The Language of Wellness: Perceived 'Quasi-Health' in Cereal Advertising Language

Alexandria Lampard
Advised by Emily Gasser
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Abstract

This thesis explores interactions between food, language, culture, and marketing in order to recognize their convergence in food product advertising. Marketing, a field that blends the studies of psychology, sociology, economics, and business, is not normally associated with linguistics. However, by examining the link between them in isolation, and again through the lens of diet culture, both semantics and pragmatics emerge as essential to the efficacy of the advertising language that signals ‘health’ in a product. To understand how these linguistic advertising tactics affect consumers’ perceptions of a food, I conducted survey research to gather perceived ‘health’ ratings of various cereals solely based on their linguistic ‘health’ cues. The results of this study suggest that there is a relationship between the language used to market cereal and the consumer’s perception. Furthermore, these results implicate the influence of diet culture as an authority in the field of food product marketing.

Acknowledgements:

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1 Introduction

Have you ever thought about how or why you choose the food you do? The process may look a little like this: Picture yourself in the grocery store, standing in the pasta aisle with a box of linguine in each hand. What would make you choose Brand X pasta over Brand Y? Perhaps the box of Brand X is a pleasing blue color, or maybe the pasta dish on the front is more appealing to your taste, or it could be that it is slightly cheaper. Perhaps the deciding factor rests in its name or its claims of “100% Organic Wheat” or the “artisanal” process with which it was made; or it could be possible that you choose Brand X because it simply ‘sounds more Italian’ or because it claims to be a ‘natural’ product, whatever that means. It must be better for you, right?

When you take a step back and look at the shelves of these grocery aisles from a macroscopic perspective, it becomes obvious that packaged food products are practically screaming at you to put them into your cart. With phrases like “Non-GMO”, “Gluten-free”, “Organic” or “All natural”, plastered all over the packaging, each product is claiming to be better for you than its neighbor. The linguistic features of food packaging indicate to the consumer that this brand must be more authentic or more natural or quite frankly more delicious than its competitors. Consider, for example, the well-loved ice cream brand Häagen Dazs. In examining the name alone, with its second a, an umlaut over the first, and the -zs ending, one might conclude that this brand is foreign and imported, thereby warranting its perceived higher quality and justifying a slightly higher price point. However, little-known to the average American consumer, this brand was actually founded in New York, is now headquartered in Minneapolis, MN, and was initially named with the intention of sounding Danish (Jurafsky 2015). Assumptions
about a brand or product, such as Häagen Dazs’s European origins, can be made based on any number of linguistic cues on the product packaging or advertisements. This can include everything from a brand’s name, to nutrition highlights on the packaging, and even the catchphrases used in media advertising, like the “It’s Magically Delicious!” you hear at the end of every Lucky Charms commercial.

The average American consumer is likely to find themselves in the cereal aisle during their trip to the grocery store. The heads of the Big Cereal industry, namely, General Mills, Kellogg’s, Post, and Quaker Oats, among others, know exactly how to get into the buying brain of the consumer using language. Their marketing teams, made up of individuals who have a thorough understanding of consumer psychology and behavior, are tasked with doing extensive amounts of research on the consumers who make up the cereal-buying market and what features they look for when they purchase or consume cereal. This consists of foundational and background research, reading articles and reports to understand the industry, its economics, and what competitors are doing as well as identifying demographic information of a market’s consumers. Once a foundation of background research has been laid, then more hands-on research can begin, such as survey research, product testing, and focus group research. This extensive work ultimately guides the positioning of a cereal’s advertising, and the success of this is evidenced by the fact that American people are avid cereal consumers.

But what is it about the aisle that attracts us? Cereal box advertising is some of the most aggressive in the prepared-food industry; the colorful packaging is certainly lovely to look at, and once your eye is caught by a bright color, you get sucked into reading the box. Then you are left to stare at flashy language and bold claims. In recent years, these claims have adjusted to accommodate a number of social and economic
trends regarding health and wellness. As a result, many of them now blatantly appeal to the health-conscious consumer (Sanders 2019). Fundamentally, the goal of marketing is to make a sale, and this is often accomplished by telling the consumer how X product would improve their life if they bought/used/ate/drank it. In terms of the above case of health-focused cereal advertising, these appeals to health not only attempt to sell the product itself, but they try to sell with it a quasi-promise of wellness.

In this thesis, I explore various, intertwined relationships beginning with language and food; then I move to the relationship between the ideals of diet culture and their realization as ‘health’ and ‘wellness’; and I touch on the relationship between linguistics and marketing. Following this, I detail the research project I completed where I first provide an analysis of the language used in the sorts of claims of ‘health’ and ‘wellness’ that come directly from cereal box packaging. I subsequently demonstrate how I used this qualitative analysis as the foundation for a market research-style survey regarding perceived ‘health’ of a given cereal based on its linguistic advertising cues. With this survey, I seek to explore my primary research questions concerning the efficacy of the linguistic advertising tactics that sell ‘health’ and how people perceive them. I then provide the results of this experimentation and their analyses which suggest a relationship between linguistic marketing cues of ‘health’ and the consumer’s perception of that food product. Finally, this is followed by a discussion, in which I call upon the greater implications of what it means to market ‘health’ in a culture that idealizes thinness.
2 Language & Food
Language and food are intrinsically related; they both act as markers of culture, as people use the foods they eat and the languages they speak to identify themselves as a part of something larger and to differentiate the 'us' from 'them' (Cook 2009). Along similar lines, Karin Nordström, et al. argue that "there is no culture without food," (Nordström et al., 2013). The same distinction exists for language; because language acts as a key that permits access to a greater understanding of a culture, Without language, social groups would be unable to set ‘us’ apart from ‘them.’ Humans have always benefitted from both food and language as “social practices” (Cavanaugh et al., 2014); they are simply two of the most fundamental and universal ways with which humans relate to one another.

This perspective of food and language as a relation-forming practice also lends a hand to the way that humans use food and language in order to acquire different types of ‘power’ by means of ‘choice’ (Nordström et al., 2013). While 'choosing' which language to speak does not necessarily share the same magnitude of 'freedom' as choosing which foods to eat, there is still cultural power within each of these realms of choice. For example, first-generation children of immigrant families may reject the food and language spoken in their home to accept (and be accepted into) the culture that surrounds them (Krusykowski 2007). While driven by a number of external factors, this act of rejection virtually suggests that the power within food choice and language 'choice' allows for a person to define their individual identity. However, while the assemblage of an individual identity involves a significant degree of choice, it first requires a claim to one or multiple larger cultural identities. By using the power of food and language to both distinguish ourselves from the crowd and assert our grasp of one
or several cultures, "...we can tell who we are, where we came from, and who we want to become" (Nordström et al., 2013).

