that, "Sugar (sucrose) is a natural carbohydrate, found in fruits and vegetables. All green plants manufacture sugar through photosynthesis, the process by which plants generate energy and food reserves from sunlight" (para. 2). This passage was coupled with an illustration of the steps of photosynthesis, highlighting the creation of sucrose and its conversion to sugar by "all green plants." The Association (2010o) also explained that photosynthesis is a process
that "turn[s] sunlight into the nourishment they need for growth" (para. 1). These passages, and others, served to privilege products of biological processes over human processes. Framed as the product of photosynthesis and the source of plants’ nourishment, sugar was situated as part of a system greater than, that is external, to humans.

The existence of sugar outside of human interaction positioned sugar as somehow more reliable and pure, and, as such, safer. While refining may isolate desired food parts from the undesirable parts, the notion that isolating sugar crystals from the plant parts that produced it as a means of making nature more natural is an abuse of the word. Positioning sugar as a pure form of nature is desirable for the Association because labeling refined sugar as a purer version of the natural made sugar appear more wholesome than its original source in canes or beets. Sugar as a representation of a purer nature distracted fears that incorporating the outside world into the body is risky. To maintain bodily purity, not only did people need to avoid artificial foods, but they also needed to consume nature in its purest form.

While sugar is indeed a product of a biological process, the table sugar that consumers use to sweeten their foods does not look like what you would find in a plant leaf. Table sugar’s white, crystallized appearance is acquired through refining, a human intervention. The SA attempted to minimize the differences between plant sucrose and table sugar. For example, the Association explained, "The sugar recovered from sugar beets or sugar cane is identical to the sugar (sucrose) naturally present in the original plants" (2010t). Emphasizing the similarities of plant and table sucrose served to
minimized perceptions of the risks commonly ascribed to human intervention. If plant products were healthy, the Association reasoned, then table sugar is, too.

The Association also attempted to minimize the level of human intervention required to obtain table sugar from plants. It explained the process of converting sucrose to table sugar through refining when it (2010r) wrote,

"Refined" is a misunderstood word, especially when it comes to sugar.

Somehow, over the years, refined has taken on the meaning of being overly processed and manipulated. In truth, the definition of refined is "to make pure."

The refining process simply separates natural sucrose from the plant material without bleaching or chemical manipulation. (para. 2, original emphasis)

This passage suggested that sugar refining was represented as a process that made a pure nature even purer. A similar sentiment was expressed more concisely in another section: "Sugar is simply separated from the beet or cane plant, and the result is 99.95% pure sucrose (sugar)" (SA, 2010o, para. 2). Refined table sugar was actually said to be purer than the sugar found in plants. The refining process simply removed all of the undesirable materials. The natural was positioned as safe and desirable in passages, yet somehow nature was not seen as wholesome enough for consumers. These passages suggested that the natural represented purity, which may not be found in actual nature. Refining was positioned as a process that made nature pure, more natural.

The Association also described the steps of the sugar cane and beet refining process. About sugar beets, it (2010p) said,

After washing, sugar beets are sliced and soaked in hot water to begin the process that separates sugar from the rest of the plant. The hot sugary liquid is filtered,
concentrated to a deep brown syrup, whose color is due to its high molasses content. The molasses-rich syrup is allowed to cool slightly before it is whirled in a centrifuge – a large perforated basket spinning very rapidly much like a washing machine in the spin cycle – where most of the molasses is spun away. At the end, hot water is sprayed over the light brown crystals to remove the remaining molasses, leaving pure naturally white sugar crystals. The sugar crystals are then dried. It is important to note that beet sugar is neither chemically altered nor bleached to achieve its naturally white color (para. 1)

Similarly, the Association explained (2010p) the process of obtaining sugar from sugar cane:

Cane stalks are shredded and squeezed to extract its natural juice, which is boiled until it thickens and molasses-rich sugar crystals begin to settle. The molasses-rich crystals are sent to a rapidly spinning centrifuge to remove molasses and leave pure naturally white sugar crystals. The sugar crystals are then dried. It is important to note that cane sugar is neither chemically altered nor bleached to achieve its naturally white color. (para. 2)

Together, the Association's descriptions represented cane and beet refining as fairly simple processes with natural products. First, the passages on refining simplified the steps of beet refining by limiting the number of machines or technologies refining requires. The one technology it did mention, the centrifuge, was made familiar through a comparison to a "washing machine," an appliance that would be common to audiences.
Though these descriptions are not inaccurate, they are strategically ambiguous about the technology involved in sugar refining. Describing the role of technology in sugar cane refining, Chou (2000) explained,

Factory automation in the raw cane factory ranges from fully automated facilities to facilities without any automation. It is evident that for countries where labour cost is expensive, sugar factories are highly automated. On the other hand, in some countries where the need is to employ as many people as possible, the level of automation is sometimes nonexistent. (p. 19)

Indeed, a variety of technology is used in sugar cane refineries in the United States (United States Environmental Protection Agency, 1974). Although it is likely that many refineries represented by the SA use technology, the Association avoided using technological jargon in their descriptions of the refining process. For example, they omitted discussion of important technologies, such as the "calandria pan," a heating element that helps to obtain sugar crystals from syrup and molasses, the "massecuite mixer," which distributes functions to prevent the sugar crystals from settling out of the mixture of syrup and molasses before it is transferred to the centrifugal for separation, and the "bone charcoal filters," which are often used to decolorize sugar solutions to produce white sugar (Chou, 2000). By omitting technical vocabulary associated with the refining process, the passages distanced sugar from technology and human intervention which (Beck, 1992) explained members of risk societies commonly associate with risky products.

The omission of these words should not be understood to represent deception; rather, the ambiguity of the Association’s simplified description of the refining process
could be understood as an attempt to help consumers understand. Indeed, this type of
description was more approachable and easier to understand for most audiences than
descriptions that someone might find in a technical handbook describing refining. The
lack of jargon and the simplified processes serve to make these passages easier to read
and to make sense of the refining process.

Second, beyond naturalizing the processes by which sugar is obtained, the SA's
description of the refining process also highlighted the importance of purity as a criterion
for eaters. The Association's descriptions of cane and beet refining emphasized that
chemicals, specifically bleach, were not used to make the final product white. The
importance of sugar's coloring may be relevant to growing skepticism of processed foods.
For example, Downham and Collins (2000) explained that food industries must consider
the pigment of their foods "to meet the increasing consumer perception that `natural is
best'" (p. 6-7). Hutchings (1999) explained that color as an indication of "naturalness is a
quality to which we can become conditioned" (p. 7). Commonly, brown foods are
associated with healthiness. For example, Hutchingson pointed out that, "In Britain,
white-shelled eggs are associated with battery production; those with brown shells are
seen as more natural" (p. 7). Similarly brown wheat bread is understood to be healthier
than white bread (Lupton, 1996). If brown is commonly associated with the natural, then
white might be understood to represent processed and unnatural.

To escape the negative connotations ascribed to white foods, the Association
sought to frame sugar's whiteness as a representation of purity. The white table sugar
represents an absence of molasses, not the introduction of chemical, bleaching agents.
For example, the Association (2010p) explained that beet and cane sugar "is neither
chemically altered nor bleached to achieve its naturally white color" (para. 1-2).

Similarly, it (2010k) explained that, "raw sugar color is removed by physical separation of plant materials and by carbon filters which absorb colored impurities. Since the pure sugar crystals are naturally colorless, no bleaching or whitening is necessary" (para. 5). Consistent with the FDA's (2010) guidelines for natural foods, the SA's definition of the natural identified harmful or undesirable human intervention as including the incorporation of chemicals or other synthetic substances.

While fitting within the FDA's (2010) guidelines, this version of the natural is limited. The absence of bleaching agents and chemicals is situated as natural; however, this white version of a purer nature without human intervention is a limited view of natural. It is interesting to consider color in relation to the multiple refining steps used to remove the color of the beet and sugar plants themselves. For example, carbon filters are used to absorb any remaining colored plant materials (SA, 2010t, para. 1) and "green run off" is a byproduct of the washing process. Though the Association was accurate in that refining does not introduce chemicals and bleaching agents into the sugar refining process, their portrayal of the whiteness of table sugar as natural fails to take into account that much of the refining process is used to actually wash off or filter out of the natural characteristics of plants: their color and other physical attributes. Though consistent with definitions of "natural" as set by the FDA (2010) and the chemical compositions, table sugar is actually a rather distorted version of the sugar that exists in nature.

In sum, it is important to remember that definitions are symbolic actions that establish preferred meanings and inevitably emphasize some attributes of an object for some purpose (Burke, 1966). I have demonstrated how the SA's conceptualization of the
natural met and exceeded FDA (2010) guidelines. However, I have also demonstrated that was a strategic definition because it allowed the Association to frame sugar as a safe food ingredient by distancing sugar from the risks associated with new artificial products that are developed using technology. In the next section, I will further demonstrate how the SA's definition of the natural, specifically the ambiguity that characterized the definition, strategically distinguished sugar from other sweeteners.

**Distinguished sweeteners.** The SA (2010l) wrote, "Because it's [sugar's] all-natural, you can consume it with confidence" (para. 2). The Association did not suggest that all sweeteners could be consumed such certainty. In this section, I describe how the SA's definitions of the natural were expanded and retracted to alienate other sweeteners from the natural and to highlight the safety of sugar.

Discussions of artificial sweeteners marked much of the SA's online discursive activity and were described as the crux of the Association's activism efforts. The Association contrasted the naturalness of sugar with the manufactured and processed nature of artificial sweeteners. For example, the Association (2010g) said, "Five artificial sweeteners – acesulfame K, aspartame, neotame, saccharin, sucralose – are approved for use in the U.S. All are chemically manufactured molecules – molecules that do not exist in nature" (para. 1). The chemical manufacturing clearly violated understandings of natural foods as products resulting from natural processes or existing in ecological harmony. Indeed, artificial sweeteners are not natural according to the FDA (2010) because they contain synthetic substances. However, the Association did not simply state that artificial sweeteners were unnatural due to these violations; rather, the Association used artificial sweeteners to emphasize other natural parameters.
Artificial sweeteners were also described in opposition to traditional gastronomy. For example, the Association (2010g) said that artificial sweeteners "do not have the same clean sweet taste of pure, natural sugar" (para. 4). This passage positioned the taste profile of artificial sweeteners outside that of the natural. To further identify artificial sweeteners as dangerous food additives they were also posed as a threat to future taste profiles: "With the increased use of these high intensity sweeteners in our food supply, the question is, will this change expectations for sweetness, especially for the next generation? Will we become accustomed and expect sweeter and sweeter foods?" (SA, 2010f, para. 11). In response to these questions, it (2010u) explained that, "Many of the [alternative and artificial] sweeteners used today are so much sweeter than real sugar that consumer palates may become accustomed to exaggerated sweet tastes. Sugar substitutes can be up to 1200 times as sweet as real sugar!" (para. 2). These passages positioned artificial sweeteners as a threat to the contemporary palate, but also the continued endurance of a gastronomical tradition. In doing so, the Association further identified artificial sweeteners as dangerous food additives and established the safety of sugar. By positioning threats to consumers' sensory experiences as major risks, the SA expanded the types of concerns addressed in a risk society. While major food risk ideologies focus on the mitigation health threats, the SA emphasized the need to manage threats to taste.

Discussions of artificial sweeteners also served as a contrast to notions of the natural as enduring. Whereas sugar was positioned as safe because its use in the human diet pre-dates contemporary society, the Association emphasized the newness of artificial sweeteners and sugar alcohols. For instance, it (2010u) wrote, "Thirty years ago, sugar was the primary sweetener in America's kitchens and in the products that lined the pantry."
Today, there is a surplus of sweeteners in America's marketplace in addition to real sugar" (para. 4). This passage emphasized that other sweeteners did not have a tradition in the American diet. As such, non-sugar sweeteners were described as disruptions in consumers' natural traditions.

Although the SA's conceptualization of the natural was ambiguous in areas, by emphasizing artificial sweeteners as opposition, its rhetoric created a perceptual contrast effect. Contrasted with artificial sweeteners, sugar appeared much closer to being natural. Further, the perceptual contrast served to create clear boundaries between the natural and the unnatural. This strategy becomes even more evident when the Association's discussion of HFCS is taken into account.

HFCS is a common alternative nutritive sweetener (Insel, Turner, & Ross, 2004). It is natural according to the FDA (2010). HFCS was only referenced explicitly in a four paragraph section of the Other Caloric Sweeteners page (SA, 2010h) and in two media documents (SA, 2010n, 2010i). Similar to other sweeteners described on the page, the brief four paragraph passage about HFCS was written in a very formulaic style. It (2010h) said that, "Like ingredient terms permitted for other sweeteners manufactured from starch, the descriptor "high fructose corn syrup" denotes more than one product" (para. 23). It briefly explained that the different types of HFCSs emerge from the fact that there are multiple processes for manufacturing HFCS. Though HFCS is a product of refining, as sugar is, the SA selected to term the processing of HFCS as "manufacturing." By doing so, the Association distanced the process that goes into sugar refining from those that go into HFCS refining, which distanced HFCS from the SA's representation of the natural as existing in ecological harmony.
This passage also explained that HFCS is found in "sweetened carbonated soft drinks and other flavored beverages...canned fruits, confectionery products and dessert syrups" (SA, 2010h, para. 25). These processed "junk food" items stand in stark contrast to the fruit and vegetables that are represented as the sources of sugar in the human diet on the website. Further, even though sugar and HFCS can both be used to make junk food, by associating HFCS with junk foods, the Association attempted to link HFCS with foods commonly thought to cause obesity. Finally, both of the press releases that contained explicit references to HFCS positioned the additive in opposition to enduring traditions. Referring to the use of sugar, as opposed to HFCS, in Pepsi Throwback soft-drinks, the SA praised Pepsico. The Association justified their praise by referencing the relative newness of HFCS. It (2010i) said

High fructose corn syrup, invented in 1957, was rapidly introduced into the U.S. soft drink market in the 1970s and 1980s. Sugar remained the beverage sweetener of choice in Europe, Mexico, and most areas outside the United States. Now, America appears to be shifting back again (para. 4).

This passage on HFCS described trends in consumers’ sweetener preferences. It claimed that HFCS were as a distraction, but sugar was and will remain a dominant sweetener. This passage positioned HFCS as falling outside of notions of the natural because it violated the expectation that natural foods pre-date contemporary society or are represented by ubiquitous consumption.

It is interesting to note that the Association never mentioned that the FDA (2008) considers HFCS, similar to sugar, natural. As such, HFCS blurred the boundaries of natural established by the SA and posed a threat to the authority of sugar within the SA’s
rhetoric. This description demonstrates the strategic ambiguity that characterized the Association's definition of natural. Because the parameters were ambiguous, the Association was able to restrict the application of their definition of the natural to the extent that even a sweetener considered natural by the FDA (2008) was excluded.

The section *Nutritional Advocacy* (SA, 2010f) argued that consumers are confused about what is sweetening their foods and that they would make healthier choices if they had access to front-panel food labels that indicated the type of sweetener used to flavor the food product. They wrote, "If it is important to you to know if the product you purchase contains artificial sweeteners, let your congressional representatives know that FDA needs to take action on this important consumer issue" (para. 3). To justify their call to action, the SA wrote, that "consumer understandings of what is sweetening their foods and beverages has failed to keep pace with this dramatic change" (para. 1). This passage emphasized that sugar replacers, such as HFCS and artificial sweeteners, are new and, therefore, in conflict with nature.

In sum, the SA attempted to distinguish sugar from other sweeteners, specifically artificial and HFCS, based on the criteria of the natural. The Association's definition appeared to be more precise than the FDA's (2008) definition of the natural; however, biases in the SA's definition of the natural became evident as the Association applied the definition to sugar, HFCS, and artificial sweeteners. Because sugar emerged as a safer than HFCS and artificial sweeteners, this defining tactic can be understood as a strategic.

**Conclusion**

I have argued that much of the SA's rhetorical initiatives were aimed at establishing their conceptualization of the natural as a criterion for making healthy eating
decisions. Framed as ecological harmony, gastronomical tradition, and natural processes, the Association's definition of “the natural” distinguished sugar from other sweeteners. Within this framework, sugar emerged as a healthy sweetener that could be consumed with confidence in "reasonable" portions. The positioning of sugar’s role in the human diet was distinct from discussions of artificial sweeteners and HFCS, which were identified as unnatural and, as such, too risky to consume. I conclude by describing how my analysis contributes to theoretical understandings of nutritional risk, responsibility, and risk management. I then evaluate these contributions by considering their soundness and sustainability.

**Artificial natural-unnatural guidelines.** Theoretically, my analysis supports and complicates the assumptions of dominant risk ideologies. Consistent with risk ideologies, incorporating the material world was represented by the Association as a negotiated and risk-filled process (Lupton, 1996). However, while healthism (Crawford, 1984) and nutritionism (Pollan, 2006) suggest that people should seek the wisdom of scientific and technological experts, the Association's establishment of the natural as a criterion for eating dismissed these ways of knowing, in favor of tradition, harmony, and balance. By diminishing the role of science and technology in the attainment of health or mitigation of risks, the Association appealed to and reinforced the belief systems of what Beck (1992) termed reflexive members of risk societies who question the benefits of human intervention.

Lupton (1996) argued that the role of "natural" discourses in contemporary society can be understood as a response to the uncertainty surrounding eating. She claimed that, "If we can believe that a food is 'natural,' then we feel better about eating it"
(p. 92). It follows that a clear definition of the natural would help consumers manage uncertainty associated with their eating behaviors. The SA's conceptualization of the natural could be understood as an attempt to clarify the vagueness that characterized the FDA's (2010) definition. Indeed, the Association's criteria for what counts as natural were sound because they were consistent with the FDA's official definition. It also encompassed more than the lack of synthetic additives, so theoretically, this definition provides stricter guidelines for classifying the natural. Nonetheless, I argue that their version of the natural was also marked by ambiguity. There is a certain liminality that characterized borders of what distinguished the natural from the unnatural in the SA's discourses. For example, by defining the natural as an absence of both chemical and organic materials, the Association failed to establish clear frame for how much intervention is too much. Similarly, the Association's discussion of moderation, as a rational control of dietary intake, failed to support its notion that the natural was marked by biological and sensory desires.

The ambiguity that characterized these parameters of the natural did not rest solely in the polysemic richness of the natural or in incompetent communication; rather, I argue that it represented strategic ambiguity. The fluidity of the Association's parameters for naturalness were beneficial for the SA, as it permitted the SA to develop, alter, and manipulate the parameters of the natural to meet their objectives. Indeed, I have demonstrated how the Association's version of the natural served to promote sugar and ascribe riskiness to other sweeteners. That is, sugar is natural because it meets the FDA's (2010) minimal guidelines; however, it is also superior because it is the product of ecological harmony, natural processes, and gastronomic tradition. Further, their
conceptualization of the natural as strategic communication can be seen when the framing of HFCS is considered. The SA identified HFCS as a risky sweetener, even though it falls within the FDA's (2010) guidelines to be considered natural, because it did not meet the SA's other parameters of natural processes and gastronomic tradition.

The ambiguity that characterized the SA's response to the limits of the natural is the key to sustainability of the SA's promotion of sugar. The fluid parameters of the SA's "natural" lend themselves to be discursively extended and restricted to identify sugar as healthy and other sweeteners as risky. Further, though, the fluidity of the parameters permit the SA to account for and incorporate future changes in refining practices, health beliefs, and health policy. For example, even if sugar refining practices are called into question or if new sweeteners are identified as natural by the FDA, the Association has the discursive ability to shape the parameters of "natural" to incorporate sugar and continue alienating other foods and additives. By their definition, any new sweeteners would be unnatural because they are not traditional.