Just as individual identity is a composite of many elements, cultural identity, too, exists as an abstract, multi-layered entity. Under this notion, a culture’s food and language exist primarily as parts of a whole. However, closer examination of each of these parts as subcultures suggests that both language and food can separately embody an identity within the context of a greater cultural identity.

The nuance that exists within American food identity is an inarguably pronounced case of the embodiment of an identity. That is to say, from the outside looking in, hamburgers, PB&Js, and apple pie reign supreme when it comes to observing American food culture (and American identity at large). However, according to Chad Lavin, a political scientist and cultural studies scholar, it is also the case that dieting claims a considerable amount of territory in this domain (Lavin 2013). Thus, contemporary American food identity as a whole seems to be caught in a sort of dichotomy: America is the birthplace of fast food (Moss 2014), yet diet culture has dominated and infiltrated American grocery stores, media, and ideology since the mid-nineteenth century (Lavin 2013). This contrast is best encapsulated by Lavin’s description that, "dieting, it has been noted, is as American as apple pie" (2013:1). As something so pervasive simply by virtue of its presence as a component of something as quotidian as our meals, how do we grapple with this dichotomous relationship? The short answer is, we don’t. Rather, we accept it and actually engage with both our affinity for thinness as much as our fondness for fast food, as demonstrated in the year 1972. It was in “...the same year McDonald’s launched supersized meals... Dr. Atkins’ Diet Revolution made publishing history with hardcover sales topping $1.1 million” (Fahy
However, even though we recognize the cultural acceptance of this relationship, this does not nullify the reality of its conflicting nature.

3 Diet Culture & ‘Health’ and ‘Wellness’

In contemporary American culture, when a person has lost a significant amount of weight, ‘How did you do it?’ is often one of the first questions they might encounter in social interactions. Human beings, as social creatures, are always curious about others’ behaviors and habits, and those revolving around food and exercise are certainly not exempt from being the subject of this curiosity (Sole-Smith 2018). The answer to the ‘How?’, however, has transformed over the decades. Given the present state of diet culture, you might hear a response detailing a low-carbohydrate, high-fat diet commonly known as ‘Keto’ (short for ‘Ketogenic Diet’), whereas, twenty to thirty years ago a diet with a similar emphasis on low-carb intake, called the ‘Atkins Diet’ would have been a much more prevalent answer. This shift is only one instantiation of how diet culture has consistently shapeshifted throughout history in order to accommodate changing societal norms and conditions.

3.1 Ideologies of Diet Culture in the United States

The general public’s ignorance of nutritional needs along with its acceptance of buzzy dietary misinformation serve as the foundation of diet culture. When coupled with our society’s unachievable beauty standards as portrayed in magazines, on social media, and on movie screens, diet culture’s toxicity becomes exacerbated. Diet culture engenders and encourages different sets of behaviors, thought processes, and societal standards that are fundamentally unhealthy (Anderson 2017). Christy Harrison MPH RD, a journalist, author and advocate of the ‘anti-diet’ movement, defines diet culture as:
“... a system of beliefs that:

- Worships thinness and equates it to health and moral virtue...
- Promotes weight loss as a means of attaining higher status...
- Demonizes certain ways of eating while elevating others...
- And oppresses people who don’t match up with its supposed picture of ‘health’ ...”

(Harrison 2018)

Because of diet culture, the existence of what a healthy relationship with food looks like has become muddled and pales in comparison to the flashy claims of fad diets. Although the very definition of the word diet is “to eat and drink sparingly or according to prescribed rules” (Diet n.d.), dieting is rarely as simple as ‘eat this, not that.’ Outside of the logistics and resources of dieting, it incorporates restriction to the degree that requires a level of willpower and of patience that do not come naturally to many, especially in the context of food (Anderson 2017). Thus, fad diets offer a shiny, new path to the end-goal of losing weight that really is too good to be true. Their claims of speed and ease are simply empty promises that are unrealistic, unsustainable, and even harmful to an individual’s health (Harrison 2019).

There are some who diet for their health, as prescribed or suggested by a doctor but the vast majority of dieters do so in an attempt to change their body in some way.¹ Those who subscribe to the latter of these camps of reasoning exist in what others have called a "pervasive cult" (Anderson 2017). Which, Michelle M. Lelwica, a religion studies and gender and women’s studies professor, would present in a slightly less sinister light, deeming the actions of dieting to be part of a "religion of thinness"

¹ For the purposes of this project, I focus primarily on dieters who do not have a medical need to diet, but who actively make the choice to diet.
(Lelwica & Mahan 2017:263). In either case, these comparisons exist in order to highlight our culture's "devotion to slenderness" (Lelwica & Mahan 2017:263). The concept of 'devotion' or 'dedication' associated with diet culture, is what allows Lelwica to draw this comparison to worship; dieters use their devotion to their future, thinner versions of themselves to fuel restrictive eating behaviors (Lelwica & Mahan 2017).

Weight Watchers, now known as WW International, Inc., began in part as a support group; at its conception, it was, in essence, a collection of meetings where women went weekly to discuss their struggles, gain encouragement and support from the community of fellow dieters, and provide a sense of accountability for one another (Hendley 2003). This description of a supportive community that meets weekly and with whom one can freely express their successes and struggles without fear of judgment is jarringly similar to what someone might experience as a member of a church or another place of worship.

Furthermore, Lelwica’s comparison of dieting and religion draws out the more abstract, yet pervasive, associations between dieting and morality. In the eyes of a dieter, being thin is equivalent to being 'righteous' because, "the ideal of dieting seems but one instance of a narrative of self-mastery" (Lavin 2013:1). Thus, so-called 'proof' of 'good behavior' comes in the form of a slender physique. ‘Bad’ behavior is occasionally exhibited through the language used by a person who might be considering or in the act of straying from their diet. For example, I was recently out at dinner when a friend asked me "Ooh, should I be bad and get a burger?" This association between burgers, a delicious, albeit not very nutritious, meal, and ‘bad’ behavior reinforces the negative association between sin and ‘unhealthy’ food. But, at the same time, ‘bad’ behavior often
results in accompanied shame and guilt, just as someone might feel if they had lied, stolen, or cheated (Anderson 2017; Harrison 2018).

In the text, *Eating Anxiety*, Chad Lavin sets forth the view that "the discourse of diet [is] where food and control converge" (2013:1). The relationship between food and control is one that many Americans struggle with, and yet, control is one of the fundamental pillars of nearly all dietary regimens. Even one of the most recent and now widely accepted conceptions of weight loss and gain, the “Calories In-Calories Out and Self-Control Theory,” incorporates control at a level that still employs restriction (Anderson 2017:398-99). The primary interpretation of this model is that it is a way to understand the physiological processes that are required to maintain a certain body weight. This is achieved by means of self-control with the goal of stimulating weight loss or gain, and subsequently preserving balance to maintain this weight change. Yet, the translation of this theory into the context of reality is not consistently reproducible, since its actualization tends to emphasize a number of purposes and processes that deviate from the theory’s primary concerns of physiological makeup and caloric reciprocity (Anderson 2017). The deviations most frequently come directly from diet culture. And as with any diet, there is a significant potential for this relationship between food and control to become misconstrued, misplaced, or misused, and can easily lead to disordered eating behaviors, which Dr. Diann M. Ackard considers to be the gateway to more precarious and detrimental patterns of eating (2004).