However, we should also evaluate the SA's appeals to the natural as a criterion of healthy consumption by also considering what this framework omitted. Based on the natural criterion for healthy eating sugar is natural and safe to consume in moderation. However, basing healthy eating on a product's naturalness can be problematic. First, natural does not mean healthy. Indeed, there are multiple additives that are healthier in their synthetic forms, such as almond extract, which contains trace levels of cyanide in its natural form but not in its synthetic, "artificial" form (Schlosser, 2001). Further, by focusing only on the naturalness of sweeteners, the SA ignored larger social problems that are associated with sweeteners. In particular, the SA omitted discussions of
nutritional density and disparities in consumers’ access to the various sugar-containing foods. Sugar is present in fruits, vegetables, soft drinks, and candy; however, these foods are not equally healthy for consumers, nor do all consumers have equal access to each of these forms of sugar (Maurer & Sobal, 1995). In fact, economically disadvantaged populations have less access to fruits and vegetables, which are nutrient-dense and increased access to junk foods and sodas, which are nutrient-deficient (Brownell & Horgen, 2004). By omitting a discussion of nutritional density and food disparities, the Association did not provide audiences the opportunity to consider that something could be natural and risky.

**Responsibilities: The farm to Capitol Hill.** Beck (1992) said that the burden of responsibility for risk mitigation and health promotion in risk societies has been allocated to the individual, as opposed to the collective or involved organizations. Food scholars mirror Beck's sentiment, identifying the responsibility for food risk mitigation as falling on the shoulders of consumers (Lupton, 1996, 1999; Simon, 2006). While the SA assigned responsibility to consumers, the food industry and government were also held accountable for the relationship between food and health.

The SA's conceptualization of the natural as safe and healthy meant that it was important to distinguish between what was natural and what was not. The SA (2010u) wrote, "There is a reason why organic, natural foods and unprocessed foods are making a comeback. People want to know what they are putting in their kids' bodies as well as their own" (para. 2). However, the SA (2010f) explained that, "today many foods, even foods that do not claim to be sugar-free, now contain artificial sweeteners" (para. 2). "To assist consumers in making informed choices about what is sweetening the products they
purchase," the SA proposed a petition to the FDA, "requesting changes to labeling regulations on sugar and alternative sweeteners" (para. 2). The petition suggested that artificial sweeteners and sugar alcohols should be identified on the front of a food’s packaging. By discussing their lobbying efforts to help consumers identify natural food products and their efforts to educate consumers about the natural, the SA identified their political role in risk discourses. The SA emerged as a helpful partner in consumer health. However, this petition and the SA’s discourse in general framed public health agencies, specifically the FDA, as interfering with the consumption of natural foods as a way to pursue health.

This conceptualization of consumer, industry, and public health roles and responsibilities is interesting because it is partly consistent with and partly dissonant with scholarship about the political nature of these stakeholders. Positioning consumers as responsible for the ultimate health outcome is consistent with risk ideologies (Beck, 1992). The SA’s description of consumers as political agents in healthy eating, however, did not reflect deficit models of public understandings of health. While the SA gave consumers agency, it did not describe how consumer agency is enabled and constrained by the social messages and material aspects that characterize contemporary food systems. The SA's ambiguous definition of the natural and promotion of natural sweeteners as safe, not necessarily health promoting, did not provide a clear interpretation of how consumers could responsibly promote their own health.

Further, the SA openly described its lobbying efforts. Although the goals of their efforts paralleled Kollman’s (1998) description of lobbying efforts as “attempt[s] to communicate public support to policymakers…and attempt[s] to increase that public
support among constituents” (p. xiii), Nestle (2003) argued that much of lobbying takes place behind closed doors to avoid public exposure. Exposing the role of the SA in food politics was likely a sustainable communication practice because it made the SA appear transparent and responsible in the effort to help consumers make healthy decisions.

Finally, the framing of the government as the main locus of responsibility is novel, yet not surprising at the same time. The nuance of this strategy resides in the fact that the SA addressed a structural issue and identified governmental regulation as a solution, solutions which Simon (2006) claimed that the food industry usually avoid at all costs. Simon (2006) wrote that the food industry commonly places blame on consumers and ignores their own or public health’s responsibility because the industry does not want to change and they also do not want the government to force them to change. This strategy is not completely surprising, however, because the regulations called for by the lobbying initiative were based on the natural as a criterion of health. As such, sugar and the food that use sugar as a sweetener would not have to make changes, but their competition would. Further, by lobbying the government to distinguish between natural and artificial food labeling, the SA also displaced other topics related to sugar and health that could potentially hurt the sugar industry, such as issues of obesity, nutrient density, and disparities in access to healthy foods.

In addition to representing health outcomes as a mixture of consumer, industry, and public health responsibilities, the SA’s appeals to the natural has implications for industry practices. Multiple times, the Association called for the industry to use natural sugar instead of artificial sweeteners and HFCS. The SA vilified the food industry’s use of HFCS and its failure to appropriately label products with HFCS. In a press release, the
SA (2010i) praised Pepsi for promotion a Pepsi Throwback soft drink that was sweetened with sugar instead of HFCS. The CEO of the SA, Andy Briscoe, was quoted as saying that, "Pepsi Throwback gives shoppers another opportunity to chose [sic] natural sweeteners instead of manufactured ones" (para. 3). This press release praised the use of sugar, but also the actions of a food company to provide consumers with the choice to select the sweetener that flavors their foods. It is unique that the SA held the food industry accountable for using sugar to sweeten products or to better label products sweetened with HFCS; yet, again, it is not surprising as their call to action discouraged use of sugar’s main competition, HFCS.

**Concluding thoughts.** The SA’s discursive activity serves as an example of how ambiguity and clarity are flexible, how they can be used strategically to identify and manage health risks, and how they can allocated responsibility for risks. Because the differences between the natural and the unnatural are sufficiently ambiguous, their appeals to "natural" are likely to be sustainable forms of commercial promotion. However, the failure to incorporate in-depth discussions of other important health issues, such as nutrient density and accessibility, make it a questionable form of health education.
Chapter Five: Calories, demands, and so many voices: Exploring loci of quantity in
Calorie Control Council's argument for low-calorie sweetener consumption

Rhetorical Context

There are a variety of food additives available to manufactures and consumers that mimic the sweet flavor profile of sugar, yet provide very few or no calories (Drummond & Brefere, 2010, p. 119). Whereas sugar contributes approximately four calories per gram, nonnutritive sweeteners and sugar alcohols yield few to no calories when consumed because they have such an intense flavor that the amount needed to sweeten foods is miniscule or because their chemical structures prevent them from being metabolized. Nonnutrative sweeteners are also commonly referred to as "sugar substitutes," "sugar replacers," "intense" sweeteners, and "low-calorie" sweeteners (Mahindru, 2008). Though some are derived from plants, such as steviosides, many popular nonnutritive sweeteners have synthetic origins, such as aspartame, saccharin, and acesulfame-K. As such, nonnutritive sweeteners are frequently labeled "artificial sweeteners" regardless of their organic or inorganic origins. In this chapter, I refer to these sweeteners generally as low-calorie sweeteners, highlighting sub-groups when needed.

Low-calorie sweeteners have been available since the discovery of saccharin in the 1880s; however, the 1940s and 1950s marked a boom time in their commercial application (Mahindru, 2008). Multiple events sparked the popularity of these food additives, including sugar rationing introduced during the Second World War, growing preoccupations with health and diet products, and market competition to develop low-calorie sweeteners that would compete with saccharin. Today, low-calorie sweeteners
and sugar alcohols are used in a wide range of products including foods, pharmaceuticals, and toothpastes. Their most popular use is in diet and low-calorie foods and beverages.

Because artificial sweeteners are considered food additives, the FDA requires that they be determined safe before being approved for commercial use (Drummond & Brefere, 2010). According to the 1958 Food Additives Amendment to the Food, Drug, and Cosmetic Act, a sweetener can be considered safe if it is Generally Recognized As Safe (GRAS) or if its safety is established after comprehensive scientific testing (Mercola & Pearsall, 2006). The GRAS label was given to foods used frequently and considered safe prior to 1958. Industry groups must petition the FDA for a scientific review to establish their GRAS status and associated Acceptable Daily Intakes (ADI) before they introduce new products to the marketplace. Additional reviews can also be conducted by the FDA if questions concerning a product's safety arise.

There are currently five low-calorie intense sweeteners approved by the FDA for commercial use in the US: saccharin (Sweet n’ low), aspartame (NutraSweet® and Equal®), sucrolose (Splenda®), acesulfame potassium (Sunett® and Sweet One®), and neotame (not yet branded) (Drummond & Brefere, 2010). Approved sugar alcohols include sorbitol, lactitol, mannitol, isomalt, and xylitol. Other artificial sweeteners pending approval or reapproval in the U.S. have been approved for use in other countries; these include alitame and cyclamate, which are commonly used in Europe.

Though a variety of intense, low-calorie sweeteners are available for consumption, their existence in the marketplace has not been without controversy (de la Peña, 2010). Since the 1960s there have been several heated public debates about the safety and regulation of intense, low-calorie sweeteners. The scientific and regulatory
controversies surrounding aspartame and saccharin were perhaps most public (de la Peña, 2010). Watson (2002) wrote that, since its original FDA approval in 1974, "aspartame has been mired in controversy." Proponents of aspartame point to nearly 200 toxicology and clinical studies that have demonstrated the additive's safety. Additionally, aspartame has been endorsed by the Joint FAO/QHO Expert Committee on Food Additives, The American Medical Association, The American Health Association, and numerous other health agencies and organizations. On the other hand, opponents have accused aspartame of causing a wide range of conditions including systemic lupus, multiple sclerosis, vision problems, headaches, fatigue, and aggressive behavior. In addition to scientific controversy, aspartame's safety has been considered controversial due to alleged conflicts of interest among industry groups, members of the FDA, and pro-aspartame researchers.

Saccharin has also had a turbulent regulatory history (Watson, 2002). After a study published in 1977 reported increased incidence of bladder tumors in rats, the FDA proposed a ban on saccharin (Drummond & Brefere, 2009). A surge of public outcry prevented the FDA from implementing the ban. Instead, a warning label for potential carcinogenic effects was introduced in the US. In 2001, the U.S. Congress repealed requirement for warning labels on saccharin-containing products. This scientific controversy and resulting changes in regulation required substantial experimentation and affected "probably the largest number of animals ever used in a safety study" (Watson, 2002, p. 238). Watson (2002) said that this body of research found that saccharin is safe when consumed in moderation, but increases in bladder tumors occur when it is consumed in high concentrations. As such, the FDA justified their decision to allow saccharin in the marketplace by setting a relatively low ADI for the additive.
The discursive activities of industry lobbying during scientific and regulatory controversies have been cited as reasons to question the safety of saccharin (Cummings, 1984; de la Peña, 2010; Mercola & Pearsall, 2006). In particular, de la Peña (2010) said that the CCC urged the FDA to approve the safety of saccharin on the basis of public demand, rather than public health. The CCC posted advertisements in major newspapers in the United States that accused the FDA of violating consumers’ freedoms by proposing a ban on saccharin using faulty science. The advertisements asked the public to conduct their "own experiment...in democracy" by cutting the page from the newspaper and sending it to their congressperson to contest the FDA's decision (qtd. in de la Peña, 2010). Apparently, many audience members did because the proposed ban was appealed. The CCC has also filed petitions that asked the FDA to eliminate the warning labels on foods containing saccharin. Critics question the value of health decisions based on public opinion, and are dismayed by the role of the CCC in motivating the public's participation in health decisions (Cummings, 1984; de la Peña, 2010; Mercola & Pearsall, 2006).

Despite these controversies and the publicity that surrounded them, aspartame and saccharin have remained popular sweeteners in the United States (Mahindru, 2008). Indeed, high intensity sweeteners have experienced an average annual growth rate of 4.4% globally between 1985 and 2000, as compared to 1.7% for sugar and 4.1% for High Fructose Corn Syrup (HFCS) (Gudoshnikov, Jolly, & Spence, 2004). Though sugar was the dominant sweetener in 2000, alternative sweeteners controlled a greater share of the sweetener market than HFCS, with 9.8% compared to 7.9%. The largest amounts are consumed in the United States and Europe. "To explain the ultimate success of artificial sweeteners in the United States, in spite of repeated suspicions of their dangers, lawsuits
about their claims, and relentless challenges by the sugar industry," de la Peña (2010) argued, "one must understand the CCC" (p. 93).

**Calorie Control Council.**

Developed in 1966, the CCC (2010a) is an "international non-profit association representing the low-calorie food and beverage industry" (para. 1). Its members include the manufacturers and suppliers of low-calorie sweeteners, reduced fat ingredients, and products that commonly contain these types of ingredients, such as candy and diet beverage companies. A few of the member companies include Cadbury Adams, Chargill Inc. Dr Pepper Snapple Group, Pepsico, the Coca-Cola Company, the Wrigley company, and Abbott Nutrition, maker of Ensure®, Similac®, and PediaSure® (CCC, 2010b). Because the use of low-calorie sweeteners is important to the livelihood of the organizations represented by the CCC, the Council was created to promote the development, testing and consumption of new sweeteners.

The CCC described the two main communicative goals it actively pursued. First, the CCC (2010a) said that it sought to "provide an effective channel of communication among its members, the public and government officials, and to assure that scientific, medical and other pertinent research and information is developed and made available to all interested parties" (para. 2). They accomplished this goal by diffusing information through their website, www.caloriecontrol.org, but also by funding scientific and public opinion research to produce knowledge about low calorie products. The CCC's homepage, caloriecontrol.org, had nine links to secondary pages including caloriescount.org and pages that provided access to tertiary materials concerning sweeteners and lite, a healthy weight tool kit, a health professional library, recipes for a
healthy lifestyle, articles and video, press room, other great resources, and FAQs. A fourth level of pages contained more specific items, such as educational handouts, press releases, and the Council's multi-media kit.

Second, the CCC (2010a) said that it was important for the Council to foster “the communication of information on the importance of diet, physical activity and weight control in achieving and maintaining a healthy lifestyle” (para. 3). Audiences could find information about low-calorie foods on the CCC's main website, www.caloriecontrol.org, and tools to help audience members attain and sustain an appropriate body weight. These include Body Mass Index calculators, Dietary Intake forms, and Calorie Calculators, as a supplemental website, caloriescount.com. According to Stowell (2006), the CCC "has achieved remarkable success with its online weight loss and maintenance programme" (p. 55). Indeed, the CCC (2010e) reported that www.caloriecontrol.org "received more awards and recognition than almost any site of its kind, and regularly attracts an average of 350,000 visitors per month" (para. 2). These websites were last updated in 2010 (CCC, 2010g).

**Study Rationale**

"The story of artificial sweetener reminds us that real people created the industrial food products many are quick to criticize in American life today,” (de la Peña, 2010, p. 2) and that we need to take seriously the motivations and discursive actions of these rhetors. However, most scholars exploring the discursive contributions of industry groups to public negotiations of low-calorie sweeteners have focused on communicative events that took place prior to the removal of saccharin warning labels (for examples see de la Peña,
2010; Cummings, 1983; Lawler, 1986; Mercola & Pearsall, 2006). Few have commented on their more recent rhetorical strategies.

In this chapter, I examine the discursive strategies employed more recently by the CCC. Specifically, I offer an analysis of the discursive activity on their websites, caloriecontrol.org and caloriescount.com. Although these websites contained information about low-calorie and reduced fat products, I limited my analysis to the sections pertaining to low-calorie sweeteners. I accessed and printed the campaign's discourses on November 29, 2010.

Through this analysis, I seek to better understand the CCC's discursive contributions to public negotiations of risks related to low-calorie sweeteners in the human diet. I also consider how the Council's discursive strategies contribute to and complicate dominant risk ideologies and the implications of these strategies for various stakeholders.

Analysis

Central to the CCC's argument for low-calorie sweetener production and consumption was a focus on the locus of quantity. Arguments that employ locus of quantity represent rhetorical attempts to establish the value of a course of action by invoking assumptions that more is better than less (Perelman & Olbrechts-Tyteca, 1969). Focusing on loci of quantity are argumentative short-cuts. There is nothing inherently "better" about the sheer volume of items or people in agreement. Indeed, more of a low-quality item is not favorable. For example, a large number of participants in a volunteer projects that has little impact on the community does not make it necessarily better than a smaller group who has significant impacts in the community. Because more is not
always better, it is also important for rhetors to consider more complicated value-based issues related the locus of quality (Perelman & Olbrechts-Tyteca, 1969). However, arguments made on the locus of quality are often more complex and less readily accepted by audiences.

In this chapter, I use key examples from the CCC's online discourses to describe how the CCC used appeals to the locus of quantity. First, I argue that the CCC's focus on calories, body weight, and marketplace variety situated a need for the innovation of more low-calorie sweeteners. I then argue that these appeals to quantity were used to negotiate the authority of different stakeholders in contemporary food systems. Framed as innovators of new low-sweeteners, scientific and industry groups were situated as groups that helped consumers satisfy their demands for safe, low-calorie sweets. On the other hand, the framing of public health groups was not as clear-cut. These groups were positively framed when they agreed that the CCC's products were safe and negatively framed when they did not support the safety of the CCC's products. The CCC justified dismissing the negative evaluations of public health groups by pointing to the lack of consensus between organizations. This focus on consensus, or lack thereof, allowed the Council to ignore the actual quality of their products as a source of the disagreement.

Sweetening demand. Although the CCC identified dental health as a significant health issue in its discourse, obesity and its health complications, such as diabetes, were framed as the greatest risk to public health. "Approximately 69 percent of Americans are trying to either lose or control their weight. And for good reason," the CCC (2010c) wrote "It is estimated that 65 percent of adult Americans are overweight and 30 percent are obese (para. 3). Obesity was situated as the product of an individual's excessive
caloric intake. As the name of the trade association suggests, the CCC's solution for the obesity problem is centered on calorie control. The Council explained that, from a weight management perspective, it is not what people eat, but, rather, how much they eat that matters. Fewer calories, it argued, equated to less body weight.

**Tasty calories.** Weight maintenance was situated as a simple matter of calorie counting; however, the CCC (2010q) also claimed that counting calories can be challenging. It said that too often, people's natural desire for sweet foods sabotages their efforts to maintain or attain a healthy body weight. The CCC explained that for much of history fruits, honey, and sucrose were the only sources of sweetness and, as such, people would either satisfy their sweet craving with these caloric sweeteners and be overweight or deny themselves sweets to maintain a thinner physique. Because neither outcome was desirable, the CCC said that consumers demanded palatable, low-calorie sugar alternatives that would make the task of reducing dietary calories easier.

The CCC (2010c) explained that “low-calorie sweeteners, as part of an overall weight-control program, can help you reduce calories and therefore reduce weight” (para. 27). Sucrolose-sweetened products, for example, “satisfy the natural desire for sweet taste without extra calories…Because they taste good, people can improve the healthfulness of their diets without having to sacrifice the pleasure of eating sweet foods they enjoy” (CCC, 2010o, para. 1). The CCC also claimed that low-calorie sweeteners could help people eat more nutritious foods without going over their daily calorie needs. For instance, the CCC (2010d) said that, “The variety of foods and beverages sweetened with aspartame can help satisfy a pregnant woman’s taste for ‘sweets’ without adding extra calories, leaving room for more nutritious foods” (para. 21). These passages
suggested that low-calories sweeteners could help a variety of audiences satisfy their cravings for sweets, enjoy healthy foods, and eat more nutritious foods while minimizing their caloric intake. By appealing to variety, the CCC implied that the sheer number of sweeteners available to consumers was important to the management of risks related to obesity. The more low-calorie sweeteners available, the more likely it would be that someone could manage their health while enjoying palatable foods.