3.2 **Realization of Diet Culture as 'Health' & 'Wellness'**

Dieting, it has been discovered, is actually much more counterintuitive than one might imagine. A number of longitudinal studies examining the dietary habits of adolescents
and young adults over varying periods of time have determined weight-managing
dietary behavior to be a predictor of weight gain (Neumark-Sztainer et al., 2011; Lowe et
al., 2019). In fact, Neumark-Sztainer et al. found that “adolescents engaging in dieting
and those reporting unhealthy weight control behaviors were at two to three times
greater risk for being overweight 5 years later” (2011:1005). These findings suggest that
the act of dieting commonly results in the exact opposite outcome of that which was
intended. In addition to this, a study about body image and chronic dieters found that
70% of their participants who identified as chronic dieters reported responses that
denoted negative body images (Gingras et al., 2004). So, if dieting ultimately acts
against the dieter in such ways, why is it that so many Americans still subscribe to diet
culture?

For starters, there is an entire industry dedicated to selling the single-most
appealing product in diet culture: weight loss. The weight loss industry, as one of diet
culture’s biggest proponents, has seen a slight yet significant decline in recent years due
to increased awareness of the “body positivity” movement as well as do-it-yourself and
online dieting and fitness programs. However, the 2019 total revenue of $2.9 billion
suggests that such an attenuation has, at least not to date, truly made any impactful dent
(Amir 2019). If anything, it simply shows that these companies are surely in no danger
of going out of business and has signaled the need for redirected marketing efforts.

In recent years, diet culture as a whole seems to have created a narrative that has
allowed it to reject its historically negative image in an attempt to reestablish itself
under a new guise concerned predominantly with ‘health’ and well-being. For example,
the gluten-free diet has gained much popularity even with no prevalent increase in
diagnoses of Celiac Disease, a serious autoimmune disorder whose only known
treatment to date is a gluten-free diet (Choung et al., 2016). The rising popularity of health and diet trends and their influence in American food culture at large, such as the avoidance of gluten, can most often be identified by increased presence in the marketing and advertising of foods.

Within the past few years, this type of superficial revitalization was precisely exemplified by the rebranding efforts of one of the most reputable names in the weight loss industry: Weight Watchers. Weight Watchers is a weight loss program that, at its humble beginnings nearly 60 years ago, helped ignite an explosive movement within the weight loss industry -- and in diet culture. It is a program that claims to promote weight loss at a healthy rate through the encouragement of healthy dietary and lifestyle choices; the system works by assigning foods to a point system and providing each member, based on their age, height, and weight, an allotment of daily points they can “spend” (Hendley 2003; WW n.d.).

Now officially known as WW International, Inc., and toting the tagline “Weight Watchers reimagined”, the brand’s new association with not just weight loss, but “weight loss and wellness” points to the larger trends within the marketplace of weight loss services (Amir 2019). In fact, they even brandish the motto “wellness that works” along with claims of providing its users with “tools to make weight loss simple” and “make your wellness journey more delicious” (WW n.d.). While not considered a fad diet itself, many of the brand’s claims of efficacy, simplicity, and ease are effectively softened versions of the same sorts of claims touted by fad diets (Harrison 2018). The rebranding efforts of this program do not change the fact that this company’s primary ‘product,’ weight loss, has and will remain the same; while its longevity, consistent popularity, and brand image might paint a different picture, the use of weight loss as a
means of profit renders the company an active participant in the perpetuation of toxic diet culture.

Because of the impressive disguises companies like WW International, Inc. have developed, it is becoming more difficult to identify what consumer behaviors subscribe to toxic diet culture, and which actually engender a healthy relationship with food. While some may seem obvious to those who have consciously witnessed the transition from Slimfast to 3-day skinny detox juice cleanses. These disguises will be fresh faces to the following generations, and those who are currently most susceptible to falling in the trap of toxic diet culture are none other than adolescent and teenage girls (Neumark-Sztainer et al., 2011).

4 Linguistics & Marketing

Language, business, and culture all converge in the field of marketing. As defined by the American Marketing Association, marketing is “... the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large” (American Marketing Assoc 2017). This definition, while thorough, is convoluted. Whereas, an introductory marketing textbook simplifies this definition proposing that:

“Marketing is about people. It is about understanding what people want, then trying to give it to them at a price that they are willing to pay and a price that will provide you with an acceptable profit. Marketing is about targeting. It is about strategically choosing which customers you want to try to satisfy. Marketing is about positioning. It is about designing a product or service that has benefits that people want and cannot get elsewhere... it is about people and targeting and positioning — the strategic aspects of marketing. Without knowing to whom you want to sell and what you want to give them, you really cannot know how to advertise or price or promote or distribute effectively” (Sexton 2010).
According to these definitions, marketing is much more than how a company can convince a consumer to buy their product. In fact, this concept is often taught using the mnemonic device titled, the Four P’s of Marketing: Product, Price, Promotion, and Place, also known as the ‘marketing mix.’ Each of these P-words represents one of the four factors upon which a product’s success in the marketplace is contingent (2015).

Marketing is deeply connected to food and language. Guy Cook details this relationship between food and advertising language, arguing the relationship exists at all because: “[a]nother major reason for choosing to eat what we eat... is that we are persuaded to do so by somebody else’s sweet words. We are influenced by what is said about the food offered to us, as much as by the food itself” (Cook 2009:169).

4.1 Linguistic Advertising Tactics
In order to reach the level of persuasion that leads to a purchase, marketers must use a form of argumentation which is most commonly known as ‘advertising,’ Successful advertising is all about making a product as appealing as possible (American Marketing Assoc 2017). This can be done by making a product look visually or aesthetically pleasing, as well as by making it sound appealing using language. Understanding linguistic phenomena has allowed many a Chief Marketing Officer to bolster their brand’s language in order to portray the most influential form of communication required to sell their product.

In Sold on Language: How Advertisers Talk to You and What This Says about You, Julie Sedivy and Gregory Norman point out that a lot of the most persuasive advertising is done through implicatory language and we, as consumers rely on our “mindreading” or inferential communication skills to decipher intention in advertising
Thus, an understanding of the innate human ability to process and comprehend what is being said without it having been explicitly stated leaves open a window of opportunity for advertisers to persuade us with aesthetic and linguistic cues in extremely nuanced and subtle ways. If done effectively, a consumer can be pulled to buy something without even realizing how or why.

In 2011, Dr. Dan Jurafsky accompanied by student researcher Joshua Freedman conducted a research study to analyze and detail the advertising language used on potato chip packaging. The goal of this study was to compare the varying levels of each chip brand’s linguistic features presented in its advertising language with respect to the cost of the product (Freedman & Jurafsky 2011). Notably, when examining the semantic level of the linguistic stimuli on these bags, the results showed a strong correlation between claims of “authenticity” and higher price points, (that is to say, the chips that were made with real potatoes that came from real farms were actually more expensive). However, language indicating “authenticity” was not the sole linguistic feature indicative of a relationship with cost; a similar trend appeared in the presence of negation or negative markers. Jurafsky describes this association between negation and cost as:

“[E]xpensive chips... have a lot more negative markers, like the word no or phrases like ‘never fried’ or the word don’t in ‘we don’t wash out the natural potato flavor.’ Negation emphasizes bad qualities that a chip does not have, subtly suggesting that other brands have this bad quality. The message is that other chips are unhealthy, unnatural, or addictive...” (Jurafsky 2015:112).

Jurafsky’s findings suggest that we are able to interpret the intended, though subtle, message about the other brands’ substandard qualities, even when the advertisers only expressly mention the opposite; we instinctively make logical inferences according to
linguistic contextual markers and adjust our overall perception to fit these inferences (Jurafsky 2015). However, due to the influence on our perception, this ability to make inferences allows marketers to make simple adjustments in a product’s advertising language in order to play into this phenomenon as an attempt to make the overall marketing of a product more effective and successful (Sedivy & Carlson 2011). In fact, the catered language in the case of the negative markers on potato chip bags is so effective that Freedman and Jurafsky discovered that, according to a regression analysis, if there were at least six negative words on the package, “... you’re going to be paying about a quarter more per ounce” (Jurafsky 2015:113).

4.1.1 Grice’s Maxims as a Tool

While language is the powerhouse behind persuasion, at the core of persuasion lies the notion of cooperative communication. Philosopher and linguist Paul Grice, who is famous for his work in the linguistic subfields of semantics and pragmatics, rendered some of his research and observations of discourse into what is known as the Cooperative Principle (CP) and the four “conversational maxims.” In his text, Studies in the Way of Words, he initially posits the Cooperative Principle that states:

“Make your contribution such as required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.”

(Grice 1989:26)

This principle is accompanied by four maxims, which include:

- Quality
  - Do not say what you believe to be false
  - Do not say that for which you lack adequate evidence
- Quantity
  - Make your contribution as informative as is required
Do not make your contribution more informative than is required

Relation
- Be relevant

Manner
- Avoid obscurity of expression
- Avoid ambiguity
- Be brief (avoid unnecessary prolixity)
- Be orderly

(Grice 1989:27-8)

The Cooperative Principle above is generally first understood in a prescriptive sense, suggesting that one ‘must take context into consideration and adjust their communication accordingly and appropriately.’ However, it is best understood descriptively; when members of a discourse want to exchange meaning, they do so under the presupposition of cooperative intent (Jeffries & McIntyre 2010:106). Furthermore, the accompanying four maxims are merely compendia of behavioral patterns that Grice noticed in his observational research of natural language.

The goal of the maxims, in particular, is to describe the factors that enable us to make judgments of whether a discourse is successful or not. The maxim of quality states that, to be cooperative in conversation you tell the truth. There is an established understanding among cooperative communicators that one is not knowingly feeding the other false information and vice versa. Similarly, with the maxim of quantity, only as much as required to communicate clearly would be spoken, no less and no more. The maxim of manner states that cooperative communicators will communicate in a brief and efficient manner, and the maxim of relevance adds that one communicates cooperatively by only saying what is relevant to the discourse.

In the event that a person violates one or multiple of these maxims, what does this mean for the discourse? Does this simply indicate a rude, uncooperative
communicator? Ultimately, unless the intent of this person was to be uncooperative, it is much more likely that what seems like disregard *was*, in fact, intentional. When paired with *cooperative* intent, the deliberate flouting of one or more maxims gives rise to what is called an ‘implicature,’ or a speech act in which meaning is established in the gaps of what was said.

This phenomenon of imparting meaning onto what is *not* said by stating something expressly different is a maneuver familiar to both food product advertisers and linguistic researchers alike, as evidenced by the analysis of negative markers in the previously-mentioned potato chip study. In fact, implicatures are a linguistic tool others employ in order to allow us to use the “mindreading” ability posited by Sedivy and Carlson (2011). This gap between what is explicitly communicated and that which is not is the perfect place for an advertiser to implant appeal and hold your attention.

5 Research: A Cereal Survey

In order to further examine these connections and associations between food, diet culture, language, and marketing, I conducted a research project in which I sought to investigate their interactions and how they materialize through perspectives outside of my own. I focused this project on the consumer’s perception of ‘health’ in a variety of cereals based on its advertising language.

5.1 Introduction

With a current annual revenue totaling $10.2 billion, cereal production is considered to be a mature industry within the US. However, even with this established stature, the big players in the industry find themselves having to accommodate the ever-changing climate of American food culture. In recent years, this has materialized in the aisles of
grocery stores across the country as the emergence of more health-oriented products and advertising that incorporates ‘wellness’ language (Sanders 2019). The recent incorporation of ‘wellness’ language in this realm not only lends a hand to diet culture’s influence on American food culture, systems and marketplaces, but also to American marketers whose skills create manifestations of the culture itself.

In this study, I examine how marketers utilize the cereal box as a blank canvas for health-oriented advertising language and how, if at all, that can change a consumer’s perception of a cereal. By reflecting on the elements of ‘wellness’ marketing that affect my own food choices, the following research questions surfaced. These are outlined in Table 2.

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<thead>
<tr>
<th>Table 2: Primary Research Questions</th>
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<tr>
<td>1. How effective are the linguistic advertising tactics used to market a food product as ‘healthy’?</td>
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<tr>
<td>2. What features render some types of advertising language more effective than others?</td>
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<tr>
<td>3. How is this type of language perceived by others?</td>
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<tr>
<td>4. Would those who subscribe to/participate in diet culture view this language differently than someone who does not?</td>
</tr>
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These four questions forced me to consider the realizations of diet culture, its influence on linguistic advertising tactics, and their combined influence on consumer behavior. From this contemplation, I derived the following hypotheses, outlined in Table 3.
Table 3: Hypotheses

<table>
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<tr>
<th>Hypothesis</th>
<th>Description</th>
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<tbody>
<tr>
<td>1.</td>
<td>Linguistic advertising tactics do have an effect on a person’s perception of a given food product.</td>
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<tr>
<td>2.</td>
<td>Those who have participated in diet culture in the last two years will be less likely than non-dieters to be swayed by linguistic ‘health’ cues. Dieters will have an easier time distinguishing between the healthier and less healthy cereals.</td>
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</table>

Following the establishment of these hypotheses, I developed a survey with which I took interest in relationships and experiences with diet culture and ‘health’ as well as participants’ perceptions of the ‘health’ levels of cereals based on linguistic data from the boxes. Consistent with my hypotheses, I anticipated that the results of this survey would suggest that linguistic advertising tactics used to signal ‘health’ do present an effect on the consumer’s perception of how healthy or unhealthy they believe a cereal to be. Additionally, as per my second hypothesis, I also expected the results to suggest that dieters are less likely to consider a cereal product to be ‘healthy’ when only provided with its linguistic advertising cues; I predicted seeing trends in the data showing that dieters’ ratings of the cereals were lower on average than those of the non-dieters.