Based on the claim that consumers could satisfy sweet cravings while consuming minimal calories, The CCC argued that low-calorie sweeteners are desirable sugar substitutes. The Council (2010p) explained,

> Even cutting just 100 calories per day, such as substituting a low fat version of a favorite food or using a low calorie sweetener in place of sugar, could mean big changes in a person’s health and waist line... Those 100 calories add up to 10 pounds a year. (para. 5)

This claim was based on the fact that sugar, which has four calories per gram, and low-calorie sweeteners contribute to weight management differently. Although not exhaustive, the CCC offered several of direct comparisons of sugar and specific low-calorie sweeteners:

- The reduced caloric value (2.6 calories per gram versus 4.0 for sugar) of sorbitol is consistent with the objective of weight control. Products sweetened with sorbitol in place of sugar may be useful in providing a wider variety of reduced calorie and sugar free choices to people with diabetes. (CCC, 2010s, para. 8)
• Aspartame can reduce or replace the sugar and calories in foods and beverages while maintaining great taste. Thus, aspartame offers one simple step to help people move closer to achieving a more healthful diet. (CCC, 2010d, para. 8)

• Sucralose is not metabolized, thus it has no calories. It passes rapidly through the body virtually unchanged, is unaffected by the body's digestive process, and does not accumulate in the body. By replacing sucralose for sugar in foods and beverages, calories can be reduced substantially, or, in many products, practically eliminated. (CCC, 2010t, para. 9)

• Since HSH [hydrogenated starch hydrolysates] are more slowly absorbed, a portion of HSH in a food reaches the lower digestive tract where it is metabolized by naturally occurring colonic bacteria. This results in a reduction in the available calories and permits its use as a reduced calorie alternative to sugar. (CCC, 2010h, para. 8)

These passages also demonstrated the importance of quantity to the CCC's promotion of its products in relation to comparable-tasting sweeteners. These passages encouraged the reader to attend to issues of taste and caloric intake because within this framework, low-calorie sweeteners emerged as comparable to sugar in taste, yet better than sugar because they provide few or no calories. These comparisons are important because they serve to help the low-calorie sweetener industry gain market share by convincing people who eat sugar to eat their products instead.

**Variety that satisfies.** In addition to establishing a demand for low-calorie sweeteners based on their ability to sweeten foods without adding calories, the CCC appeals to a locus of quantity by appealing to variety. The CCC used variety to refer to
the sheer number of low-calorie sweeteners available to consumers and the various combinations of flavors available using different sweeteners. Both types of variety were used to promote low-calorie sweeteners to consumers trying to maintain or attain a healthy body weight.

The CCC (2010c) said that a variety of low-calorie sweeteners would "provide more choices when juggling calories" and "help you stay on your weight-control program by keeping your diet interesting and enjoyable" (para. 28). It meant that, "watching your weight no longer means eating carrot sticks and rice cakes" (para. 28). The CCC (2010w) also claimed that low-calorie ingredients increased the variety of foods health-conscious consumers could eat, including “chewing gum, candies, ice cream, baked goods, fruit spreads and canned fruits, fillings and frostings, beverages, yogurt and tabletop sweeteners” (para. 2). These passages equated a healthy diet without low-calorie sweeteners as boring, mundane, and lacking a variety of palatable options. Low-calorie sweeteners increased the number of foods available to health-conscious consumers. The quality of one's food experience was a matter of quantity, calories and variety. A healthy diet coupled with low-calorie sweeteners was interesting and enjoyable.

The CCC (2010j) also appealed to variety by promoting the synergistic properties of low-calorie sweeteners. Synergistic effects refer to the ability of low-calorie sweeteners to be combined in manners that complement the taste or texture of the other sweetening agents. There are many possible pairings and proportions in which sweeteners can be combined to create an unlimited set of flavor profiles. The CCC wrote that “having a variety of low-calorie ingredients available allows food manufacturers to choose the most appropriate ingredient, or combination of ingredients, for a given
product — the ‘multiple ingredient approach.’” (para. 2). The CCC explained that a multiple ingredient approach is important because “neither saccharin, aspartame, acesulfame potassium, neotame, sucralose nor any of the new sweeteners is perfect for all uses. However, with several low-calorie sweeteners available, each can be used in the applications for which it is best suited. Also, when necessary, manufacturers can overcome limitations of individual sweeteners by blending sweeteners together” (para. 5). These passages argued that it is valuable to have a large variety of sweeteners for consumers and manufacturers. In addition to the value that individual low-calorie sweeteners add to food practices alone, mixing multiple sweeteners provides consumers with an even greater range of flavors that will make foods more palatable without adding calories.

By framing variety as a key component of pleasurable and healthy eating, the CCC established a place for low-calorie sweeteners in the human diet. However, the CCC (2010h) explained that “Over half of these consumers [100 million Americans who reported consuming low-calorie products] would like additional low-calorie products to be available” (para. 20). Consumers were framed as agents in the marketplace with needs and desires that the industry seeks to fulfill. Indeed, the CCC (2010j) wrote that, “with increased knowledge about taste and technology, the food and beverage industry is on the verge of developing a wider variety of good-tasting, low-calorie and low-fat products to meet the growing needs and demands of American consumers” (para. 31).

A locus of quantity was important to the CCC’s promotion of low-calorie sweeteners. By situating healthy eating as an undesirable compromise between calories and flavor, the variety of low-calorie sweeteners available in the market was situated by
the CCC as a response to consumer demands. This framing of the relationship between consumers and manufacturers served a rhetorical purpose for the CCC because within this framework innovation is critical.

*Innovation in the name of variety.* Scientific innovation was framed as the method of meeting consumer demand for variety and low-calorie sweeteners. Most descriptions of the low-calorie sweeteners included a brief paragraph that described the products' origins and processing methods. For example, the CCC (2010x) explained that xyitol was “discovered in 1891 by German chemist Emil Fischer… [and] has been used as a sweetening agent in human food since the 1960s” (para. 1). In a later passage, the CCC said that “a French chemist first discovered sorbitol in the berries of the mountain ash in 1872. It occurs naturally in a wide variety of fruits and berries. Today it is commercially produced by the hydrogenation of glucose and is available in both liquid and crystalline form” (CCC, 2010s, para. 2). These passages highlighted the importance of human intervention in the discovery and production of sweeteners that please consumers. While it is true that some level of human intervention is required to consume any food (Lupton, 1996), these passages went further by suggesting that “nature” was not even necessary to consumption.

The CCC also addressed the processes associated with the development of low-calorie sweeteners. For example, the CCC (2010t) described the process of isolating and purifying steviol glycosides, the sweet parts of the stevia plant, as being "similar to ‘steeping’ tea leaves" (para. 1). This description demonstrates the ways in which the CCC balanced jargon associated with the production of low-calorie sweeteners with simple metaphors. Instead of omitting discussions of the role of science in the history of
low-calorie sweeteners, the CCC positively framed human intervention as a response to consumer demands. Considering that uncertainty surrounding an ingredient’s safety can have negative impacts on its success as a consumer good, the CCC could have omitted these sections. Such omissions may have heightened public skepticism, as many audience members were likely aware of the controversies that surrounded artificial sweeteners, including saccharin, aspartame, and cyclamate. By coupling discussions of technology with a simple metaphor, the CCC demonstrated an interest in sharing information with audiences representing a variety of backgrounds and levels of scientific literacies. It was important for the CCC to appear transparent in its discussions of sweeteners because the level of involvement humans have in the discovery and development of low-calorie sweeteners may be alarming to some audiences (Lawler, 1986). Indeed, “consumers have walked a fine line between feeling empowered by the calorie control sweeteners have provided,” de la Peña (2010) wrote, “and feeling anxious about sweeteners’ safety and possible health risks” (p. 4). The transparency positions the CCC as a socially responsible communicator seeking to ease the concerns consumers might have with the use of scientific innovation to increase the number of low-calorie sweeteners on the market.

**Responding to consumer demand.** In response to residual skepticism surrounding scientific and policy controversies concerning artificial sweeteners since the 1970s (de la Peña, 2010), the CCC sought to create certainty around the safety of their products. In this section, I describe how the CCC identified the roles of science, regulatory public health agencies, and the industry in ensuring that the sweeteners available to consumers are safe. I argue that the CCC’s description of stakeholder
responsibilities selectively situated science and industry groups as facilitating consumer
demands and public health agencies as unnecessarily obstructing consumers’ access to a
variety of low-calorie sweeteners. I reflect on how the campaign used appeals to
consensus to situate low-calorie sweeteners as safe products even in the midst of
disagreement.

**Scientific consensus.** Science was given the primary role of testing the safety of
food ingredients. For example, the CCC (2010v) wrote that, “More than 90 studies have
been conducted on the safety of Acesulfame Potassium and they have consistently shown
that this sweetener is safe for human consumption” (para. 2). Similarly, “Extensive
research has been conducted on neotame to establish its safety as a sweetening
ingredient” (CCC, 2010k, para. 6) and “sorbitol’s safety is supported by numerous
studies reported in the scientific literature” (CCC, 2010s, para. 13). These passages used
science to evidence the safety of sweeteners. As opposed to describing the findings of
these studies in-depth, the sheer quantity of studies was understood to be a marker of a
product's safety.

The CCC also appealed to the sheer number of scientific studies to situate science
as a risk reducer. For example, the CCC (2010r) wrote that,

Saccharin has been the subject of extensive scientific research. It is one of the
most studied ingredients in the food supply. Although the totality of the available
research indicates saccharin is safe for human consumption, there has been
controversy over its safety. The basis for the controversy rests primarily on
findings of bladder tumors in some male rats fed high doses of sodium
saccharin… More than 30 human studies have been completed and indicate
saccharin's safety at human levels of consumption... Saccharin is not metabolized (it passes through the body unchanged) and does not react with DNA (nucleic acid present in all living cells), meaning that saccharin lacks two of the major characteristics of a classical carcinogen. (para. 7-11)

This passage presented claims that saccharin is a risky ingredient and counter-arguments against their opposition. The two-sided argument structure used here and elsewhere on the website reinforced the notion that the CCC was a transparent communicator that wanted to share all of the information available about its products. However, the study's findings that saccharin was unsafe were quickly refuted by appealing to the sheer number of studies that have failed to find a causal relationship between saccharin and cancer.

In addition to there being a large number of studies supporting the safety of saccharin, the CCC presented the studies in a manner that constructed scientific consensus. By not describing the nuanced methods or samples of these 30 studies, the CCC skimmed over discussions of the value of these studies' contributions to scientific understandings of saccharin. While it may be true that the studies concluded that saccharin is safe to consume, it is likely that their findings and conclusions did not perfectly mirror each other. The CCC's generic descriptions of the 30 studies constructed consensus among the studies, and implicitly suggested that quantity is an important indicator of safety, not quality.

By representing several studies aimed at developing and testing saccharin's safety, the CCC also refuted risk society's skepticism of scientific and technological advancement. Science was framed as having a valuable role in contemporary food systems because it innovated and tested low-calories sweeteners. By establishing
science’s legitimacy in public negotiations of risk, the CCC attempted to build certainty around its low-calories products, which are, for the most part, developed using science.

Public health (dis)agreement. In addition to drawing on scientific consensus, the CCC appealed to consensus to negotiate the role of public health and regulatory agencies in contemporary food systems. However, the use of the appeal to consensus to prove the safety of low-calorie sweeteners was not as straightforward as it was with science. In this section, I argue that the CCC showcased agreement among public health organizations when the agencies’ evaluations were favorable low-calorie sweeteners. However, I also demonstrate how the CCC highlighted the lack of consistent consensus to negatively frame public health agencies when their decisions restricted the use of low-calorie sweeteners.

The positive opinions and evaluations of public health agencies from around the world were used to support the safety of low-calorie sweeteners in the human diet. For example, the CCC (2010v) wrote that,

The internationally recognized Joint Expert Committee on Food Additives of the Food and Agriculture Organization (FAO) of the United Nations and the World Health Organization (WHO) repeatedly examined and evaluated data from Acesulfame Potassium studies and deemed it harmless for use in food. Similarly, the U.S. Food and Drug Administration (FDA) has approved Acesulfame Potassium as safe for consumption as a food additive. The Scientific Committee on Food of the European Union has also come to a positive assessment along with national health authorities in various countries such as Canada, Australia and Japan. (para. 10)
The CCC adopted a similar appeal to consensus as it talked about the regulation of other low-calorie sweeteners. For example, the CCC (2010n) said,

the U.S. Food and Drug Administration (FDA) has accepted the 'Generally Recognized as Safe' (GRAS) notification for tagatose. It was launched in the U.S. market in May 2003, and is also used as a general-purpose sweetener in Korea, Australia and New Zealand. Tagatose is manufactured and marketed worldwide.

(para. 2)

These passages reflected how the CCC focused on a locus of quantity, wide-spread consensus, to support the safety of its products. It reasoned that its products must be safe if so many countries have had their public health agencies permit the use of these low-calorie sweeteners.

As a marker of safety, the appeal to consensus was important because it established norms for public and private risk management. At the end of each sweetener's webpage in the "Sweetener and Lite" section, the CCC described the regulatory status of the respective sweetener. Many of these sections appealed to complete consensus to support the safety of their products. The CCC provided quotes from various health agencies that agreed that consumers should eat their products. For instance, the Council (2010d) wrote that “to help people achieve a more healthful lifestyle, the U.S. government provides ‘Dietary Guidelines for Americans,’ which encouraged consumers to ‘Choose and prepare foods and beverages with little added sugars or caloric sweeteners’” (para. 9). Similarly, the CCC said that the WHO advised the public to replace nutritive sweeteners with low-calorie alternatives, which the WHO said “can reduce or replace the calories in foods and beverages while maintaining great
taste, offering one simple step to help people move closer to achieving a more healthful diet” (as quotes in CCC, 2010d, para. 9). These guidelines supported the CCC’s argument that risk management was a private affair. Consumers should eat fewer calories and added sugars and eat more low-calorie products to reduce the taste-calorie dilemma. The parallelism between dietary guidelines set by multiple public health organizations and the CCC’s call to action served to reinforce the credibility of each rhetor. The public health guidelines were more credible because multiple agencies made similar suggestions. Further, the Council appeared credible for knowing this information and responsible for sharing it with audiences.

By grounding safety in public health consensus, the CCC also appealed to public health organizations that had yet to accept a new product as safe for consumption. Consensus among multiple agencies could be used as a normative cue for policy makers. For example, of Erythritol, a low-calorie sugar alcohol, the CCC (2010f) said that,

Petitions have been submitted to additional governmental agencies throughout the world to expand the use of erythritol. It has already been approved for use in foods in more than 50 countries, including Canada, US, Brazil, Mexico, Australia, and the European Union. (para. 9)

Similarly, the CCC (2010m) wrote,

A petition for alitame's use in a broad range of foods and beverages has been filed in the U.S. Alitame is approved for use in a variety of food and beverage products in Australia, New Zealand, Mexico and the People’s Republic of China. Approval also is being sought worldwide. (para. 8)
Consensus was privileged by these passages. It was implied that multiple countries have accepted these products, so it is likely that those which have not either will or should also approve the erythritol or alitame for use. Essentially, the CCC reasoned that if many believe an ingredient is safe, then it is safe. The messages failed to provide audiences with any useful information about the relative merits of the regulation or policy-making process. Aimed at consumer audiences, this appeal to the quantity of agencies approving of sweetener consumption for the public could be used to promote private decisions to consume sweeteners. On the other hand, aimed at policy makers this appeal to consensus and quantity can be understood as representing an argumentum ad populum (Walton, 1989). This fallacy is committed by rhetors trying to convince an audience that a conclusion is true because it is widely accepted by their peers, not because it is supported by strong and relevant evidence. The CCC's ambitions to shape private and public risk management in these passages reflected the push and pull that trade associations can exert on the food industry.

While consensus among public health agencies was used to support the CCC’s argument for the role of low-calorie sweeteners in the human diet, the Counsel could not always rely on consensus because there was not always consensus among some of the most widely recognized agencies. This disagreement can be seen in the CCC's description of saccharin's regulator history. It explained that,

The saccharin controversy initiated a long overdue review of U.S. food safety laws. It resulted in a food policy report from the National Academy of Sciences that recommends thorough revision of the U.S. food regulatory system, which the report describes as "complicated, inflexible and inconsistent in application."…In
1977, Congress passed a moratorium preventing an FDA-proposed saccharin ban. The moratorium has been extended seven times based on the scientific evidence, the counsel of qualified professionals, and the support of consumers. At a 1985 Senate hearing, then-FDA Commissioner Frank Young supported an extension of the moratorium, noting that FDA has less concern about saccharin than in 1977. The Commissioner added, "the actual risk, if any, of saccharin to humans still appears to be slight."...In 1991, the FDA formally withdrew its 1977 proposal to ban the use of saccharin. And, on December 21, 2000, then-President Clinton signed a bill that removes the warning label that had been required on saccharin-sweetened products in the U.S. since 1977. Government, scientists and industry are now all in agreement that saccharin is safe. (CCC, 2010r, para. 30-31)

This narrative of the saccharin controversy demonstrated that the riskiness or healthfulness of products was constantly under review. Public health organizations were framed as credible agents in this process. However, their lack of consistent consensus and need to revise or recant their decisions also situated them as imperfect decision makers and, as such, potential barriers to consumers’ access to safe, low-calorie sweeteners. This framing of public health agencies was consistent with those used by lobby groups representing saccharin in the past (for review see de la Peña, 2010). Razook and Ferguson (2008) explained that saccharin maintained its place in the market because lobby groups told consumers that the FDA was threatening their freedom to choose healthy, sweet products. In the face of strong public criticism, not necessarily scientific evidence, de la Peña (2010) argued that the FDA decided to revise its decision to ban saccharin.
**Industry facilitators.** In the face of imperfect guidelines and restrictions, the CCC positioned itself as helping consumers manage their health with a variety of safe, palatable, low-calorie foods. To facilitate the satisfaction of consumer demand, the CCC gave industry groups, including itself, the role of petitioning the public health agencies to review the safety of ingredients to get new sweeteners approved. The CCC (2010h) explained that “there are numerous petitions pending today for government approval of low-calorie sweeteners, fat replacers and other low-calorie ingredients. And that means even more products will be available soon to help consumers reduce calories, fat and cholesterol” (para 1). The CCC specifically mentioned petitions that were recently filed in the U.S. for the general food and beverage uses of alitame (2010l, para. 1) and increased GRAS limits for maltitol (2010i, para. 10). The CCC assumed that these petitions would be approved by public health agencies and available to consumers soon. The CCC (2010l) went as far as to claim that a “petition for regulatory approval demonstrates its [alitame’s] safety for human consumption” (para. 7). The notion that petitions from the industry would automatically be accepted was interesting considering the self-defined role of industry groups as facilitators of consumer demand.

The CCC identified industry groups as playing a role in policy development; however, its rendition of their role proposed an overly simplistic relationship between lobbyists, science, and regulatory bodies. Though the CCC located industry groups in the political arena, they did not discuss the politics of food or these groups’ roles as part of a struggle to define healthy foods. That is, the CCC did not discuss how issues of power can impact health policy. With so many interest groups struggling for the authority in public negotiations of health risks, it can be difficult for a single group to attract public
attention and policy makers’ attention (Baumgartner & Leech, 2001). The collaboration of multiple organizations to form trade associations affords each corporation more discursive resources, including lobbyists and financial backing, resources which increase the likelihood of a message being heard. Baumgartner and Leech (2001) found that, in 1996, "businesses and trade associations, taken together, spent over nine times more money on lobbying than citizen groups and nonprofits" (p. 1197). These vast financial resources combined with careful presentation of arguments means that these industry groups are capable of being heard more frequently and that their messages will more likely impact public understandings of risk. The CCC has exerted a great deal of rhetorical resources lobbying the FDA and other organizations to approve their products. For example, the CCC itself reported spending more than $800,000 in one quarter in 1977 lobbying against the ban on saccharin (Hrebenar, 1997). Hind, Kay and Vaerla (2008), however, argued that the numbers reported by lobbying organizations are conservative because the Lobby Disclosure Act does not account for the money spent to influence public opinion and ultimately policy. As such, it is difficult, if not impossible, to determine the extent of the resources, financial and others, that the CCC put into developing its online discourses and shaping policies and perceptions surrounding its products.