This survey produced some results that were expected, particularly with respect to my first hypothesis, but also yielded a number of unanticipated patterns. These unexpected results compelled me to further investigate some variables and relationships I had not planned to examine before the creation and completion of this survey. Multivariate analyses of these newly-surfaced variables shine light on a possible relationship between quantitative claims in a cereal’s advertising, its nutritional value, and how healthy a consumer may perceive it to be. Ultimately, I accept my first
hypothesis, as a number of outlying cases support the notion that language had a significant amount of influence on the participants’ perceptions, whereas, evidence for my second hypothesis would likely require further study of diet culture’s effect on consumer food behavior would be beneficial to further the understanding of the relationship between diet culture and the language used in food product marketing.

5.1.1 Studying Cereal

In choosing the focus food for this research, I considered a wide variety of products, anything from pasta to potato chips (inspired by the Freedman & Jurafsky 2011 study). Eventually, it became clear to me that the focus food must bear a few critical features in order to seriously be considered. This list included the following criteria: (1) the consistent presence of at least five pieces of ‘health-oriented’ linguistic cues across a variety of brands, (2) general socio-economic accessibility to the product, and (3) a relatively extensive range in that type of food’s nutritional information. I quickly realized that cereal fit the bill fairly well for each of these criteria.

First and foremost, cereal is one of the most aggressively advertised foods and the type of linguistic advertising data on boxes of cereal frequently targets a ‘health-conscious’ consumer (though, not always, as in child-oriented cereal advertising). In the cereals I observed, advertisers appear to highlight how many grams of ‘Whole Grains’ it contains per serving or how it is an ‘Excellent Source of Fiber,’ while conveniently omitting other details like sugar content or artificial ingredients. They cover the box’s exterior with claims of health in hopes that a consumer will simply accept them rather than attempt to unmask the product’s potential, less-healthy attributes. Moreover, for
the most part, cereal is a relatively inexpensive food. As noted in a market industry report “[c]onsumers typically purchase cereal during poor economic conditions due to its relatively low cost...” (Sanders 2019:7), and this renders it adequately accessible to larger populations. Finally, in terms of general nutritional value and information, cereal sufficiently yields a wide range in variation and relatively even distribution, while maintaining an observable level of health-oriented advertising.

The physical process of data collection began by choosing two different grocery stores: Acme Markets and Trader Joe’s². I went to each store and collected data by taking photographs of the front, back, and sides of each cereal box. At that point, I had not yet decided which cereals to include in the survey, so I did not have any particular method in choosing which cereals to include in data collection. I gathered photographs for all cereals that met the particular criterion of a minimum of five pieces of linguistic data. I then transcribed the data from the boxes, recording the linguistic data as well as

² This Acme store is located in Bryn Mawr, Pennsylvania & this Trader Joe’s is in Ardmore, Pennsylvania.
cost and nutrition information, into a series of spreadsheets. The distribution of the 42 cereals’ nutrition information is provided below in Figure 1.

In this visualization we see the cereals’ nutrition information as a distribution of their relationships between sugar content, calories, and fiber content in a forty-gram serving of each cereal. Sugar and calories determine the cereal’s position in the scatterplot, and the size of each datapoint itself denotes how many grams of fiber are in a forty-gram serving of that cereal. For each cereal in the dataset, I standardized the serving size to forty grams in order to ensure that the nutritional values across all cereals are compared on the same scale.
Similarly, a few of the datapoints are labeled on the scatterplot to further demonstrate the distribution. The cereals labeled in Figure 1 are considered to be exemplary of both a variation of health-oriented advertising language as well as the range of nutritional values present throughout the data. As such, they will be used throughout this analysis as primary examples. These three cereals include: Kashi GO play Honey Almond Flax Crunch (henceforth: Kashi GO play), Annie's Homegrown Organic Cocoa Bunnies (henceforth: Annie's Cocoa Bunnies), and Post's Shredded Wheat, whose boxes are shown below in Figure 2.

![Figure 2: This figure displays the box packaging of three exemplary cereals. These include: (A) ‘Kashi GO play Honey Almond Flax Crunch’, (B) ‘Annie’s Homegrown Organic Cocoa Bunnies’, & (C) ‘Shredded Wheat.’ These images exhibit the linguistic and aesthetic features attributed to the basic structure & design of cereal packaging for the set of 42 cereals used in this study.](image)

To compare all 42 cereals in terms of ‘health,’ I established a ranking system based on their nutritional information (See: Figure 1). I calculated, for each cereal the ratio\(^3\) of the cereal’s fiber content to its sugar content for a forty-gram serving of that cereal, which resulted in a range of 0.0 to 8.0 in fiber-to-sugar ratio values. The cereal,

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\(^3\) Calculated by dividing the grams of fiber by the grams of sugar in a 40g serving for each cereal. A high fiber-to-sugar ratio indicates a ‘healthier’ cereal because it denotes more fiber in the cereal than sugar.
Kashi GO play, was ranked as number 14 for nutritional value with a 0.66 fiber-to-sugar ratio, Annie’s Cocoa Bunnies was ranked as number 34 of 42 for its fiber-to-sugar ratio of 0.18, and Shredded Wheat was ranked as number 1, claiming the spot as the most nutritious cereal out of the 42, as its fiber-to-sugar ratio is an 8.0. It should be noted that there is an obvious disparity in the distribution of the fiber to sugar ratios, as evidenced by Kashi GO play’s fiber-to-sugar ratio of 0.66 earning it a position in the top half of nutritional rankings, and at 14th place.

The boxes shown above in Figure 2 provide a sense of the general aesthetic format of the cereal boxes as well as a range in the variation of such designs. The structure of this format generally includes the manufacturer's name near the top of the box, followed by the cereal's name below that in larger font. Pictures of the cereal itself are often included in the background and in some cases, accompanied by images of ingredients that might go into making the product. Finally, the blurbs of language used to sell the product, including flavor names as much as health-oriented descriptions and selling points, are strewn about anywhere they might fit, but especially near the perimeters and corners. Similarly, they normally appear in slightly smaller font than the rest of the box’s linguistic content.