The CCC’s description of trade associations and industry voices in public negations of risk represented a selective construction of reality. Though they have a significant role in policy, the CCC elected to explicitly represent trade associations and industry as petitioning health organizations to review relatively new sweeteners. It opted not to address their roles in more heated debates. For example, the aforementioned story
about the saccharin’s policy debates was very different from that told by Razook and Ferguson (2008) or Nestle (2006). The CCC did not mention their highly criticized role in the policy debates surrounding saccharin. They did not mention that they were the organization that petitioned the FDA to approve saccharin’s safety when the FDA first banned it in 1977 and then again in 1996 and 1998 to removing warnings concerning saccharin’s risk as a carcinogen. Their story made it appear as though the FDA simply engaged in poor decision making that the CCC helped the government fix. Saccharin’s riskiness or safety as an ingredient is not entirely known. As such, from a scientific standpoint, it is unclear if the CCC was right or wrong to petition the FDA in these cases. Rather, I am suggesting a level of curiosity from a rhetorical standpoint regarding the CCC’s selective representation of their role. By selectively representing their role in public negotiations of health, the CCC managed their reputation and that of other industry groups lobbying the government. Industry groups appeared as facilitating consumers’ access to a variety of low-calorie sweeteners, as opposed to health barriers.

Conclusion

I have argued that the CCC’s reconciliation of consumers’ demands for low calorie, tasteful foods with a variety of low-calorie sweeteners was used to shape concerning the roles of science, public health agencies, and industry groups in public negotiations of health risks. Whereas science was seen as providing consumers with the variety of safe, low-calorie sweeteners they demand, public health agencies were positioned as imperfect decision makers and, as such, barriers to consumer satisfaction. Trade associations and industry groups were described as facilitating consumers' access to a variety of low-calorie sweeteners as their petitions bridge the information exchanged
between science and public health agencies. In this section, I explore the multiple theoretical implications that arise from my analysis and the potential implications of the CCC’s discursive contributions to public understandings of low-calorie sweeteners.

**Risk ideologies.** The CCC’s arguments for low-calorie sweeteners fit within, but also complicate the ideology of nutritionism (Pollan, 2008). Consistent with this dominant risk ideology, nutritional risks were positioned as important considerations when making eating decisions. The CCC situated caloric balance as the most important risk concern for the public. By focusing on calories, the CCC was able to capitalize on recommendations that consumers moderate their intake of discretionary calories. Unlike sugar and high fructose corn syrup (HFCS), which contribute approximately 4 calories per gram (Drummond & Brefere, 2007), the sweeteners the CCC represented contributed few to no calories when consumed. The CCC reflected and served to reify audience's preoccupation with health and, specifically obesity, while making decisions regarding consumption.

By focusing on calories, the CCC’s discourses also reinforced the application of scientific evidence in everyday consumer decisions, which encouraged audiences to return to their website for nutritional information and tools. On the other hand, the CCC’s discourses complicated Pollan’s (2008) description of nutritionism. Unlike Pollan who argued that nutritional sciences and risk have taken precedence over issues of taste or tradition related to food decisions, the CCC situated the palatability of healthful foods as a central issue. It was valuable for the CCC to emphasize the taste as an important criterion for consumers because doing so maintained a need for their products in the first
place. If sweetness was unimportant, there would be no real need to consume sweeteners—not sugar, HFCS, or low-calorie sweeteners.

The contrast between the CCC's discursive choices and the ideology of nutritionism (Pollan, 2008) can also be considered a reflection of the CCC's strategic framing of the tensions that comprise consumers' worlds. By drawing on both notions of risks to palatability and nutrition, the CCC also identified low-calorie sweeteners as similar in taste yet healthier than sweetening agents with which consumers were already familiar, particularly table sugar. This is a valuable strategy because, when making food decisions, consumers find familiar risks less severe than unfamiliar ones (Grunert, 2005). This framing of risk privileged the "familiar" risks of table sugar, those related to excess calories and obesity. The CCC was easily able to counter these "familiar" risks by describing the taste-profile and low-calorie of nature low-calorie sweeteners such as aspartame, saccharin, sucralose, and various polyols. The CCC's framing of sweetener risks, however, evaded comparisons to sugar in terms of "less" familiar risks associated with the CCC's products, such as those concerns that arise from the processes that go into obtaining sweeteners or the cancer concerns that arose from policy debates in the late 20th century.

My analysis also spoke to the framing of stakeholder responsibility. Consumers were held responsible for obesity risks because they were considered to have control over their caloric intakes. Risk-adverse consumers were told to replace nutritive sweeteners with low-calorie products. This locus of responsibility is consistent with risk ideologies that position contemporary risks as individualized problems and allow industries to regularly off-load responsibility on to the public (Adam, Beck, & van Loon, 2000).
By highlighting the usefulness of low-calorie sweeteners in mitigating obesity and by not mentioning any negative effects of low-calorie sweeteners, the CCC denied any role they would have in the negative health of consumers. While this strategy promoted low-calorie sweetener consumption, it is not the most useful or sustainable rhetorical strategy. Its narrow focus on calories and obesity and denial of other health concerns made the CCC susceptible to skepticism from consumers who recalled the public health debates surrounding artificial sweeteners. Also, the focus on calories and obesity was not sustainable. If new research findings claiming that low-calorie sweeteners pose risks to consumers outside of weight related issues were published, then the CCC’s would need to develop a new strategy to respond to these concerns.

I argue that the CCC already developed a secondary response to future controversies. By situating consumer demand as the catalyst of scientific development and the Council's actions, the CCC held consumers responsible for the actions of science and the CCC. Without consumer demand for low calorie sweeteners, science would not need to develop new products and the CCC would not have to petition public health agencies to approve new ingredients. This evasion of responsibility is consistent with a neoliberalist framing of risk (Harris 2009, Beck 2000). Consumer demands were framed as driving the food industry, health agencies, and scientific actions, not health or safety concerns and, especially, not corporate bottom lines. The CCC’s construction responsibility also contributed to understandings of science and the food industry’s roles in public health negotiations. If science and industry groups are considered to be in constant service to the public then negative consequences that may emerge from their actions may be consider the fault of the public.
This rhetorical framing of responsibility and agency in contemporary food systems is an interesting uptake of Beck’s (1992) reflexive modernity; this reflexivity would serve to help the CCC if a new health concern were to emerge in the future. Reflexivity usually leads to skepticism of science and technology due to the public’s recognition that human actions to reduce risk actually often produce risks. However, in the face of a new information that ascribes health risks to one of the CCC’s products, the CCC’s representation positioned consumer demands to reduce risk associated with obesity as the fuel that produced the risk in the first place. Consumers themselves would be the point of scrutiny as opposed to science or the industry.

Miller (2005) claimed that although risks appear to be negotiated publicly for the general public’s interest, there are often private interests working backstage. Unlike the rhetorical strategies employed by other industry groups, the CCC described consumer agency as being enabled and constrained by a greater social structure. Science, public health agencies, and the industry were represented as major stakeholders whose actions impacted consumers’ ability to make consumption and health decisions. Science was identified as having the responsibility of producing new products and testing their safety. The CCC suggested that, though a couple sweeteners’ histories were marked by controversy, science has produced and repeatedly proved the safety of low-calorie sweeteners. Similarly, public health agencies were identified as gatekeepers and held responsible for balancing the public’s access to the variety of low-calorie sweeteners with their demand for safe foods. However, the constantly changing judgments of these public health groups were constructed as a hindrance to meeting consumer’s needs. The organizations appeared to either support products which science and industry groups
already knew were safe or interfere with consumers’ access to products which were ultimately identified as safe. By constructing public health organizations as always aligning with science and industry opinions but also as hindrances to consumers’ access to safe foods, the CCC identified the role of industry groups as facilitating consumers’ demands by constantly petitioning public health agencies to approve their “healthy and safe” products.

The CCC’s identification of multiple stakeholders and their respective responsibilities in contemporary foods systems, though limited, was commendable. Unlike other trade associations, which have been found to have omitted or minimized these stakeholders’ roles (Cummings, 1984), the CCC attempted to represent the wrangle of the market and highlight the actors who enable and constrain consumer decision making. However, their representations were also questionable; the CCC did not fully reflect the politics that comprise contemporary food systems or risk negotiations. It was especially curious that the CCC did not describe disagreements within or between science or industry groups. Instead, CCC made it appear as though changes in public health decisions were results of these organizations lack of consensus. By highlighting public health agencies’ regular review and changing of policy-decisions negatively, the CCC minimized the competency of public health agencies contributions to food systems. The CCC's rhetorical strategies were compatible with neoliberal discourses which de-emphasize or reject government intervention and, instead, focus on negotiating risks by encouraging free-market methods and less restricted operations of industry (Waters, Seidell, & Swimburn, 2010).
It is also problematic that consumers were ultimately held responsible for health risks. Low-calorie sweeteners currently in the market place represented products developed for consumers, which ignored the notion that manufactures produce items that are then consumed by the public. It also ignores the notion that industry groups manage demand through advertising and the introduction of new products (Thomas, 1991). Indeed, Cummings (1984) claimed that consumer demand for more low-calorie sweeteners increased with the addition of new low-calorie sweeteners into the market place. The relationship between supply and demand is not as simple as the CCC’s discourses suggested. Nestle (2003) and Simon (2006) argued that it is in the interest of the food industry to place the responsibility of risk negotiation on individuals because it mitigates the need for industry action and governmental regulation.

**Locus of quantity.** In addition to the rebalancing of risk, I have demonstrated how CCC used appeals to locus of quantity and two-sided arguments to advocate for low-calorie sweeteners. Consistent with Perelman and Olbrechts-Tyteca’s description of locus of quantity, sheer variety and consensus were used to establish the safety of low-calorie sweeteners. It is important to note that these quantities were qualified though. For example, consensus was only positive and used to develop the CCC’s arguments when there was agreement that low-calorie sweeteners were safe. In addition to short-cutting discussions about evidence concerning health, the sheer number of low-calorie sweeteners available to consumers and consensus among experts became catalysts for action. By omitting discussion of controversy and highlighting the sheer number of people, studies, and organizations supporting low-calorie sweeteners, the CCC attempted
to influence perceptions of safety to increase consumers’ consumption and policy makers’ acceptance of these products.

The CCC’s locus of quantity was not always as clear-cut as Perelman and Olbrechts-Tyteca’s (1963) descriptions of the argument structure. In particular, fewer calories were situated as more desirable based on their connotative meanings. Within risk societies calories are considered negative because they represent the potential for weight gain or the prevention of weight loss (Lupton, 1996). This finding highlights how rhetors can strategically maneuver between a locus of quantity and quality to highlight the strengths and omit the weaknesses of their argument. While the CCC’s appeal to the connotative meanings of low-calorie sweeteners appears to represent a locus of quality as opposed to a locus of quantity, it is important to also consider how drawing on these connotative meanings and quantities actually negates considerations of food quality. Fewer calories actually could be understood to represent increased possibilities for consumption. Unlike, other food industry and public health appeals that advocate for moderation (Simon, 2006), the CCC suggested that, by replacing nutritive sweeteners with low-calories sweeteners, people could consume more of the foods they like. Indeed, replacing foods with low-calories alternatives will reduce a person’s caloric intake and may result in weight loss if a person consumes a consistent amount of food. However, low- and reduced-calorie foods still have calories. A person cannot consume large amounts of them with impunity. The CCC’s appeal to increase consumption based on the negative connotation of calories still ignored discussions of food quality.

The CCC’s appeals to consensus could be understood as attempts to construct certainty about their products’ safety. This appeal to consensus and certainty was
markedly different from persuasive attempts those used in the past by the CCC and by other industries. In the face of the FDA’s ban on saccharin 1970s, the CCC constructed scientific uncertainty to question the FDA’s regulation of saccharin by claiming that FDA based their decision on faulty information and, in doing so, violated consumers’ freedom of choice (Cummings, 1984; de la Peña, 2010). CCC then used this uncertainty to mobilize consumers to write disapproving letters to the FDA and other opinion leaders about the proposed ban on saccharin. The CCC’s current appeal to certainty was also inconsistent with the rhetorical strategies used by other industry groups to emphasize uncertainty in scientific findings and discord among public health groups (Michaels, 2008; Michaels & Monforton, 2005; Michaels, Monforton, & Lurie, 2006; Oreskes & Conway, 2010).

Michaels (2008) suggested that industry groups fluctuate between promoting scientific certainty or uncertainty in response to marketplace demands. The differences between the rhetorical strategies used by CCC and the claims made by others may reflect and respond to the different market place pressures experienced by industries at a given time. Even though the CCC and other industry groups share a common purpose of promoting products (Simon, 2006), the rhetorical scenes in which they were acting were different. Other trade associations and the CCC’s earlier discursive attempts to construct uncertainty around their products were responses to heated debates over their products’ safety (Cummings, 1984; de la Peña, 2010; Michaels, 2008; Michaels & Monforton, 2005; Michaels, Monforton, & Lurie, 2006; Oreskes & Conway, 2010). Oreskes and Conway (2010) argued that industry groups benefit from drawing on uncertainty and risk
because doing so prolongs risk decisions until “sound” research is obtained (i.e. research that names the product safe) and keeps issues or products on the public's mind.

The rhetorical texts I examined in the current study were produced in 2010. While residual skepticism may have been on the minds of some consumers (de la Peña, 2010), there were no major scientific or public health controversies concerning low-calorie or no-calorie sweeteners specifically at this time or in recent history that would promote uncertainty. As such, the campaign's appeal to certainty can be seen as a discursive strategy to limit controversy and remove itself from continued public and scientific scrutiny. No new research or investigations need to be conducted if a product is deemed safe.

**Argument structure.** In addition to appealing to a locus of quantity, the CCC used two sided-argument structures to identify points of contention between competitive sweeteners and within scientific and policy debates. Using these structures the CCC was able to refute the opposition in a manner that made it appear as though there was consensus surrounding the safety of low-calorie sweeteners. Two-sided arguments work best with informed audiences or those that are likely to be exposed to counter-arguments (Lidstone & MacLennan, 1999). The CCC’s argument structure was more likely to effectively persuade audiences that were familiar with the sweetener market or the controversies that surrounded low-calorie sweetener than would be a one-sided message that only highlighted the positive attributes of their products. This structure has been found to increase consumers’ perception of rhetor believability because audiences expect advertisements to adopt a one-sided argument (O’Keefe, 2002). More often than not, the CCC referenced and provided citations to sources that did and did not support the safety
of their products, which provided audiences with a means of accessing a more complete description of the counter-argument.

Though the CCC provided a fair representation of the controversial history of low-calorie sweeteners, their rhetorical strategy was also meant to persuade. Indeed, when presenting information about scientific and policy debates, the CCC developed the arguments so that its products always emerged as being safe and healthy. The persuasive intent of the structure can also be seen in the comparison of low-calorie sweeteners to other sweeteners. The CCC positioned information concerning its products in relation to discussions about its competition. Descriptions of scientific and policy controversies were separated spatially from discussions that compared and contrasted low-calorie sweeteners and sugar. By separating these discussions, the CCC circumvented comparisons that would not result favorably for many of their products. The CCC could successfully argue that low-calorie sweeteners were better than sugar, which contains 4 calories per gram, when the argument was limited to the risks of excess calories and obesity. However, because most of the products represented by the CCC were artificial and sugar is considered natural, the CCC would have fared less favorably in an argument comparing production of the two product categories.

This study identified the two-sided argument structure as a rhetorical strategy that the industry used. It is likely that other trade associations could apply this method to their public relations and marketing campaigns. Indeed, previous public relations research has shown that two-sided messages with refutation are 20% more likely to persuade audiences in favor of the rhetor than is a one-side message (Allen, 1991). However, there may be limitations to the success of a two-sided argument structure with
references because, if counter-positions are unsuccessfully refuted, they make the rhetor’s advocacy more vulnerable to scrutiny (Duhé, 2007). Two-sided messages were used by the CCC to recount the controversial histories of their products; they did not employ this strategy to discuss contemporary controversies. When saccharin’s safety was being questioned, the CCC did not employ a two sided message structure. The effectiveness of two-sided messages with refutation structure in the midst of a policy or scientific debate deserves further attention.

**Practical implications for stakeholders.** An analysis of the practical implications of the CCC’s discourses for stakeholders demonstrates the politics of sweeteners. The CCC’s discursive goals were to provide an effective channel for communicating pertinent research and information to its members, the public, and government officials and to provide audience with tools to manage or attain and healthy body weight. Though their presentation of information often adopted a two-sided message structure, the conclusions were the same: expert consensus demonstrates the safety of low-calorie sweeteners and people want lower calories and sweet food, so more low-calorie sweeteners should be developed to satisfy consumers’ demands. The CCC and the industries it represented stood to gain financially from this message because influencing favorable understandings of low-calorie sweeteners would maintain, if not increase, their consumption. Demand would remain consistent or increase for the low-calorie sweeteners already in the marketplace and potentially support the entrance of new sweeteners.

FDA decisions have an enormous impact on the American economy as well as on consumer health (Mercola & Pearsall, 2006). Simon (2006) claimed that food
manufacturers and promoters share goals of minimizing corporate responsibility and governmental regulation. This analysis demonstrated that the CCC respected the FDA, WHO, and other governmental agencies enough to present their evaluations of low-calorie sweeteners. However, it also revealed how the process of regulation can be used to frame governmental regulation as a hindrance when their evaluations were less than favorable for industry interests. Because regulating food additives involves consideration of changes in the political environment, scientific findings, and the marketplace, the regulation of consumer products in naturally a continual process (Cummings, 1983). Changes in decisions could mean faulty or negligent decision making, as the CCC suggested, but it could be also understood to represent responsible reviews and revisions demonstrated by new science. Framing the FDA as a hindrance to consumers served to reduced audience’s perception of the government’s authority to regulate public health and the market place. Public health agencies should attempt to make their risk assessments seem as intentional acts, particularly if the agency is likely to be called upon to later defend a decision.

The impact of the CCC's discourses on consumer health by encouraging the consumption of low-calorie sweeteners, whether one focuses on obesity or cancer, is uncertain. However, the CCC’s influence on consumers’ understandings of personal and public risk assessment and decision making processes was more pertinent to this essay. The CCC framed obesity as the most important risk associated with sweetener consumption. The CCC downplayed the health risks that have stirred the scientific and regulatory controversies. By framing sweetener consumption as an issue of body weight and as such caloric intake, the CCC was able to promote low-calorie sweeteners over
sugar. However, this framing ignores the complex and political histories and health effects of both of these sweeteners. More favorable impressions of a food additive held by the public, regardless of their validity, can influence policies surrounding foods with those additives (Nestle, 2003). Simply put, if low-calorie sweeteners are considered safe, and soda and cookies containing low-calorie sweeteners taste good, the public is more likely to eat these foods and feel safe in doing so. If they feel safe doing so, they are less likely to petition the government to regulate low-calorie sweeteners.

**Concluding thoughts.** The discursive activities of individuals and organizations fighting to contribute to public understandings of how to manage food risks represent a politics of discourse (Blue, 2010). Beck (1999) argued that "in a risk society the politics and subpolitics of risk definition become extremely important" because "risks have become a major force of political mobilization" (p. 4). While the CCC’s current discursive activities likely do not mirror those implemented when the FDA proposed a ban on saccharin, it still served as a force of political mobilization by framing consumers and industry groups as responsible agents in public negotiations of risk and public health agencies as inadequate. The responsibility given to consumers to manage their health and affect public health is not without strings. It is inevitable that the science surrounding sweeteners and risk will shift, and, subsequently, controversy will again erupt. It is important for the public to consider how industry discourses enable and constrain the conditions of consumer responsibility and the manners in which it is enacted before the industry attempts to mobilize their participation.
Chapter Six: Conclusions

The intimate, political connections between food systems and risk discourses are often taken for granted (for review see Lien & Nerlich, 2004). With this dissertation, I explored the rhetorical strategies employed by three different trade associations representing the sweetener industry. Identifying these strategies allowed me to describe these rhetors’ contributions to public negotiations of food, health, and risk.

In Chapter One, I situated the ideological frameworks that shape risk societies within the complex politics of contemporary food systems and risk regulation. In Chapter Two, I reviewed how rhetoric is both a tool for rhetors attempting to contribute to public negotiations of health and for audiences seeking to uncover the means of persuasion being employed by various rhetors in discussions about food risks. Based on my review of the literature, I posed three research questions to focus my investigations of these associations’ messages:

RQ 1. How do trade associations representing the sweetener industry provide a symbolic repertoire for identifying, making sense of, and managing risks associated with sweeteners and, if so, how?

RQ 2. How, if at all, do these discursive strategies reflect, contribute to, or distract from dominant risk ideologies related to food and health?

RQ 3. How do particular stakeholders benefit more or less from these discursive strategies?

To answer these research questions, I preformed case studies of the discursive contributions of three trade associations representing the sweetener industry using close-textual analysis (CTA). In Chapter Three, I identified fallacious reasoning and appeals to
expertise as central to the Corn Refiners Association’ (CRA) representation of high fructose corn syrup (HFCS). In Chapter Four, I argued that the Sugar Association (SA), a trade association representing the sugar industry, used ambiguity while redefining “the natural,” which served to include sugar only and exclude both natural and unnatural competing sweeteners considered. Finally, in Chapter Five, I found that the Calorie Control Council (CCC), which represented low-calorie sweeteners, used appeals to consumers’ demands for a variety of safe, low-calorie sugar alternatives as a means of repositioning the responsibilities of key stakeholders.

In this concluding chapter of the dissertation, I identify reoccurring and forceful rhetorical patterns within and across the discourses produced by the CRA, SA, and CCC. I begin by responding to each research question. I summarize how the arguments, stylistics, definitional tactics, and message structures that mark the CRA, SA, and CCC’s discourses contribute to understandings how to identify, make sense of, and manage risks related to sweeteners. Then, I discuss how these discursive themes reflect and respond to dominant risk ideologies and the needs of various stakeholders. After responding to the research questions, I discuss how the case study findings contribute to theoretical, practical, and ethical understandings of industry discourses in risk societies. Then, I describe the limitations of my dissertation and identify areas for future research. Finally, I conclude by reflecting on my role and growth as a researcher and making a call to action for food communication scholarship.

Identifying, Making Sense of, and Managing Risks

Research question one asked, “do trade associations representing the sweetener industry provide a symbolic repertoire for identifying, making sense of, and managing
risks associated with sweeteners and, if so, how?” In this section, I describe how the trade associations’ (1) used evidence to identify risks related to sweeteners, (2) situated the responsibility for risk management on consumers and to some extent industry, and (3) represented the relationship between sweeteners strategically to make-sense of risks. Because these rhetorical strategies were used in concert with one another, the themes I describe can be better understood as descriptive snapshots of discursive webs, rather than as mutually exclusive categories.

**Identifying risks.** As each trade association developed their argument for the safety of their sweetener, they privileged knowledge systems and employed evidence differently. Consistent with dominant risk ideologies (Crawford, 1985; Pollan, 2006, 2008), the trade associations focused on the role of nutritional evidence in public negotiations of food risk. Scientific evidence and consensus were used to support these arguments; as such, each association reflected and reified rational models of risk taking.

All three trade associations identified excessive caloric intake as a serious nutritional risk and situated obesity as a primary public health concern. The SA and the CRA both minimized the relative caloric contributions of their products by emphasizing how few calories are in a serving of their product and by demonstrating the levels of sweeteners present in foods that would traditionally be considered low-sugar. They repeatedly told audiences that their products *only* had 4 calories, which, they reasoned, was not a significant portion of the 2,000 recommended calories for the average person’s daily consumption. They also selectively represented low-calorie foods, such as spaghetti sauce, salad dressing, or bran cereal to demonstrate how difficult it is to consume too much of their products. The SA also used scientific evidence to promote the
consumption of sugar. The SA’s discourses minimized the caloric contributions of sugar in the human diet with statements such as “Nature's very own sweetener has only 15 calories in a teaspoon” (2010q, para. 2). According to the SA and the CRA calories were important to the negotiation of risks for all food decisions, not simply those related to choosing sugar or HFCS. The CCC also situated sweetener consumption within a framework of caloric intake, but it used the frame to promote its products. Consumers were told that they could replace caloric sweeteners, such as sugar or HFCS, with low-calorie sweeteners to satisfy their desire for sweetness and variety while maintaining or losing weight. Unlike the CRA and the SA who used calories to equalize the playing field, the CCC focused on calories to highlight and distinguish its products from other ingredients.

To address the controversy surrounding sweeteners in the human diet, the CRA and CCC appealed to consensus to evidence the safety of their respective sweeteners. The CRA privileged scientific consensus as the primary form of evidence to make risk decisions. With scientific consensus as an indicator of the truthfulness of a claim, the CRA proceeded to argue that there was consensus in the scientific community regarding the healthfulness of HFCS. The CRA also used appeals to consensus to indicate expertise. The CRA's representation of a healthy discussion about HFCS gave authority to experts. Expert sources were defined as individuals from the scientific communities, public health agencies, or the general population who supported the argument that HFCS was a safe and valuable sweetener.

The CCC also appealed to consensus to demonstrate the safety of alternative low-calorie sweeteners. Science was given the primary role of testing the safety of food
ingredients. Though the CCC developed two-sided argument structures and provided resources representing opposing arguments, the CCC refuted these argument in such a manner that low-calorie sweeteners always emerged as safe alternatives to sugar. When discussing controversies, the CCC appealed to the sheer number of scientific studies that support low-calorie sweeteners to create certainty about the safety of its products when discussing controversy. The low-calorie sweeteners, such as saccharin and aspartame, were framed as innocent victims of uninformed public health regulation, not valid scientific controversy. However, when an ingredient's safety was not in question, the CCC highlighted consensus among scientific communities and regulatory agencies to build confidence around its products. Through this representation of the process that goes into discovering, testing, and regulating sweeteners, the scientific community emerged as a helpful expert. However, public regulatory agencies were framed as poor interpreters of scientific evidence and, as such, less than credible sources of information, especially in time of controversy.

In addition to using scientific evidence and consensus to argue for the safety of their products, threats to taste profiles, "the natural," variety, and consumer freedom were identified as serious risks for consumers. Threats to the sensory experience of eating sweeteners was an important theme in the SA and the CCC's arguments. The SA argued that the wide-acceptance and long standing history of the taste and mouth-feel of sugar is evidence of its safety. The SA also argued that sugar was safe by framing the risks associated with sweetener consumption within a binary of naturalness and artificialness. The SA identified ingredients they considered natural, such as sugar, as posing no threat
to consumers. Excluding alternative sweeteners and HFCS from the SA’s definition of “natural” left the impression that these sweeteners were risky.

The CCC also argued that their products were valuable because they had flavor profiles similar to sugar for which consumers had an innate craving. Unlike the SA, however, the CCC identified low-calorie sugar alternatives, including artificial sweeteners, as safe ingredients. It argued that their products were actually beneficial because they let consumers fulfill their desire for sweetness without consuming too many calories. By highlighting the variety of tastes available the CCC appealed to consumers’ freedom to choose. As such, threats to consumer freedoms were identified as major risks for consumers. The CCC appealed to consumer demand for sweetness and variety to fuel their argument for not only the presence of current alternative sweeteners, but also the development and acceptance of new ones. By arguing that consumers demand a variety of low-calorie sweeteners, the CCC was able to situate a fear of scientific innovation and calls for public health regulation as threats to consumers’ freedom.

**Situating responsibility.** The identification of risks is closely connected to issues of responsibility. Risk societies ask, who is responsible for this risk, and who should be held accountable for managing this risk? How the trade associations' situated blame and responsibility was connected to the risks they identified.

While each trade association said that calorie control was important to managing body weight, the rhetors connected this claim to issues of responsible action differently. By minimizing the caloric value of sugar and HFCS, the SA and CRA suggested that consumers could eat sugar and HFCS’s safely and manage their weight if they simply ate all foods in moderation and sought balance in their diets. Appeals to moderation and
balance include the implicit conclusion that people are individually responsible for their health and that any food can be a part of a healthy diet (Simon, 2006). However, the moderation and balance guidelines were problematic because the nature of a reasonable portion, a moderate meal, or a balanced diet was ambiguous and never addressed by the associations. Individuals were responsible for knowing what "reasonable portion sizes" looked like.

Unlike the CRA and SA's consumption guidelines, the CCC argued that sugar and HFCS challenge attempts to successfully manage body weight because it was too difficult for consumers to practice moderation or balance while satisfying their desire for sweetness. Instead, CCC suggested that consumers should replace caloric sweeteners with a variety of low-calorie sweeteners. Instead of giving guidelines that suggested people restrict their desires, the CCC suggested that consumers should manage their health by consuming their products as needed to satisfy their innate desire for sweetness and, implicitly, avoid sugars and HFCS.

Together these case studies reflect and complicate previous findings that food discourse appeals to individual responsibility. While all three groups held consumers accountable for food decisions and weight management, the role of industry groups and public health agencies in public negotiations of risk fluctuated. In addition to identifying who is to blame for obesity, the CCC and SA identified other risks related to sweeteners and within these frameworks the placement of blame expanded to a larger number of stakeholders. The CCC suggested that consumer freedom and variety were being threatened by unneeded public health regulation. As such, public health agencies were held accountable for consumers' inability to maintain healthy body weights because the
agencies restricted the entrance of low-calorie sweeteners in the marketplace. Consumers and industry groups were seen as responsible for petitioning the government to approve new low-calorie sweeteners.

Unlike the CCC, who focused on limiting public health agencies’ responsibility in public negotiations of risks, the SA argued that industry groups and public health agencies should be more involved in discussions about the roles of sweeteners in the marketplace. With artificial foods considered a threat to human health, the SA blamed poor public health on the overuse of artificial sweeteners and unhelpful labeling of sweeteners in foods. The SA held public health agencies responsible for controlling risk associated with artificial sweeteners by arguing that they should more tightly regulate the use of and labeling of food with artificial sweeteners. The SA held food manufactures responsible for using “natural” sugar in foods as opposed to artificial sweeteners and HFCS.

**Forging sweet alliances.** In addition to being comprised of a variety of stakeholders, contemporary food systems represent a variety of products. According to McKee and Lamb (2010), successful promotional communication is vital for business because it informs consumers of the real or constructed competitive advantage of a particular item over competing products and, thereby, favorably influences purchasing behaviors for rhetors. Indeed, the CRA, SA, and CCC represented their respective sweeteners in a manner that would increase their purchase over competing products. However, promotions did not always mean making a product appeared better than other sweeteners. Rather, the trade associations both highlighted and omitted similarities between competitive sweeteners to emphasize their product's safety.
The case studies revealed that all three trade associations positioned their products in relation to other sweeteners in the marketplace. However, instead of simply highlighting the benefits of a particular ingredient over other sweeteners, the associations also developed strategic comparisons between sweeteners to demonstrate their comparable place in the human diet. The comparisons and contrasts between products highlighted favorable and distracted from less desirable attributes of the sweeteners each association was promoting and served to influence how audiences made sense of the relationships among sweeteners, risks, and health.

The CRA repeatedly told consumers that HFCS was nutritionally the same as other caloric sweeteners. Comparisons to sugar and honey served to downplay any special relationship between HFCS and obesity risks. Consumers, the CRA reasoned, should feel just as safe eating HFCS-sweetened products as they would if they were ingesting sugar. The CRA’s attempts to make HFCS look comparable to sugar and honey were important because, when making food decisions, consumers find familiar risks less threatening than unfamiliar ones (Grunert, 2005). However, it is important to recognize that the CRA’s appeal to moderation did not suggest that eating HFCS was a health-promoting activity, but, rather, that HFCS, poses no special risks to consumers compared to the other sweeteners.

While the relationships between HFCS, sugar, and honey were constantly referenced by the CRA, much less attention was given to the relationship between HFCS and alternative sweeteners, such as artificial sugars and sugar alcohols. When the CRA did discuss low-calorie sweeteners, they focused the discussion on dental health as opposed to weight management. Limiting this discussion restricted reader's opportunity
to consider replacing nutritive sweeteners (HFCS and sugar from beets and sugar cane) with nonnutritive sweeteners (artificial sugars and sugar alcohols) to reduce one's caloric intake and manage one's weight.

Unlike the CRA, the CCC and the SA both chose to omit discussions of HFCS and, instead, focused on differences between low-calorie sweeteners (including artificial sweeteners) and sugar. The CCC repeatedly compared the flavor profiles of low-calorie sweeteners and sugar. However, low-calorie sweeteners were contrasted with sugar to promote them as sugar replacements that could satisfy audience's desires for sweetness without contributing to their caloric intake.

Similarly, the SA judged sugar’s place in the human diet against low-calorie sweeteners, specifically artificial sweeteners, and ignored HFCS-based comparisons. By comparing and contrasting sugar with artificial sweeteners sugar emerged as a healthy option within the SA’s framework of the natural. It would have been more difficult to distinguish sugar as the healthiest sweeteners available to consumers if the SA had compared sugar to HFCS because, though HFCS did not fall within the SA’s definition of the natural, HFCS was natural according to FDA (2010) guidelines.

In sum, trade associations representing the sweetener industry provided a symbolic repertoire for identifying, making sense of, and managing risks. This section described the associations as contributing to public negotiations of risks in three ways: by incorporating scientific evidence and appeals to consensus identify and make sense of risks; by situating risk management as a consumer’s responsibility; and, by discussing alliances between sweeteners to help audiences make sense of the variety of sweeteners available. I also identified points of dissent across the cases. For example, threats to
taste, nature, variety, and consumer freedom were situated as very real risks for consumers which demanded responses just as much as nutritional risks. In the next section, I address how these rhetorical themes contribute to, reinforce, or distract from dominant risk ideologies.

**Reflecting, Contributing, and Deflecting Risk Ideologies**

The second research question which asked, “How, if at all, do these strategies reflect, contribute to, or distract from dominant risk ideologies related to food and health?” While the case studies demonstrate that much of the trade associations’ discourses reflected and contributed to dominant understandings of risk, responsibility and rationality, they also distracted from the ideologies that structure risk societies.

Guided by ideologies of healthism (Crawford, 1980) and nutritionism (Pollan, 2008), consumers in risk societies seek to mitigate risks by micromanaging their nutritional intakes based on the advice of scientific experts. The case studies demonstrated how trade associations representing the sweetener industry reflected this collective orientation toward risk. Though each trade association sought to promote consumption of its product over other sweeteners on the market, they each drew on science to support their claims concerning their product’s role in managing or reducing body weight.

The science-based arguments posed by the trade associations demonstrated that their products were not risky, or at least not any riskier than other sweeteners. The lack of scientific evidence ascribing risk to a sweetener, or the lack presented by a trade association, was interpreted as representing its safety. The promotion of these sweeteners as valuable ingredients in the human diet was based on the fact that they were risk-free,
not that they were health promoting. By framing the risk-free nature of a product as a good enough reason for its consumption, the trade associations reflected and contributed to risk society members' tendencies to collectively avoid and address risk as opposed to promote health. The dominance of scientific knowledge in the Association's discourses was consistent with Pollan's (2008) argument that science is more important than issues of tradition or taste when members of risk societies make food decisions. The guidelines for healthy eating were also consistent with risk societies tendencies to be more preoccupied with negating risks than they are with promoting health (Beck, 1992). As such, the guidelines for healthy living developed in risk societies are hard to put into practice because they are more likely to classify foods as bad than to categorize good choices (Lupton, 1996).

Since the risks of excess calories and body weight were positioned as knowable and preventable, the associations held consumers responsible to act prudently and to make calculated choices to ensure their safety. To reduce the risks associated with excessive caloric intake and obesity, consumers were told to make "reasonable" decisions about food practices. The guidelines the trade associations provided for reducing risks were not always clear. While the CCC argued that reasonable practices included replacing caloric sweeteners with low-calorie sweeteners, the CRA and SA suggested that practicing moderation and balance were reasonable means of risk management. The CRA and SA did not define moderation or balance, leaving to consumers to define these terms. As a result, consumers were held responsible for poor health even if they practiced moderation and balance because the groups could easily argue that the consumer misinterpreted their guidelines. The placement of blame on individual
members of risk societies, as opposed to large social systems or organizations, is consistent with Beck's (1992) description of risk societies and Pollan's (2008) nutritionism. Situating consumers as responsible also mirrored the discursive practices employed by other industries, including those representing the hazards posed by global warming, secondhand smoke, asbestos, lead, and plastics (Michaels, 2008).

By situating consumers as responsible for risk management, the trade associations further contributed to dominant understandings that risk management is a rational, linear process. Consumers are conceived of as autonomous, rational agents in social systems who have the resources (cognitive, relational, financial, or other) to receive, interpret, and apply experts' risk communication recognize and react to risks (Jaeger, Renn, Rosa, & Webler, 2001). A rational-choice model suggests it would be quite rational for individuals to follow and irrational for them not to follow expert advice. Ignorance is positioned as the core reason why individuals make "poor" risk decisions: that is, decisions that do not parallel expert recommendations. The solution to improving health, then, is to help the public be more rational though education. Audiences were framed as reliant on expert sources of information, specifically the information that is “clearly” presented and often summarized on the association’s website. As educators, the associations insisted that additional information would turn the irrational individuals who avoid their products into rational consumers of their products. The associations' characterization of the public and experts fit well with prior description of deficit models of public understandings of science (Blok, Jensen, & Kaltoft, 2008; Gross, 1994).

While much of the associations' discursive strategies reflected or contributed to dominant risk ideologies, they also complicated understandings of the discourses that
characterize risk societies. The trade associations’ strategic maneuvering represented one way in which the associations distracted from dominant risk ideologies. While the CRA relied heavily on scientific evidence and reasoning to support its argument that HFCS had a valuable place in the human diet, a straw man fallacy emerged as the scientific evidence countering the Association’s goals was labeled a myth, dismissed, and not cited properly. The presence of the straw man fallacy and ambiguity in the CRA’s Sweet Surprise campaign limited audiences’ opportunity to consider the full spectrum of information concerning HFCS and its influence on health. The SA also used strategic maneuvering in its argument. According to the FDA (2008) both sugar and HFCS are considered natural. However, the SA’s definition of “the natural” included sugar yet excluded HFCS. The definition's ambiguity, I argued, was also significant enough to allow the SA to change the parameters of the definition if the processes associated with farming and refining sugar changed in the future. The use of strategic maneuvering to selectively represent information or to alter definitions could be seen as attempts to limit informed, rational decision making. As such, strategic maneuvering distracted from dominant risk ideologies.