Before inspecting any of the linguistic data for the cereals next to their respective nutritional rankings, I predicted that one of two patterns might appear. The first pattern I anticipated was that of higher nutritional rankings corresponding with more or stronger health-oriented advertising language. If the previous pattern did not come to fruition, then I anticipated that a pattern would appear in the nutritionally low-ranking cereals with more targeted health-oriented language attempting to compensate for a lack of actual nutritional value. Due to my previous interactions with cereals, such as
Annie’s Cocoa Bunnies, who have a fairly low fiber-to-sugar ratio yet also emphasize the ‘natural’ or ‘sustainable’ aspects of the product, I concluded that the first pattern I anticipated here would not likely appear, but the second was still possible. In the study to follow, this would realize as a nutritionally low-ranking cereal exhibiting an inverse relationship between its nutritional ranking and its perceived ‘health.’

For the three cereals provided in Figure 2, Table 4 shows the five pieces of linguistic data provided to survey participants. Table 4 also provides basic nutritional information per forty grams of each cereal, but it should be noted that this information was not shown to survey participants for any of the cereals, (unless explicitly part of its advertising language). Similarly, for any of the cereals, the linguistic health cues

**Table 4: Select Linguistic Data Derived from Packaging**

<table>
<thead>
<tr>
<th>Cereal</th>
<th>(A) Kashi GO play: Honey Almond Flax Crunch</th>
<th>(B) Annie's Homegrown Organic Cocoa Bunnies</th>
<th>(C) Post Shredded Wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linguistic Data</td>
<td>· Non-GMO Verified</td>
<td>· We Source Fair Trade</td>
<td>· Excellent source of fiber</td>
</tr>
<tr>
<td></td>
<td>· 9g Protein/Plant Protein/protein-powered cereal</td>
<td>· Oat, Corn &amp; Rice Cereal</td>
<td>· 100% Whole Grain</td>
</tr>
<tr>
<td></td>
<td>· 13g Whole Grains</td>
<td>· &quot;Certified organic food is produced the way nature intended -- without toxic, persistent pesticides, synthetic fertilizers, GMOs, antibiotics, or added growth hormones...&quot;</td>
<td>· Simple Goodness</td>
</tr>
<tr>
<td></td>
<td>· 8g Fiber</td>
<td>· Made with Goodness!</td>
<td>· Non-GMO Verified</td>
</tr>
<tr>
<td></td>
<td>· 500mg ALA Omega-3</td>
<td>· No Artificial Flavors!</td>
<td>· &quot;We were born to live a full, flavorful life.&quot;</td>
</tr>
<tr>
<td>Nutrition Information (per 40g)</td>
<td>· Calories:150.9</td>
<td>· Calories:155.6</td>
<td>· Calories:140.0</td>
</tr>
<tr>
<td></td>
<td>· Fiber: 6.0 g</td>
<td>· Fiber: 2.2 g</td>
<td>· Fiber: 5.3 g</td>
</tr>
<tr>
<td></td>
<td>· Sugar: 9.1 g</td>
<td>· Sugar: 12.2 g</td>
<td>· Sugar: 0.0 g</td>
</tr>
<tr>
<td></td>
<td>· Protein: 6.8 g</td>
<td>· Protein: 3.3 g</td>
<td>· Protein: 4.7 g</td>
</tr>
<tr>
<td></td>
<td>· Fat: 3.8 g</td>
<td>· Fat: 2.2 g</td>
<td>· Fat: 1.0 g</td>
</tr>
</tbody>
</table>

Table 4: This table outlines the 5 pieces of linguistic data and nutrition information for a 40gram serving of the cereals: (A) Kashi GO play Honey Almond Flax Crunch, (B) Annie’s Homegrown Organic Cocoa Bunnies, & (C) Post Shredded Wheat.
displayed in the survey were potentially taken from any of the four prominent sides of the box but were primarily extracted from the front of the box.

In conjunction with the pictures of the cereal boxes themselves (See: Figure 2), preliminary observations of the data presented in Table 4 expose a prominent pattern among the three cereals: the variation in the amount of linguistic data that appears on each of the boxes. Of these three cereals, Annie's is the least nutritious according to its fiber-to-sugar ratio (ranked number 34), yet its advertising language also has the highest word count. Contrastively, the linguistic data of Kashi GO play and Shredded Wheat have relatively similar word counts as well as phrase structures. However, the content of their linguistic data differs greatly from one box to the next, particularly with respect to the presence of quantitative claims versus qualitative claims. For example, as seen in the data of the Kashi GO play cereal, four of the five pieces of linguistic data offer quantitative information about the ‘health’ or nutritional information of the product. Whereas, in the data for Shredded Wheat, its claim of being made of “100% Whole Grain” is the only one of its five cues that is quantitative in content. The simple language of Shredded Wheat compared with the descriptive language used in Annie’s Cocoa Bunnies data supports my prediction of a relationship showing that nutritionally low-ranking cereals utilize language to highlight their ‘good sides,’ whereas, the opposite is true for Shredded Wheat.
5.2 Experimental Design & Methodology

Once I had obtained complete linguistic data of 42 cereals\(^4\), I set out to test my hypotheses (See: Table 3) using a Qualtrics\(^5\) survey to examine how people perceive this linguistic data and how ‘healthy’ or ‘unhealthy’ they believe a cereal to be when provided with this type of data in isolation.

5.2.1 Survey Design: Basic Facets\(^6\)

This survey was structured in such a way to account for information regarding perceived ‘health’ of various cereals as well as differences between those who participate in diet culture and those who do not. Participants were first presented with a statement of informed consent, stating that they “are being asked to participate in a research project examining ‘health’ and ‘wellness’ language used in food marketing.” If they agreed to participate, the first question asked them to provide basic demographic information, including age and gender. This was followed by a few questions regarding their diet history, such as whether they had been on a diet in the past two years, and if they had, they were asked which diet or diets they followed, and whether it was prescribed or suggested by a doctor. After these, participants were asked a few basic self-reported health questions that were concerned with diet and exercise. Finally, each participant was presented with 15 cereal questions. The survey software was set to randomize the cereal questions, showing any 15 out of 42, yet also to maintain an even distribution in the process of randomization. Each ‘cereal question’ gave basic instructions indicating

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\(^4\) An extensive list of all 42 cereals along with their 5 pieces of linguistic data is provided in the Appendix under section 1.6 Individual Cereal Questions.

\(^5\) Qualtrics is an online survey software. I was granted access to this software via Bryn Mawr College.

\(^6\) Every question included in this survey is provided in the Appendix under section 1 Full List of Survey Questions
the use of the linguistic data and then asked the participant how ‘healthy’ or ‘unhealthy’ they would rate a cereal on a 5-point scale of ‘Very unhealthy’ to ‘Very healthy’ when provided with five pieces of an undisclosed cereal’s linguistic data. To demonstrate this scale and the general format of a ‘cereal question’ from this survey, Figure 3 provides an example of this type of question taken directly from a preview of the survey.