The associations also distracted from risk ideologies by appealing to sweetener issues unrelated to nutritional risks, including issues of taste, environment, tradition, and consumer freedom. All three associations' appeals to taste to demonstrate the value of their products in the human diet, which made sense because, if sweetness was unimportant, regardless of their safety or riskiness, there would be no real need to consume sweeteners—not sugar, HFCS, or low-calorie sweeteners. In addition to appealing to the taste of sugar, the SA argued that ecological harmony and gastronomical
tradition were also important attributes to consider when choosing a food. Sugar's organic sources and tradition in the human diet were framed as making it a safe and desirable ingredient for consumers. The CCC, on the other hand, argued that tradition and naturalness were not important and, instead, appealed to consumer's freedom to choose from a variety of sweeteners. From the standpoint of consumer freedom, scientific and technological innovations were framed as practices that helped provide variety in the market place. The variety promised by the CCC was unmatchable by what the earth could supply. Appeals to taste, ecological harmony, tradition, variety, and consumer freedom contributed to the set of criteria that the public should consider when purchasing sweeteners. Threats to values outside of the scope of nutrition served to distract audiences from actually considering the nutritional value of different sweeteners.

In sum, trade associations representing the sweetener industry reflected, contributed to, and distracted from dominant risk ideologies. In this section, I described how, though the associations had different rhetorical goals, each relied heavily on the ideology of nutritionism to promote their products. The CRA relied heavily on appeals to scientific evidence and reasoning to support its argument that HFCS was a valuable ingredient in the human diet. By focusing on nutrition and science, the CRA reflected and reinforced dominant risk ideologies. While the SA and CCC used nutritional risks as a framework for promoting the consumption of their products, these associations also appealed to values outside of nutrition to gain consumer support. These values included taste, ecological harmony, tradition, variety, and consumer freedom. My findings suggest that Pollan's (2008) arguments for the ideology of nutritionism are overly simplistic.
Risks to values unrelated to nutrition or science were also represented as being important to food decisions.

**Stakeholder Analysis of Discursive Contributions**

The identification and management of food-related risks reflect and respond to the social negotiation of claims put forth by various stakeholders in risk societies. Like any form of communication, risk discourses are not neutral. In fact, "risk definition, essentially, is a power game" (Beck, 2006, p. 333). The discursive strategies that characterize food politics and the potential rhetorical outcomes affect a variety of stakeholders. In this section, I respond to the third research question. That question asked, “how do particular stakeholders benefit more or less from these discursive strategies?”

By privileging scientific authority and notions of personal responsibility, the CRA positioned audiences as being reliant on experts for information. Though the CRA said that its goal was to provide audiences with sound scientific information, the CRA utilized strategic maneuvering when discussing the role of HFCS in the human diet. The CRA's use of a fallacy could be understood to both support and harm the institution of science. The CRA facilitated the reputation and authority of science by positioning scientific knowledge as essential to risk management. By only representing the voices of HFCS-proponents, the CRA made HFCS-opponents appear as incompetent outsiders. By limiting discussions of rational, opposing viewpoints, the CRA restricted the need for future questioning of and research on HFCS's role in the human diet.

The use of a straw man fallacy and strategic ambiguity provided immediate benefits for the association and the corn refining industry it represented. HFCS appears
to be the same as familiar sweeteners, such as sugar and honey. If considered a safe ingredient, consumers would be more likely to eat HFCS and manufactures would use HFCS in their foods. In addition to capital gains, the CRA’s strategies also stood to benefit corn refiners in the regulatory arena. A positive framing of HFCS decreases the likelihood of increased governmental regulations. Appeals to consumer moderation held consumers responsible for weight gain and any associated problems. However, if attention was focused the industry’s responsibility, the CRA would not be held solely responsible. Rather, according to their discourses, HFCS is not a unique contributor to obesity, and, therefore, associations like the Sugar Association should be held equally accountable.

The CRA had much to gain from the rhetorical repertoire it used to identify, make sense of, and manage risk. By using fallacious arguments, however, it risked compromising its trustworthiness (Hofmann, 2009). If audiences were to base their understandings of HFCS on only the online and campaign discourses, then it is likely the CRA would sustain a favorable image for HFCS. On the other hand, if audiences or opponents uncovered its argument structure or if they found valid claims by the HFCS-opponents, the CRA’s reputation would likely be damaged and public scrutiny of HFCS would intensify.

The SA also argued that obesity could be managed at the individual-level by practicing moderation and balance while eating. By holding consumers responsible for weight-related health issues, the SA displaced blame from the industry and warded off public health regulations on sugar. However, obesity-related risks were not of central concern to the SA; rather, it said that the largest threat to consumer health came from the
consumption of artificial and processed foods. The SA established a definition of "the natural" to help discern safe "natural" foods from "artificial" ones. The SA suggested that natural foods were those that existed in ecological harmony, had gastronomical traditions, and were produced using natural processes. This definition extended beyond the FDA's (2008) description of natural foods as having been through limited processing. The SA's discursive strategies served to benefit the sugar cane and sugar beet industry because the parameters it used to establish the safety of sweeteners were ambiguous enough to change over time, yet rigid enough to omit marketplace competition. The ambiguity that characterized the SA's definition of "the natural" would allow the definition to change over time to incorporate new sugar and beet refining processes and to be tightened to restrict the inclusion of other sweeteners. By promoting sugar as an ingredient that is safer than artificial sweeteners and HFCS, the SA compromised the goals of the CRA and CCC to promote and sell their sweeteners.

Though the SA suggested that consumers could manage risks at the individual-level by eating sugar, it also said that avoiding artificial sweeteners and HFCS was not an easy task. It was difficult to eat natural foods, it argued, because sweetener labeling was unclear and it was difficult to obtain products actually sweetened with sugar. To address labeling problems, the SA redefined natural and petitioned the FDA to develop front-panel labels to identify the use of artificial sweeteners in foods. By developing a definition that extended beyond the parameters of the FDA's definition of "natural" foods and calling for additional regulations on food labels, the SA implied that public health agencies were not doing enough to help manage public health. This compromised the authority of public health agencies in risk negotiations. To address the lack of products
sweetened with sugar available to consumers, the SA called for manufactures to use sugar to sweeten foods.

The CCC also situated obesity risks as manageable at the individual-level. It told consumers that they should reduce their caloric intake by replacing sugar and HFCS with low-calorie sweeteners to help lose or maintain body weight. Because their products were essentially positioned as a solution to obesity, the Association situated threats to consumer freedom and access to a variety of low-calorie sweeteners as the central risk facing consumers.

Groups associated with the development and manufacturing of low-calorie sweeteners, including science and the organizations represented by the CCC, emerged as helpful partners in the quest of risk societies to avoid weight gain. By situating science and manufacturers as helpful in consumers' pursuit of healthy living, the CCC contributed to the authority and role these groups have in public negotiations of risk. On the other hand, public health agencies were only framed as competent partners when they approved sweeteners. The CCC suggested that public health agencies were unnecessary and incompetent because they were said to regularly misinterpret scientific information and prematurely impose bans on sweeteners which later had to be recalled. This framing of public health agencies suggested that audiences should question their authority in public negotiations of health. By framing consumer demand as of extreme importance and low-calorie sweeteners as solutions to obesity problems, the CCC pressured public health agencies to approve their petitions for new sweeteners.

In sum, the symbolic repertoire used by trade associations representing the sweetener industry contributed differently to the goals of various stakeholders in
contemporary food systems. The shifting roles and responsibilities of consumers, industry groups, and public health agencies in the CCC and SA’s discourses reflected rhetorical interests. Though each trade association's discourses stood to benefit science, public health, advocacy, and consumer groups differently, a common theme across the case studies was the promotion of a trade association's rhetorical goals and the wellbeing of the industries they represented. Responsibility was not simply placed on consumers’ shoulders to diffuse industry accountability and public health agency, it was also strategically placed on industry and public health organizations to encourage the consumption of a rhetor’s product and discourage the successful entrance or promotion of competing products. While these discourses can be understood as strategic to benefit individual organizations, they can also be understood to support the sweetener industry as a whole. By mutually contradicting and supporting each other's messages, the associations served to build palate for and, thus, the market for sweeteners in general. These findings demonstrated the push and pull exerted on food systems by the food groups. It supported claims that industry groups are invested in pursuing their own interests, rather than public health interests (Nestle, 2003).

Theoretical Implications

Multiple theoretical contributions arise from the three case studies. In this section, I explain how the dominant themes identified across the trade associations’ discourses reflect rational approaches to risk (Bradbury, 1989) and a wrangle in the market place (Burke, 1969; Heath, 2009). I then argue that these analyses can be seen as contributing to theoretical understandings of food discourses because they highlight the progress orientations of these two theoretical concepts. Finally, I use Beck’s (1992,
1999) notion of reflexivity to critique this theoretical orientation to public negotiations of risk.

The ways in which societies orient toward and use the concept of risk can be understood to exist on a continuum (Bradbury, 1989). At one end, the cultural approach to risk suggested that hazards are the product of collective assessment and sense making. At the other end, the rational approach situated risk as objective facts which can be explained, predicted, and controlled with technological and scientific innovation. Unlike the cultural model which privileges subjective experiences of reality, and the decisions thereof, over material reality, the rational model of risk often leads to public negotiations of risk that disregard the collective and private value systems embedded in risk analysis and management (Plough & Krimsky, 1987). Based in the assumption that the public would put aside their subjective sense-making and make what experts consider "rational" decisions (that is one’s that align with expert opinions) if they had the right information, rhetors working within a rational framework use risk communication as a tool to increase the public's understanding of science.

The trade associations studied in this dissertation claimed that it was their objective to educate audiences, so stakeholders could estimate risks and make decisions based on evidence as opposed to subjective experience and sense-making. I found that a dominant portion of the discourses focused on issues related to calorie control and obesity, and within these framings the associations adopted a rational approach to risk. Each association based a portion, if not all, of its proof that its respective sweetener was safe on scientific evidence.
By privileging scientific evidence and consensus as markers of a food’s safety, the trade associations also negotiated what Gieryn (1999) called the boundaries of real science and “junk” science. For example, the CRA and the CCC established that decisions about their products' safety should be based on scientific facts that were backed by scientific consensus. The CRA argued that claims that emerged from the public or in everyday conversations were questionable and framed as junk science. Similarly, the CCC’s description of the knowledge and guidelines provided by health agencies were positioned as junk science. The logic followed that if the organizations could provide consumers with enough “real” scientific evidence of their sweetener’s safety then people would make rational decisions about consuming sweeteners; that is, they would consume that association's “safe” sweetener despite any “junk science” that would suggest they do otherwise.

Though consumers were expected to act according to the principles of a rational risk model, the associations appeared not to play by the same rules. The trade associations fit within rational models of risk because they presented, to some extent, scientific information to suggest that their products were safe. However, by employing strategic maneuvering, fallacious reasoning, and ambiguity in their discourses, the associations violate the assumptions of risk communication that emerge from rational risk models. Under the guidelines of rational models, risk communication is supposed to present information in a clear and concise manner to help audiences understand the meaning of the message and participate in public negations of risk (Renn, 1992). However, strategic maneuvering, fallacious reasoning, and ambiguity are considered incompetent communication because they limit clarity and the transfer of information
(Eisenberg, 1984; Talisse & Aikin, 2006). These findings contribute to theoretical understandings of the rational models in food discourses. Though a rhetor may espouse and hold audiences accountable to the values of a rational approach to risk, they can employ discourses that violate the principles of this same value system to strategically strengthen their authority in public risk negotiations.

By indentifying strategic maneuvering, fallacious reasoning, and ambiguity as recurring discursive patterns, my analysis demonstrated how rhetors can assemble and present knowledge claims in a manner that promotes their position in “contests among voices” (Heath, 2009, p. 21). In addition to reflecting and violating the principles of rational approaches to risk assessment and management, these rhetorical strategies can be also understood as reflections and violations of the wrangle in the marketplace.

Productive wrangles in the market place can be characterized by diplomatic dialogues consisting of multiple groups sharing information with the goal of reaching a sufficient agreement or coordinated action (Heath, 2009; Toth, 2009). On the other hand, if conflict characterizes a wrangle in the market place, it would likely be non-productive discursive activity.

The conflict-nature of the wrangles I identified in my analysis can be considered more or less productive. The conflict of the wrangle between the sweetener associations can be understood as potentially productive and competent communication activities for the food industry. By offering mutually competitive and complementary remarks about sweeteners, the trade associations maintain the public focus on sweeteners and strengthen the palate of the public for sweeteners. The focus and uncertain outcomes of the wrangle keep sweeteners in the marketplace. On the other hand, the associations' wrangle can be
understood as less than productive. The associations did not provide audiences with the opportunity to examine and compare ideas competing against one another. Strategic maneuvering, fallacious reasoning, and ambiguity limited the clarity, honesty, efficiency, and relevancy of public risk negotiations (van Eemeren, Grootendorst, & Henkemas, 1996). The wrangling could be understood as incompetent and less productive communication because the rhetors did not clearly present all the information on their sweeteners in a manner that allowed audiences to fully consider the risks attached to sweetener consumption in contemporary food systems. Finally, the trade associations’ discourses represented unproductive conflict because their discourses undermined the authority of others stakeholders who do not support the safety or economic wellbeing of their respective sweeteners.

The theoretical implications of this dissertation can be found in the ability of the analyses to demonstrate and problematize the connections between the linear rational approach to risk and Burke’s (1969) messy wrangle in the market. My argument has uniquely underscored the similarities the rational risk model and the wrangle in the marketplace. The rational model suggests that people can use information to act purposefully and mitigate individual risks (Bradbury, 1989). The wrangle of the market suggests that rhetors can act in a rational and dialogical manner that would lead to carefully, well informed and carefully calculated public decisions concerning the management of issues, such as risk (Burke, 1969). The problems that strategic maneuvering, fallacious reasoning, and ambiguity pose these approaches to private and public risk negotiations further demonstrate how both frameworks focus on the systematic uncovering and management of risk.
The progressive and rational orientations of these frameworks, however, is problematic because risks exist in complicated webs, often times spun by the food industry itself, and, as such, are never fully knowable (Beck, 1992). However, through modern reflexivity, risk societies have come to recognize that their efforts to "know" and "control" today's risk have often simultaneously produced tomorrow's risks. Rational or progress-oriented approaches to risk do not appear sustainable—there will never be clear conclusions to risk debates. The identification and estimation of risks, whether through objective, rational activity or messy wrangles, will seem to serve as catalysts for future problems.

Viewed within rational approach to risk and a wrangle in the market place framework, industry groups have increasingly become conduits of public health messages. As educators, they are seen as taking on socially responsible duties (Simon, 2006). However, industry sponsored messages about health and risks associated with food consumption have been the focus of much debate (Nestle, 2003; Simon, 2006; Wansink & Peters, 2007). My analyses suggest that the argument structures used to present information about food and nutrition are questionable. I will speak more about their value in public negotiations of risk later, but for now I believe it is valuable to ask, are informative campaigns sufficient? Can information adequately address the problems that comprise contemporary food systems? I argue that it cannot.

First, it is important that audience members recognize that allegedly informative discourses are inherently persuasive rhetorical acts (Potter, 1996). Information, regardless of its source, is never neutral. Even if presented in a clear, honest, efficient, and relevant manner, an informative message would be only a single understanding of
health, risks, and food in a moment in time. It would unlikely take into account and counter-balance the biomedical and scientific biases of risk ideologies. It would also not be able to account for the push and pull that different rhetors exerted on the development of "facts" by funding scientific inquiry and highlighting particular issues related to risk.

Second, it is important not to assume more information equates to healthier decisions and food systems. Information is not a magic bullet. Rational models suggest that providing audiences with clear, honest, efficient, and relevant information would increase their knowledge and, as such, lead them to make healthier decisions (Bradbury, 1989). The relationship between information and decision making is not straightforward (Beck, 1992; Lupton, 1999). Risk communication is interpreted and made sense of in concert with more general value and belief systems (Douglas & Wildsksy, 1983; Östberg, 2003). More important, even the more informed decision making does not always lead to improved or prolonged health. For example, consumers are already bombarded by nutritional messages every day, yet obesity rates continue to increase (Nestle, 2003).

Third, it is important to consider how even clear, honest, efficient, and relevant presentations of information about calorie control implies consumer responsibility in food systems. The dominant focus of industry discourses is on calorie control, which places responsibility on the shoulders of consumers and displaces industry responsibility (Nestle, 2003; Simon, 2006). While the amount of calories consumed is a factor in consumer's health, specifically body weight, it is important to also consider how consumer agency is enabled and constrained by the symbolic and material reality of their food systems. Product availability and pricing are important determinants of its purchase
(Furey, Strugnell, & Mcllveen, 2001). The pervasiveness and cheapness of nutrient-deficient foods increases the likelihood that low-income consumers will purchase them over more expensive nutrient dense foods. Further, food marketing influences consumer behaviors. While industry groups have come under pressure for marketing unhealthy foods to children, less attention has focused on the ethical evaluation of industry messages aimed at adult consumers because adults are considered autonomous and capable of recognizing and deflecting persuasion (Simon, 2006). However, it is valuable to consider the "information" industry groups provided about moderation and balanced lifestyles because these appeals keep the focus on food, specifically eating food.

Fourth, even clear, honest, efficient, and relevant presentations of information about food choices and calorie control do not take into account other important issues related to food and risk. Agricultural and environmental sustainability are also important topics to consider when talking about the healthfulness of the contemporary food system. It is important to adopt a systems approach to critiquing food choice. How food is produced, manufactured, transported, prepared, and disposed of impact our health, indirectly if not directly.

Rather than linger in the boundaries of "rational" information and decision-making, risk identification and estimation can also be integrated with subjective processes of communal, aesthetic, and shared symbolic aspects of food and risk (Bradbury, 1989; Douglas & Wildsvsky, 1983; Plough & Krimsky, 1987). Plough and Krimsky (1987) argued that the subjective cultural approach is not irrational; it simply is not founded on empirical evidence collected by individuals considered “experts.” Plough and Krimsky showed that as valid, but different, forms of evidences, subjective cultural
experiences can be used to extend the scope of rational approaches to risk. The authors suggested, that though many policy makers would say that the human experience is important, it is much more difficult for them to describe the role of subjective and cultural sense-making in social systems dominated by calculating risks using quantifiable measures.

My analyses demonstrated how issues unrelated to science, technology, and quantifiable risks can be incorporated into food discourses. While much of the trade associations’ discourses were aimed at educating the public about nutritional science with the aim of managing obesity-related risks, some aspects of the discourse also highlighted concepts related to the subjective and communal experiences of risk. For example, the SA discussed nutritional risks within a broader framework of taste, tradition, and environment. Similarly, the CCC highlighted the importance of variety and freedom of choice when negotiating nutritional risks. The CCC and the CRA both emphasized the similar taste profiles of their sweeteners to sugar, which established taste as an important sensory experience relevant to issues of nutritional value.

The trade associations seemed to be in agreement that the subjective experience of food is important; however, the extent to which they highlighted these issues appeared to be political endeavor. I have argued that issues of taste, tradition, the environment, variety, and consumer freedom were all positioned by the trade associations as things that were threatened and could be rationally solved by consuming their respective sweeteners. The subjective experiences of risk were to some extent exploited to distract from or further highlight nutritional risks.
Condit and Bates (2009) argued that while discussing theoretical and critical implication of rhetorical acts, it is important to imagine alternative discursive possibilities. My findings demonstrate that consumers were consistently held responsible for their eating choices and the health outcomes of those choices. This focus on consumers was problematic because it ignored the very real structural issues and disparities that are known to shape how people perceive and experience risks. It also ignored the accusation that the increasing amounts of added sweeteners in the contemporary food systems are constantly increasing the public's taste for sweets.

Alternative discussions of sweetener risks could widen the scope of risk discussions to include topics related to how social structures and food systems enable and constrain food choices, risk taking, and health outcomes. Adopting a systems approach, rhetors could highlight and address the negative correlation between socio-economic status and access to nutrition dense foods. Sweeteners are ingredients or are found naturally in a variety of foods. However, they are also added to many nutrient deficient foods. The trade associations representation of healthier foods that are sweetened with their ingredients served a rhetorical purpose of making the Association's sweetener look healthy. It also ignored the fact that there are socio-economic factors that impact whether a person's choice to eat sugar in the form of an apple or a can of soda. A systems approach would also addresses the interactions between consumer agency, health messages, and food choice. Rhetors would not situate consumers who are experiencing poor health as irresponsible and ignorant. Rather, the responsibility for health outcomes would distributed and some stigma would be removed from individual consumers experiencing poor health. In sum, rhetors participating in public negotiations of risk
should broaden the scope of their discussions to incorporate discussions of the factors that enable and constrain consumers eating practices.