5.2.2 Survey Methods
This project required Institutional Review Board approval as it primarily involved human subjects. I received IRB approval on October 20, 2019 and subsequently began distribution of the survey on October 21, 2019. The survey remained open for fourteen days, ending response collection on November 4, 2019.

For this survey’s response collection, my intention was to sample members (18+) years) of the general public. However, given the approach I took with respect to the

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7 Letter of Approval is provided in Appendix under section 2 Bryn Mawr College IRB Letter of Approval
survey’s distribution, I discovered some limitations to this, (which I will describe shortly). I expected participants from a range of backgrounds. But again, given the distribution method, it was anticipated that the sample would likely skew towards people in their 20’s-30’s from the northeastern US. In order to participate, respondents were required to be over the age of 18. Likewise, the survey did not target any vulnerable populations.

To distribute this survey, I shared it on each of my personal social media platforms, including Facebook, Twitter, Snapchat, and Instagram, as well as by word of mouth and personally asking friends and family via text message and phone call to complete the survey and pass it on to their friends and family. Within the realm of my social media platforms, I adjusted my privacy settings so the survey could be publicly viewed and shared on my own newsfeed, and in groups, as well as on my ‘Story’ on both Instagram and Snapchat. Similarly, my adviser shared the public post with this survey on Facebook and retweeted it on Twitter.

The circulation of this survey via social media and among my peers and their peers, is a distribution method called ‘convenience sampling.’ I chose this method because it was the approach that best fit my purposes and constraints of time and resources. However, it is crucial to recognize the limitations that accompany convenience sampling because this type of distribution is rarely able to acquire a representative sample. In my case, it yielded a very highly skewed sample likely due to the constraint of context, as this research was primarily conducted within the setting of a historically women’s college. Since I was not able to obtain a representative sample, there is high potential for bias which cannot be measured. This must be taken into consideration in the analysis of the survey’s results because it means the interpretations
of these results and the inferences made from them are simply not applicable to the population at large as they can only concretely tell us about this study’s particular sample (Lavrakas 2008).

5.3 Results

The results of this survey present a number of thought-provoking findings that suggest a relationship between the language and the perceived ‘health’ of the 42 cereals. I begin this results section in 5.3.1 discussing the respondents of the survey and their demographic information. Afterward, I move into section 5.3.2, where I describe the ratings of perceived ‘health’ that come from the responses to the cereal questions. Subsequently, in section 5.3.3, I examine the presence and frequency of quantitative claims in conjunction with the perceived ‘health’ scores and nutrition rankings. Finally, the last section 5.3.4 details the statistical analyses I completed, testing regression models that suggest what features and variables are the strongest indicators of relationships.

To analyze the results of my survey, I used R\(^8\) to create any graphics and visualizations and to complete statistical analyses. This required exporting the response data from Qualtrics and importing it to RStudio, the integrated development environment for R.

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\(^8\) R is a computer programming language and free software environment used for statistical computing.
5.3.1 Participants

The survey received 313 responses in total. The demographic information of the respondents is shown in Figure 4 below. Of the 313 respondents, 244 individuals identified as ‘Female,’ 52 individuals identified as ‘Male,’ 12 individuals identified as ‘Non-binary,’ and 5 individuals identified as ‘Other.’ Similarly, the results for the demographic question asking respondents to provide their age shows that 21 years was the most frequent response, with 52 respondents identifying this as their age. The average age of all respondents was 33.7 years. The range of responses for age spans across 59 years, where the youngest response value was 18 years and the oldest response value was 77 years. It is important to note that 77 of the 313 individuals did not identify their age. The distribution described here is visualized in Figure 4.
This histogram in Figure 4 presents a visualization through which the data, as detailed above, becomes more concrete. This data displays an extremely positively skewed distribution both in terms of both age and gender. The peak of this distribution is very evident, and, as such, it demonstrates that the majority of participants belong to the age-group of 21 to 24; 88 participants coming from all four gender response categories belong in this age-group, yet a large majority of them, comprised of 66 individuals, identify their gender as female.
5.3.2 Perceived Health

From the data, I used the responses to the 42 ‘cereal questions’ in order to calculate a perceived ‘health’ score for each cereal. Firstly, for all responses to each respondent’s fifteen randomized cereal questions, I transposed the participants’ cereal rating from the 5-point scale to numeric values from 1 to 5 correspondingly, with 1 being “Very unhealthy” and 5 being “Very Healthy.” I then calculated an average by summing the frequency of responses for each cereal and then multiplying each numeric scale value (1-5) by its corresponding frequency number of responses provided for each question. Following this, I added these multiplied frequency values into a total of rating values, and finally, I divided this total of rating values by the number of total responses.
provided for each cereal. This produced the average ‘health’ score for each of the 42 cereals. The distribution of the cereals’ average ‘health’ scores is displayed in Figure 5.

![Calculated Average 'Health Scores' from Survey Responses of 42 Cereals](image)

**Figure 5:** This is a histogram showing the distribution of the average ‘health’ scores calculated by finding the mean of the ratings provided by respondents for each of the cereals. This visualization exhibits the variation in the health scores of the 42 cereals. Along the x-axis, the average ‘health’ score is provided on a scale of 1-5. The y-axis shows the number of cereals that are assigned to scores for each bar. Mean and median lines are provided to aid interpretation of the distribution of scores.

The distribution of the average ‘health’ scores in Figure 5 demonstrates a slight negative skew in these average scores. Moreover, this histogram shows that ten different cereals were awarded average ‘health’ scores between 3.4 and 3.5. The mean of the average health scores, as indicated by the solid line in the visualization, was a score of 3.38, while the median health score, indicated by the dashed line, was a score of 3.49. The lowest health score, awarded to Fruity Pebbles cereal, was a score of 2.07 and the highest score, a 4.15, was given to a cereal called Ezekiel 4:9 Sprouted Grain Crunchy Almond Cereal.
5.3.3 Differences between Dieters & Non-Dieters

In order to further test my second hypothesis (See: Table 3) regarding the differences in perception of cereals between dieters and non-dieters, I grouped and separated their responses of ‘health’ ratings for each cereal. I examined the trends for each of the previously-referenced cereals: Kashi GO play, Annie's Cocoa Bunnies, and Shredded Wheat. Participants were provided with only the linguistic data for each of these cereals (See: Table 4 to examine the corresponding linguistic data for the results presented in Figure 6). Figure 6 is a graphic showing the comparison of responses between dieters and non-dieters for Kashi GO play cereal.