In addition to visualizing alternative topics of risk discussions, it is also valuable to consider the theoretical implications my findings have on how we might imagine the purpose of public negotiations of risk. The associations' uses of strategic maneuvering and fallacious reasoning reflected a less than pleasant rendering of the wrangle of the market. This "competitive" wrangle suggests that there must be winner and losers (Burke, 1969). Rhetors win or lose the right to identify and manage risks, and audiences face more or less favorable outcomes. Entrenched in a particular paradigm, it is difficult to imagine an alternative system. However, it would be valuable to imagine a less competitive or confrontational model of risk discussions. While the wrangle can present itself as a conflict, it is possible that the wrangle can also represent a diplomatic dialogue between different groups, each seeking to share information, to reach sufficient agreement, or to coordinate actions (Heath, 2009; Toth, 2009). New collaborations between public health and industry groups might be a step in this direction. However, diplomatic dialogues would likely require food groups or public health agencies to compromise their profit or health objectives. As such, it is important to continue to monitor the relationships between these organizations and the outcomes of these collaborations to determine if they are mutually beneficial.

In sum, the theoretical implications of this dissertation suggest that a progress-orientation links messiness of the wrangle in the market with rational approaches to risk. While both can be seen as means of identifying, making sense of, and managing risks, Beck's (1992) modern reflexivity can be used to critique the assumptions of these
frameworks that there is some obtainable end to risk mitigation. While the trade associations were marked by discourse that moved beyond the nutritional experience of foods, their appeals to the broader experience of food risks were tainted by the politics of capitalism.

**Ethical Implications**

Though the trade associations said that they aimed to provide information about their sweeteners to audiences, the role of food industry as health educators has been contested (Nestle, 2003; Simon, 2006; Wansink & Peters, 2007). Though Wansink and Peters (2007) argue that industry messages can promote healthy lifestyles, Nestle (2003) and Simon (2006) have demonstrated the questionable rhetoric that has emerged from conflicts of interests. Indeed, multiple ethical considerations arise from the case studies and the theoretical implications of my dissertation.

Ethics are general theories that address Socrates's question of "how we ought to live" and establish norms and values concerning what is good and right. Ethical issues are the focus of much discussion because what is considered good and right adopting one framework may not be good or right evaluated using another viewpoint (Cheney, Munshi, May & Oritz, 2011). Indeed, the ethical guidelines for strategic communication, be it in public relations, marketing, lobbying, or risk communication, are not clear cut (Paul & Strbiack, 1997). However, communication practitioners and ethics theorists seem to agree that "ethically defensible behavior is a necessary condition of professionalism" (Edgett, 2002, p. 2). The importance of ethical communication practices is reflected and responded to by discussions of ethical communication standards by organizations representing strategic communication professionals, such as the Public
Concerns about food ethics have also been emerged as critical points of discussion in the 20th and 21st centuries (Ingensiep & Meinhardt, 2010). Ethical evaluations of contemporary food systems have focused on issues ranging from agricultural practices and environmental sustainability, to food chain transparency, animal welfare, food safety, and food security (Maurer & Sobal, 1995; Pinstrup-Andersen & Sandøe, 2007; Pollan, 2006, 2008). Scholars have also considered the ethical implications of food communication, including advertising (Simon, 2006), crisis communication (Ulmer & Sellnow, 2000), and the general public and industry messages aimed at policy-makers (Nestle, 2003). The International Food and Beverage Alliance (IFBA, 2011) and Grocery Manufacturers of America (GMA, 2011) reflect and respond to the cultural focus on food ethics by posting disciplinary commitments to responsible action and transparent communication. In terms of communication ethics, the IFBA (2011) said rhetors should practice responsible communication by providing nutritional information about foods, promoting only healthy foods to children, and by promoting physical activity and healthy lifestyles to the general public. The GMA (2011) similarly suggested that food marketers should limit advertisements aimed at children and promote the U.S. Department of Agriculture’s new food pyramid.

While an ethic of strategic food communication campaigns has started to be developed by scholars and industry groups, my dissertation suggests that these ethical guidelines are limited for two reasons. First, they do not capture the discourses evaluated in my dissertation, specifically, food messages aimed at a general audience during a time
of non-crisis. Second, the guidelines developed by the food and the communication
associations treat food and communication ethics separately, failing to speak to the
overlapping responsibilities of professionals developing strategic food communication.

In this section, I focus on the ethical nature of my findings. The morality of
rhetorical acts will be judged on the means and manner used to achieve persuasion and
the potential outcomes of the rhetoric. As such, I begin by evaluating the trade
associations' means and manner of persuasion, including message strategies and
channels. Next, I evaluate these messages by comparing their potential impact on
stakeholders. Because "ethics is about reflection and action" (Keeble, 2005, p. viii), I
conclude the section with a set of considerations for professionals and audiences based on
my ethical evaluation. In doing so, I envision my dissertation contributing to
contemporary discussions of food ethics and professional prescriptions for ethical
behavior.

I have identified strategic maneuvering was a dominant rhetorical strategy used
by all three associations. The strong presence of strategic maneuvering in public
negotiations of risk is a questionable rhetorical act because it does not facilitate problem-
solving (van Eemeren & Houtlosser, 2002). According to van Eemeren and Grootendorst
(1987), a dialectical approach is a valuable approach to problem-solving because it
allows multiple voices to jointly resolve an issue. From this perspective, dialogue aimed
at resolving differences is marked by clarity, honesty, efficiency, and relevance (van
Eemeren, Grootendorst, & Henkemas, 1996). Violations of the rules are incorrect moves
and could be considered attempts to limit problem-solving.
The presence of strategic maneuvering in the form of opportunistic ambiguity, defining practices, and framing tactics restricted the scope of sweetener discussions, including who could participate and what topics should be talked about, in a manner that promoted a rhetor's product(s). The associations studied in this dissertation failed to refute their opposition and attempted to prevent the other from advancing or casting doubt on their argument. For example, by developing a definition of the natural that was more restrictive than the FDA's definition of natural, the SA imposed certain restrictions on the CRA's ability to promote its product as natural. Instead of discussing points of comparison and contrast between sugar and HFCS, the SA limited the scope of the discussion to issues of the natural and restricted right of the other parties to advance or counter-argue standpoints (van Eemeren & Grootendorst, 1987). The ambiguity of the SA's definition was also problematic because its flexibility made it difficult to validate or refute. If the CRA wanted to say that HFCS was natural, the parameters of the SA's definition could be restricted. On the other hand, the SA could also expand the parameters if for any reason cane- or beet-sugar processing changed.

The use of strategic maneuvering was also questionable because it violated a pragma-dialogic rule that "formulations must be neither puzzlingly vague nor confusingly ambiguous and must be interpreted as accurately as possible" (van Eemeren & Grootendorst, 1987, p. 292). For example, the CRA argued that HFCS was not found in large quantities in everyday foods. While it was true that HFCS was not used in abundance in the foods they displayed, including bran cereal and salad dressing, the CRA strategically omitted discussions of the number of servings of sweetened beverages or desserts it would take a person to consume before meeting their daily recommended
calories from sweeteners. Though their information was truthful, their use of strategic maneuvering failed to give audiences and their opponents the opportunity to consider and refute the role of HFCS in contemporary food systems. Similarly, by focusing on the comparable caloric-values of sugar and HFCS, but ignoring low-calorie sweeteners, the CRA failed to address the valid role that the CCC's low-calorie sweeteners have in reducing-calorie diets.

Pearson (1989) wrote that, "the important question becomes, not what action or policy is more right than another, but what kind of messages improve the chances that competing interests can discover some shared ground" (p. 206). Using a pragma-dialogic framework, I have demonstrated that the trade associations' reliance on strategic maneuvering is a questionable practice not aimed at promoting a discussion, but rather a monologic approach about how their respective sweetener is a viable option for consumers. A monologic approach to strategic communication is practical from a marketing context, as these rhetors are competing to secure a share of the sweetener market. As rhetorical devices, strategic communication campaigns are important to the free exchange of, and fair competition among, ideas and products in society (Heath, 2009). However, a monologic approach is problematic because it characterizes consumers as "things through which to profit" (Johannesen, 1996, p. 68). If consumers' goals include making "good" food decisions and negotiating risks, a monologic approach to risk negotiations is problematic. Adopting this approach fails to consider and accommodate consumers' definitions of risk, values, and agency.

In addition to considering the ethicality of strategic maneuvering, it is valuable to consider the manner in which these messages were communicated. Specifically, I
question the channels that the trade associations used to disperse their messages and the impact of the manner of communication of issues of transparency. The rhetorical texts examined in this dissertation were available online, which allowed for a variety of audiences to access the messages. The online format meant that the rhetors could incorporate a variety of modalities into their messages. Indeed, this dissertation explored messages that were communicated using text, visuals, videos, and interactive tests, journals, and calculators. The questionable nature of these manners of communicating are not the modalities themselves, but rather the rhetorical contribution of these tools to the associations' reputations.

First, transparency is an important ethical standard for rhetors developing strategic campaigns (Deblonde, Graaff, & Brom, 2007). An ethical norm established by the food industry holds that rhetors practice transparency as they discuss food pathways and that they educate consumers about health issues related to food (GMA, 2011; IFBA, 2011). While the term transparency is typically applied to issues related to the production or food and communication during times of crisis, I extend it to industry's transparent disclosure of their identity in messages.

This criterion of transparent authorship becomes important when considering the ambiguous or absent authorship of the webpages and tools analyzed in this dissertation. Cues indentifying the CRA, for example, as the author of Sweet Surprise were nearly absent from the campaign website, sweetsurprise.com. Discussions of the CRA's role in the campaign or links to the CRA's homepage, corn.org, were limited to faint icons at the bottom of the sweetsurprise.com website and within a tab called "About Us." While it was possible for audiences to identify the author of the website, it was fairly ambiguous
on most web pages associated with sweetsurprise.com. The CCC similarly masked their identity as authors; however, they adopted a different approach. The CCC openly disclosed that it was the author of caloriecontrol.org, but its identity as a trade association was limited. Kennedy (1997) said that the name "Calorie Control Council" is a "consumer-friendly, innocuous" name. It does not call attention to the Association’s identity as a trade association with potential conflict of interest; rather, the name alone might suggest that the website caloriecontrol.org was just as likely authored by a consumer or public health group.

It was also interesting to note the online structure of the CRA's and CCC’s web presence. The CRA's homepage, corn.org, and campaign page, sweetsurprise.com, were separate. Similarly, the CCC's homepage, caloriecontrol.org, was separate from campaign website, caloriescount.org, which contained its calculators, journal, and tests aimed at helping consumers manage their body weight through caloric intake. By separating these pages, the CRA and CCC served to rhetorically distance their messages and resources from their corporate identity. Limiting the likelihood that audiences would consider conflicts of interest in authorship, the associations potentially increased the perceived credibility of their information. Because the lack of transparency in these online structures potentially contributes to audiences’ (in)abilities to critically evaluate the messages and tools, this practice is questionable.

**Practical Implications**

Rhetorical criticism is a method that can be used to analyze how discourses function to enable and constrain understandings and actions, and to give counsel to rhetors and audiences about present and future communicative events (Condit & Bates,
2009). In this section, I describe several practical implications my analyses have for public negotiations of risk. I organize the practical implications of my findings around several of stakeholders that the discourses served to impact most. Specifically, I describe issues related to message design for industry groups, issues of agency and health media literacy for consumer audiences, and issues surrounding boundary spanning and preservation activities for public health agencies.

**Industry.** The practical implications of my analysis suggest that strategic maneuvering can be used competently by rhetors seeking to take advantage of opportunities to influence the result of a controversy in their own favor. Opportunistic representations of evidence, definitions, and frames can help trade associations identify their products’ “safety” within the complicated webs of information about health and sweetener consumption. For example, by framing public negotiations of risk as being about obesity, the natural, variety, or consumer freedom or as simply a matter of nutritional science, the trade associations were able to selectively represent the controversies surrounding their products. By choosing to highlight specific risks, it was easy for them to appear to win the argument. These discursive strategies allowed the trade associations to avoid more complicated discussions of other controversial topics concerning the production, manufacturing, and consumption of sweeteners in the United States. For example, obesity was a simple scapegoat to complicated discussions about U.S. government subsidies for corn, environmental sustainability, nutrient-deficient foods in general, and the correlations between sweeteners, obesity, and consumers’ socio-economic status. From a pragmatic standpoint, my findings suggest that trade
associations can use fallacies, ambiguity, definitions and frames strategically to limit controversy in attempt to remove themselves from continued public scrutiny.

In addition to opportunistically representing information, my findings suggest that explicit comparisons and contrasts between comparable products in the market place can be a beneficial rhetorical strategy. Each trade association compared and contrasted its product(s) strategically with other sweeteners to highlight the benefits and omit any drawbacks of the rhetor’s products. The practical implications of these findings suggest that professionals can discuss marketplace competition as long as their discussions lead to the conclusion that a rhetor’s product is the best option for consumers.

These rhetorical strategies can also be employed by industry groups to reconstruct public negotiations of sweeteners’ role in contemporary food systems so that particular ingredients appear to be uncontestedly risk-free (at least in comparison to other comparable products). Indeed, one of the unique findings of this dissertation was that the trade associations used science, consensus, and/or defining practices to construct certainty around the consumption of their products. The appeals to certainty served the purpose of increasing positive evaluations of respective sweeteners in private buying-decisions and to reduce the controversy as to mitigate governmental regulation. Attempts to construct certainty were markedly different from those of other industries which have been found to emphasize uncertainty in scientific findings and communities (Michaels, 2008; Michaels & Monforton, 2005; Michaels, Monforton, & Lurie, 2006; Oreskes & Conway, 2010). As such, my findings suggest that appealing to certainty is also rhetorical resource available to rhetors attempting to manage the reputation of industries and products.
While much of the trade associations’ discourses were aimed at creating certainty about the safety of HFCS, sugar, and low-calories sweeteners in contemporary food systems, my findings suggest that trade associations were fairly explicit about the politics of food. Each trade association openly identified the push and pull that they have on public understandings of science. They identified the role of their messages as health education, as they said that their objectives were to educate consumers, industry groups, and policy makers. By appealing to rational models of risk communication and framing themselves as educators, the associations appeared to be acting socially responsible. Their discourses appeared to help equip people to eat healthfully. In doing so, the associations displaced the responsibility for actually changing food behaviors and food systems to fight obesity on consumers.

In addition to informing stakeholders, the associations also identified their persuasive roles in public risk negotiations. These roles included petitioning the FDA to accept new products or to change food labeling, urging industry groups to use their sweeteners, and supporting the scientific and technical development of new products and means of testing the safety of products. Explicit references to the industry's persuasive roles in food systems were always cushioned within a framework of social responsibility. For example, the SA said that it was petitioning the FDA to more clearly label products with artificial sweeteners to help consumers easily identify foods sweetened with natural, “safe” sweeteners. The CCC said that it supported technological and scientific innovations and petitioned the FDA to accept new low-calorie sweeteners because it wanted to facilitate consumers’ freedom to choose from a variety of products that would satisfy natural cravings for sweetness while fighting weight gain. While the associations’
behaviors did stand to impact consumers, they also served to positively impact industry interests. For example, in attempt to avoid products with artificial sweeteners, consumers are likely to buy comparable products sweetened with sugar, which would benefit the beet- and cane-sugar manufactures. From a practical standpoint, these findings suggest that professionals can discuss their organization’s roles in food politics. However, professionals should frame these roles as acts of corporate social responsibility.

Professionals can position industry groups as themselves as facilitating consumers’ health decisions, taste, and freedom to appear responsible, yet avoid having to make major, and often costly, changes to how foods are manufactured produces.

I have identified several message strategies available to rhetors representing the food industry. These strategies may be employed to reach or avoid particular outcomes; however, my ethical evaluation suggests that it is not appropriate to use each of these strategies just because it may be effective in attaining a particular goal. I suggest that more emphasis needs to be placed on transparent communication practices that go beyond the scope of risk communication or investor relations. It is important that industry leaders set ethical or responsible standards that industry groups highlight communication issues. Industry leaders should continue to focus on identifying responsible marketing to children, the promotion of healthy lifestyles, and transparent crisis communication. They should also adopt standards and norms related to balanced representation of information and resources and the role of industry groups in shaping information or policies. Further, industry leaders should also seek transparency in the structure of their online presence. It is important that the authorship of websites and tools
is clear. One way of doing this is linking the campaign website to an organization’s homepage.

A requirement of communicative clarity and transparency does not mean that rhetors must necessarily make explicit or direct statements about their motives, nor that audiences must be perfectly interpret and comprehend a message (van Eemeren & Grootendorst, 1987). Absolute clarity and shared meaning are rarely attainable, and ambiguity is not inherently unethical (Paul and Strniak, 1997). Rather, rhetors should present information and their role in authoring messages in a manner that facilitates, or at least lends itself to, dialogue and critical thinking.

**Consumers.** Risk societies expect that members will seek and apply scientific information to mitigate risks and promote health. However, "consumers wanting to find their way within these discourses on food and health and the connections between the two…stand before an arduous task" (Őstberg, 2003, p. 4). Information concerning food-related risks, including sweeteners, is pervasive and constantly changing. The discursive strategies identified in my dissertation do not serve to help consumers interested in findings out the “truth” about the relationship between sweeteners and health. Strategic maneuvering and ambiguity make the process of identifying and making sense of the full breadth of information available on sweeteners more difficult (Eisenberg, 1984; Simonin, 1999). I am not arguing that the trade associations misrepresented the reality of risks, but rather that they strategically misrepresent the rhetorical environment in which these risks are being discussed. As such, they misrepresent the public discussions of risk that consumers rely on to make informed consumption decisions.
The success of strategic maneuvering relies on an "audience's inexperience or ignorance" (Talisse & Aikin, 2006, p. 347-348). As such, a practical implication for consumers based on these findings is that it is important for consumers to develop and/or maintain strong media literacy. Scholars generally define media literacy broadly in terms of a person’s ability to access, analyze, evaluate, and communicate messages in a wide variety of forms (Aufderheide, 1997). Indeed, Simon (2006) said that “understanding who the major players are [in food politics] is critical to recognizing them when they appear in the press and to exposing their biases” (p.331).

Making sense of the rhetorical intentions and strategies embedded in health-related messages about food also likely requires some level of science literacy, “appreciation of the nature, aims, and general limitations of science, coupled with some understanding of the more important scientific ideas” (Jenkins, 1994, p. 5345). Audiences who are unable or unwilling to sift through the wrangle of the market to discern the credibility and nuances of claims about sweeteners are unlikely to recognize discrepancies between the trade associations’ constructed and the actual rhetorical situations.

Health communicators are uniquely positioned to help the public increase their health media literacy (Parrott, 2003). Specifically, programs that promote healthy media literacy help participants critically evaluate the source, possible goals, alternative interpretations, and potential impacts of health messages. Increasing individuals’ ability to make sense of rhetorical intention would help audiences interpret and critique industry messages and facilitate informed decisions at the individual level.
By developing and/or maintaining strong health media literacy literacy, audiences can become conscious consumers. It is important to distinguish my notion of the conscious consumer from that of a rational consumer within rational models of risk. Conscious consumers, as I envision them, are not necessarily making the “right” decisions about health. They do not just applying information and calculating risks before selecting the “healthiest” food items. Rather, conscious consumers are savvy audiences that recognize the agency they have to make eating decisions within given communication contexts and food systems. They are not always going to choose what is considered the “healthiest” food, but they are going to make buying decisions based on their desired criteria at the time. As critical consumers of food media, they have the power to define the criteria relevant to their food choices and, by doing so, they can frame food decisions as risk-related activities or as something else. For example, critical media consumption would allow consumers to identify and break out of, if they so choose, the “natural,” “obesity,” or “consumer freedom” frames prescribed by the industry to situate their decisions as possibly responsible citizenship, environmental action, hedonism, or cultural tradition.

While it is important that consumers critically evaluate food industry messages, it is important that the thought process extends beyond the rhetor's identity. As I mentioned, it is likely that the associations distanced themselves from their messages to avoid having audiences automatically assume that industry involvement led to biased messages. As Wansink and Peters (2007) argued, just because the food industry benefits from a message, financially or otherwise, it does not necessarily mean that the message is harmful to the public or unethical. As such, the call for industry groups to have an
obvious presence in their messages is paired with a call for audiences to develop their
critical thinking skills. Yes. I have called into question the value of industry groups as
conduits of public health messages; however, if there is hope for a partnership between
public health and industry groups, which I hope there is, it is important that authorship
issues are only a starting point for critical media consumption. It is important that
audiences identify a rhetor and their possible motivations behind a message but then
critically evaluate the messages themselves. If there is hope for a partnership between
industry and public health groups, audiences will need to move beyond the notion that
industry messages always equate to biased information.

**Public health agencies.** The controversy surrounding whether public health and
industry groups should partner to promote particular eating behaviors is a controversial
issue. My dissertation findings have practical implications for public health agencies
working with trade associations. In this section, I describe how the discursive patterns
and strategies of the trade associations negated the role of public health agencies in risk
discussions. Then, I discuss the practical implication of these findings on boundary
spanning or preservation.

Public risk negotiations represent discursive struggles for the authority to define,
make sense of, and manage risks (Blue, 2010). My findings suggest that the authority of
public health agencies was strategically constructed by trade associations representing
sweeteners. Consistent with previous arguments posed by Nestle (2003) and Simon
(2006), the trade associations sought to minimize public health intervention and
regulation. The trade associations promoted the involvement and decisions of public
health agencies when they were in favor of their respective products. However, if public
health agencies negatively evaluated a sweetener or suggested regulation that would hurt the production, manufacturing, or sales of a sweetener, the respective trade association undermined the authority and evaluations of the public health agencies. The practical implications of my findings demonstrate the push and pull trade associations exert on public health agencies to make decisions that support industry goals.

These findings can be extended to considerations of boundary spanning and preservation activities between public health and industry groups. Arguments that support boundary spanning suggest that industry groups and public health organizations can share rhetorical resources to reach mutually beneficial outcomes (Lupton, 1995). On the other hand, arguments for boundary preservation suggest that industry groups will exert bias within the relationships and that industry interests will be met over public health interests (Ludwig & Nestle, 2008). While my dissertation found that trade associations representing sweeteners do indeed use rhetorical strategies that would likely inform audiences and sway buying decisions, I argue that the strategies I have identified are not desirable for public health agencies. Strategic maneuvering is a game of smoke and mirrors. While the trade associations simplified the messages about the relationships among sweeteners, health, and risks to help consumers identify safe sweetening agents, they distorted the rhetorical situations surrounding products. The reality is that information about the relationships among sweeteners, health, and risks is complicated. Simplifying this information into a message that is accessible and usable by audiences is difficult. Public health agencies should not use strategic maneuvering, especially ambiguity and fallacies, to simplify messages. When considering collaborations between these industry groups and public health, based on my findings, it seems likely messages
that emerge from these partnerships would promote, or at least not limit, the consumption of the respective industry’s product. While there are many potential benefits that could stem from public health and food industry collaborations, my findings suggest that public health agencies would be better off preserving the boundaries between them and the industries they regulate.

In sum, my findings, coupled with their ethical implications, have produced a variety of practical implications for stakeholders. I have identified several strategies that the trade associations representing sweeteners used to shape public risk negotiations related to sweeteners. The strategic nature or potential effects of these messages served as a catalyst for practical implications for consumers to attain and/or maintain a strong media and science literacy along with suggestions that public health agencies limit how they use the rhetorical tactics identified in this study and how they collaborate with industry groups.

**Limitations**

Because little research has been conducted on trade associations’ discursive contributions to public negotiations of risk in the context of food, rhetorical criticism, specifically CTA, was helpful in identifying their rhetorical patterns and strategies. As a method, CTA restricted my focus to the study of single rhetorical acts, as opposed to trade associations' discourses across history or contexts. Limiting the scope of the rhetorical artifacts I considered allowed me to "uncover subtle and otherwise unrecognized rhetorical strategies" (Ceccarelli, 2001a, p. 6). However, there are several specific limitations of my dissertation findings.
First, my findings are limited to the rhetorical texts I studied, which limits my ability to draw comparative claims or to make generalizations to industry discourses. While I identified different themes in findings compared to other scholars studying trade association or food industry discourses, my method of analysis does not provide the information needed to draw conclusions about why similarities or differences exist. For example, the rhetorical strategies of trade associations I identified vary from those uncovered by other authors studying industry responses to controversy. Attempts to construct certainty and scientific consensus or to highlight the cultural and aesthetic experiences of risk were markedly different from those of other industries which have been found to rely solely on scientific findings and to emphasize uncertainty (Michaels, 2008; Michaels & Monforton, 2005; Michaels, Monforton, & Lurie, 2006; Oreskes & Conway, 2010). Further even, the CCC's discursive strategies that de la Peña (2010) identified this association using during the debates about the safety of saccharin in the food system were different from those I identified.

Michaels (2008) suggested that industries fluctuate between promoting scientific certainty or uncertainty in response to marketplace demands. The differences between the rhetorical strategies I and other scholars have uncovered may reflect and respond to the different marketplace pressures put on the respective industries. For example, the trade associations analyzed in my dissertation were not facing crisis. Though more or less controversy surrounded each association's product(s), none were threatened with public boycotts or new governmental regulation. The differences in these rhetorical strategies may also reflect variations in the organizations' intended audiences. Although I studied strategic communication aimed at a general audience, other studies of industries
responses to controversy (e.g., Michaels, 2008; Oreskes & Conway, 2010) have explored the development and translation of scientific evidence by organizations to directly influence policy. While these discourses served to influence consumers, these rhetorical strategies focused more directly on shaping or delaying policy makers, including government and public health officials. Finally, the differences may have emerged from the different product contexts. Because we must eat, food consumption is a constant risk in everyday life. This is markedly different from some of the materials and issues studied by Michaels and colleagues (Michaels, 2008; Michaels & Monforton, 2005; Michaels, Monforton, & Lurie, 2006). He examined risks in which the public either chooses to participate, such as tobacco use, or is passively or unknowingly exposed to, such as asbestos and lead poisoning. Indeed, there are a variety of variables that could account for the differences between my findings and other scholars, but rhetorical analysis does not afford me the ability to make definite claims about why they arise.

Second, my findings provide a useful snapshot of the discursive norms of trade associations representing sweeteners. However, the usefulness of my findings to professionals engaged in the acts of selecting, creating, and executing messages is limited because I cannot make claims about their actual effect on audiences. Industries have a vested interest in making sure their messages promote the consumption of their goods and services (Wiist, 2010). I have identified a variety of rhetorical strategies available to industry professionals and how these messages serve to influence audiences, but my findings do not account for how people actually use the messages to identify, make sense of, or manage risks. My findings do not indicate the effects of these message strategies on various audience segments. This type of information would be helpful to
professionals dedicated to creating or critiquing the impact of messages that emerge from the intersection of commercial and health promotion.

Finally, it is important to remember that public negotiations of risk represent a wrangle between multiple stakeholders fighting for "the power to set agendas, frame debates, and grant voice to different concerns" (Blue, 2010, p. 148). Though I account for some of the push and pull stakeholders and historical context exerted on the discourses I analyzed, my dissertation focused mainly on one voice in the wrangle: trade associations representing sweeteners. Furthermore, for practical reasons I only analyzed one part of these rhetors' voices (external, online communication with general audiences). It would be valuable to explore the interactions among and between the CRA, SA, and CCC's and other stakeholders, including health, science, policy, consumer, and other industry groups. For example, as I conducted my research, I found lawsuits from consumer groups and petitions to the FDA from the SA advocating against the CRA's recent petitions to change the name of HFCS to corn sugar, along with press releases from food and agricultural trade associations concerning the CRA, SA, and CCC.

In addition to representing multiple stakeholders, rhetors have multiple messages and channels through which they participate in the wrangle of the market. My findings are valuable because they emerged from analyses of the online messages most easily accessed by the general public; however, by only looking at the online discourses I have provided but a snapshot of the overall discursive contributions of the trade association representing sweeteners. I did not account for the trade associations' external communication, including exchanges between the associations and policy groups or
health groups. Nor, did I account for the trade associations' internal communication between its own employees and stakeholders.

**Directions for Future Research**

At the heart of my dissertation research is a question posed by the authors of *Food Fears*: “How do food risks get communicated in meaningful ways?” (Blay-Palmer & Donald, 2008, p. 127). Communication scholars are well positioned to respond to this question. Indeed, communication scholars have contributed to the design, test, and critique of the social processes that contribute to how the public identifies, make sense of, and manages the relationships among food, health, and risk.

My dissertation findings have theoretical, ethical, and practical implications on how trade associations representing sweeteners select, create, and execute messages. However, analyzing the discursive contributions of the CRA, SA, and CCC to public negotiations of risk answered many questions as it turned up new theoretical and practical questions. In this section, I propose several research projects that can begin responding to some of these unanswered questions.

First, a direction for future research aimed at exploring the value of mixing public health and commercial interests in strategic communication could focus on how these types of messages actually influence public understandings of health or negotiations of risk. Adopting a message effects framework, communication scholars might consider how audiences process and use these messages and the contextual variables that impact the effectiveness of message strategies identified in my dissertation. A set of guiding questions could include: How do food industry messages about health and risk issues actually influence public perceptions of a food or behavior's healthfulness, and what
impacts to these messages have on food decisions, and health behaviors more generally? For example, it would be valuable to understand how audiences make sense of and apply industry messages that advocate for individuals to practice "moderation" and "balance" in diet and exercise practices. Simon (2006) argued that the ambiguity surrounding appeals to moderation and balance is strategic because it makes corporate and public health groups look responsible, yet provides little information about how to actually determine adequate amounts of food or exercise. The study of public reactions to "moderation" and "balance" messages in the context of junk food promotion, as opposed to fruits and vegetables which are generally consider more healthful, would also be interesting.

In addition to exploring the impact of these messages on audiences, it would be valuable for communication scholar to explore the use and effectiveness of the rhetorical strategies identified in my dissertation within specific contexts. It would be interesting to explore if there are differences in the use and effectiveness of rhetorical strategies based on the type of product that is being addressed. Are there differences in how trade associations representing sweeteners and those representing other foods, including fruits and vegetables, genetically modified foods, or broader food categories like beverages or groceries, discuss risk and health? The rhetorical situation or exigency would be another context variable worth studying. My dissertation explored the social construction of risk and health by trade associations representing sweeteners during a fairly mundane time period for sweeteners. Because risk communication differs considerably from crisis communication (for review see Ulmer, Sellnow, & Seeger, 2007), it would be valuable to compare and contrast the use and effectiveness of discursive strategies during times of organizational crisis. Communication scholars could explore not only the differences
between these rhetorical strategies, but also how everyday industry risk discourses serve as platforms for communication in the event of a crisis.

Exploring the actual effects of the rhetorical strategies identified in this study in a variety of contexts would be beneficial to multiple stakeholders. Professionals would benefit from communication research identifying the influence of particular message variables on public understandings and decision making. Gathering generalizable data on these strategies would allow trade associations, but also rhetors representing other food and non-food organizations, to make more informed decisions about the messages they use in their campaigns and the conditions under which they will be most effective in meeting goals. These types of studies would also help professionals representing the food industry develop communication plans in the case that new scientific findings or policies threaten the perception of safety that surrounds their respective products. Consumer-advocacy groups would also benefit from message effects data. These types of studies could be used to inform policies and educational programming related to food media and to help advocacy groups better prepare counter-arguments in advance to industry rhetorical responses.

A second direction for future research would be to explore the variety of discourses that comprise the contemporary struggle to define, make sense of, and manage food risks. Cultural definitions of health and risk and beliefs about causation are not purely logical, nor do they always reflect those adopted by medical and scientific fields (Douglas & Wildsvesky, 1983). Communication scholars are well suited to explore the differences in these symbolic frames and to describe the web of politics they exist in by
unraveling relevant power structures, ideologies, rhetorical motivations, and discursive outcomes.

One of the arguments against partnerships between public health and commercial industry is the fear that corporate bottom lines will overpower the pursuit of quality health education (Ludwig & Nestle, 2008; Lupton, 1995; Rowe et al., 2009; Simon, 2006; Wiist, 2010). The fear is that industry groups will weaken or shape public health messages to better position their products success in the marketplace. Rowe and colleagues (2009) validated this fear and suggested a part of the problem rests in "the pernicious effect of pack behavior or ‘group think’ facilitated by social or professional networks, either in the physical world or in cyberspace (blogs, websites, chat rooms, list serves, and other communication tools of the Internet)” (p.1287). At the group and organizational level, communication scholars could explore the communication patterns between and among strategic communication specialists and public health agents that serve to enable or constrain decision making and boundary spanning. The role of social media in facilitating these discussion and decisions is interesting because many trade associations and industry groups have private "member-only" sections of their websites. It would be interesting to explore the messages exchanged within these internal organizational communications. It would also be valuable for communication scholars to develop a description of "good," "ethical," and/or "holistic" partnerships between public health and industry groups and a set of "best practices" for professionals regarding the communication patterns that are likely to lead to partnerships with food industries. If these partnerships are to succeed, the relationships and messages must be sustainable.
Finding mutually beneficial situations for the public health, industry, and consumer groups is key (Wansink, & Peters, 2007).

Finally, a third direction for future research is grounded in the belief that audiences have agency in how they consume and apply health messages and participate in food systems. By providing a description of the opportunistic message strategies, definition tactics, and frames employed by trade associations representing sweeteners, I have established a need for health media literacy. Simon (2006) provided a set of criteria to help audiences critically evaluate food industry messages; however, research has yet to examine how consumers actually evaluate these messages based on their source. It would be interesting to adopt a communicative framework to explore questions such as: how do audiences evaluate source cues, evidence, and reasoning in industry sponsored health and risk messages about food and exercise; How do audiences evaluate and apply information about health, risk, and food consumption differently based on these message variables; and, what is the relationship between audience evaluations and food decisions? The answers to these questions could provide insight into how audiences exert agency within their food systems. If findings suggest that audiences are not critically evaluating health messages, communication scholars are uniquely positioned to develop, implement, and evaluate health media literacy interventions. If findings suggest that audiences are critically evaluating health messages, but face constraints thereafter, communication scholars are uniquely positioned to help identify and advocate for system changes.

Closing Thoughts

I believe that food, health, and communication are interconnected and can be better understood from a interdisciplinary perspective. This belief emerged out of the
liberal arts education I received as an undergraduate at Hiram College. By coupling a communication curriculum with nutritional science courses, I developed a broad understanding of the issues that characterize contemporary food systems. As a doctoral student at Ohio University, I focused my study of communication practices that shape and are shaped by health and food practices.

My familiarity with and respect for both social and scientific approaches to healthy eating enabled me to write this dissertation. Yet, it has been important for me to remember my role in public negotiations of nutrition, health, and food risks. I am as much a producer as I am a consumer of food messages. With both of these roles, I have had to negotiate my authority and responsibility related to food decisions and relevant discussions.

Though I am familiar with the biological and chemical processes associated with the composition and metabolism of sweeteners, my educational background and natural sensibilities locate my expertise to the social practices surrounding food. In the past year, I have developed a sensitivity to the types of claims I am "allowed" to make about food and the types of "evidence" I use to make personal decisions about food, specifically sweeteners. When discussing my research findings with friends, family members, and communication scholars, I have repeatedly been asked the same questions: so, honestly, is it safe? Is HFCS the same as sugar? What about artificial sweeteners?

I am careful to remind the person that I am a communication scholar not a nutritionist, so I'm not exactly qualified to answer those questions for them. But it does not seem to matter. They insist that I answer their questions. To avoid over stepping my boundaries, I tell them that based on the discursive strategies I found in my dissertation
that I have changed some of my consumption behavior. The truth is, I have sifted through the scientific evidence on HFCS, sugar, and low calorie sweeteners and, even with a high scientific literacy, it is difficult for me to draw conclusions about the safety or value of these ingredients. Further, given my knowledge of the social construction of scientific facts and the push and pull that industry has been found to exert on these findings, I am not sure what to make of even the most clear-cut nutritional conclusions. However, I am confident, though, that the prevalence of strategic maneuvering in the form of opportunistic ambiguity, defining practices, and framing tactics in these discourses is worrisome. And, because of these patterns, I have limited my consumption of sweeteners in general, and specifically my intake of artificial sweeteners.

Most people I have spoken with, even communication scholars, have not been satisfied with my responses to their questions. They say, "Okay, but what about the science? What do you think it says? What should I be eating?"

It has become starkly apparent how the same dominant risk ideologies and food politics that I critique in my dissertation shape my own role as a communication scholar interested in health and food. My "expert" knowledge on food risks does not seem to be valued the same as scientific understandings of food. My job is not to increase knowledge related to functional nutrition; rather, my job is to understand the arguments being employed in public negotiations of health. I am not trying to discredit these questions or answers. To some extent, nutritional science can help people manage their health. But, it is important to recognize that scientific conclusions are not able to ensure health. I argue that, food risks are as much, if not more, social phenomena as they are material realities. Should not we be equally as concerned about the questionable message
strategies used to teach us a particular form of health information as we are about the validity of the conclusion?

As a consumer, I have shifted multiple eating practices based on the belief that, yes we should be concerned by the questionable message strategies employed by these rhetors. I have to admit that my rhetorical and scientific understandings of food are only two of the criteria I apply to food decisions. There are many times when I have to "suspend" myself, or rather my knowledge, in an eating decision, to simply enjoy the taste of food, the tradition of particular dishes, or the company of friends and loved ones.

I believe it is important that scholars consider the social and material realties of food risks in our approaches to risk communication. I believe that teaching industries how to develop sustainable communication strategies that promote consumption and public health is a valuable endeavor. These corporations make up much of modern society's food sources. We should welcome alternative food systems, but it is not practical to try to completely destroy these dominant industries with constant criticism. Rather, it is practical, and possibly even valuable, to find ways to help large food industries find sustainable communication practices to promote their foods and healthy publics. There is even space for foods considered "junk" or "unhealthy" within this call for action, including those sweetened with HFCS, sugar, or low-calorie sweeteners, albeit a smaller space than it currently occupies in proportion to nutrient dense foods.

To the same extent, I think it is valuable to teach a person how to critically evaluate their food systems, specifically the messages they receive about the healthiness or riskiness of given foods or ingredients. Teaching a person what is or is not healthy is only as valuable as the scientific findings we base our messages on. If the opinions of
science shift, which they often do as an inevitable part of the scientific process, then our messages about healthy eating are moot. However, if we teach people how to critically evaluate messages about food and health, then we empower them to take continued agency in their daily food choices.

I envision my role in promoting conscious consumption, an informed and critical food act regardless of its perceived riskiness or healthiness, as a contemporary version of an old proverb: Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime. In light of my dissertation, I extend this proverb: Give the industry health information and you feed consumers and bottom lines for a day. Teach rhetors and consumers how to critically and responsibly use health and risk appeals you will sustain them for a lifetime.
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