![Graph showing differences in dieters' & non-dieters' responses: Kashi GO play](image)

**Figure 6**: This is a bar graph showing the differences in health ratings awarded to Kashi GO play cereal by dieters and by non-dieters. This visualization exhibits the overall trend in health ratings of this cereal. Along the x-axis, the health rating is provided on a scale of 1-5. The y-axis shows the percent of responses out of the total amount of respondents. Dieters and non-dieters are separated by color.
This visualization displays a positive trend in the data and, thus, a positive trend in the overall perceived health of this cereal. For the most part, relatively high percentages of the responses for this cereal were ratings of 4 and 5, which lends to its overall perceived ‘health’ score of 4.03. This cereal, Kashi GO play, ranked as the second highest for its average perceived ‘health’ score, yet, it ranked as number 14 in terms of nutritional value carrying a 0.66 fiber-to-sugar ratio. This graphic also tells us that more dieters gave this cereal the scores of 4s and 5s than non-dieters. Contrastively, a significantly larger percentage of non-dieters rated this cereal as a 3 compared to dieters. None of the respondents rated this cereal as a 1 or “Very unhealthy.”

I recreated this comparison of responses between dieters and non-dieters for Annie’s Cocoa Bunnies. Figure 7 depicts the visualization of this comparison. (See: Table 4 to examine the corresponding linguistic data for the results presented in Figure 7).
This graphic shows a different trend in the health ratings given to this cereal than the previous visualization (See: Figure 6). The responses for Annie's Cocoa Bunnies average out to a perceived ‘health’ score of 3.72, earning it a 7th place rank in perceived health. However, at the same time, it exists at the completely opposite end of this scale with its nutritional rank of 34 out of 42 for its low fiber-to-sugar ratio of 0.18. In this visualization, the responses appear to exhibit a curve-like trend in the distribution of its rating percentages. Dieters responses for this cereal rated it predominantly 3s and 4s, or “neither healthy nor unhealthy” and “somewhat healthy.” The opposite relationship is true for rating of 5, where a larger percentage of non-dieters than dieters responded with a rating of 5, or “Very healthy.” Once again, none of the respondents rated this cereal as a 1 or “Very unhealthy.”
Finally, I recreated this comparison of responses between dieters and non-dieters for Shredded Wheat. Figure 8 illustrates the graphic for this comparison. (See: Table 4 to examine the corresponding linguistic data for the results presented in Figure 8).

The distribution pictured in this visualization is unique from both of the preceding graphical comparisons. Firstly, it shows that some dieters rated this cereal as a 1, or as “Very unhealthy.” It also demonstrates a peak in dieters’ responses with a rating of 4. As for ratings of 3 and 5, non-dieters were apparently more inclined to rate this cereal more highly than dieters did in these categories. This distribution is slightly negatively skewed. This cereal was ranked as the most nutritious cereal out of the 42 according to its high fiber-to-sugar ratio of 8.0. However, its average perceived ‘health’ score of a 3.40 earned it a spot at 29th place on the list of perceived ‘health’ scores. This is a fairly
drastic discrepancy between the nutritional reality of the cereal and its perceived level of nutrition.

In addition to these three exemplary cereals, I noted one cereal divergent from the pattern among the low-scorers when examining the raw data of the perceived health scores with respect to nutritional ranking based on fiber-to-sugar ratio. For the most part, low-scoring cereals correlated with relatively low fiber-to-sugar ratios. However, Wheat Chex deviated from this pattern, as it was awarded a 2.96 average ‘health’ score and ranked as number 38 out of the 42 cereals for this score. However, similar to the discrepancy exhibited in Shredded Wheat’s real and perceived nutrition, it is also ranked nutritionally high, as number 8 of the 42 cereals for its fiber-to-sugar ratio. This departure from normal trends in the raw data prompted the creation of a visualization of the differences in average health ‘score’ ratings between dieters and non-dieters responses, as pictured in Figure 9. Similarly, I provide the linguistic data for this cereal, as presented in the survey, here:

- Oven Toasted Wheat Cereal
- 52g Whole Grain per serving
- No High Fructose Corn Syrup | No Artificial Flavors or Colors
- Partially Produced with Genetic Engineering
- Contains Wheat Ingredients
This visualization depicts a trend in the differences between dieters and non-dieters that does not appear for any other cereal in the dataset. Only looking at dieters’ responses, a positively skewed distribution appears. Nearly 25% of the respondents that were dieters rated this cereal as a 2, meaning “Somewhat unhealthy.” The opposite distribution appears if you only examine the non-dieters’ responses, where it is negatively skewed and peaks at just over 16% of the respondents that were non-dieters considered Wheat Chex to be a ‘Somewhat healthy’ cereal.

**Figure 9:** This is a bar graph showing the differences in health ratings awarded to Wheat Chex cereal by dieters and by non-dieters. This visualization exhibits the overall trend in health ratings of this cereal. Along the x-axis, the health rating is provided on a scale of 1-5. The y-axis shows the percent of responses out of the total amount of respondents. Dieters and non-dieters are separated by color.
This curious trend in both the dieters’ and non-dieters’ data compelled me to go back to examine the raw data at least once more, which revealed that there are, in fact, a couple more cereals that appear to deviate from the expectation of nutritionally high-ranking cereals to display similarly high perceived ‘health’ scores and vice versa. While Wheat Chex, and to some degree, Shredded Wheat, were the only cereals that had a higher nutritional ranking and fiber-to-sugar ratio than their perceived health score, I also noted three cereals that displayed the opposite pattern, toting high average perceived ‘health’ scores, yet significantly lower-ranking nutritional values. These three cereals are Annie’s Cocoa Bunnies, Honey Bunches of Oats, and Trader Joe’s Honey Nut O’s.

5.3.4  Quantitative Claims vs. Health Score vs. Nutrition Information

In section 5.3.3, I explored a number of graphics that revealed the differences in dieters’ and non-dieters’ rating responses for 4 different cereals. As in the case of Wheat Chex (See: Figure 9), it became apparent that not all of the cereals conformed to the anticipated patterns. Instead, I found that according to the survey data, Wheat Chex and Shredded Wheat were perceived as far less healthy than they actually are according to their nutritional rankings, whereas Annie’s Cocoa Bunnies, Honey Bunches of Oats, and Trader Joe’s Honey Nut O’s were all thought to be significantly healthier than their nutritional rankings would permit. The unearthing of these last few points of deviation prompted deeper consideration of what might be causing the divergences in this data just as much as the general trends.

I looked back at the cereals’ nutritional rankings within my dataset based on fiber-to-sugar ratios next to the data of the cereals’ perceived ‘health’ scores. When
browsing the linguistic data next to these, I noticed the emergence of a pattern connecting these differing cereals together; with Honey Bunches of Oats as the most prominent case, a handful of cereals stood out because they appeared to be potentially profiting from the influence of numeric values in their health claims or linguistic data. For example, as displayed in Table 4, Kashi GO play’s linguistic data claims: “9g Protein,” “13g Whole Grains,” and “8g Fiber.” In order to test for these types of relationships, I returned to the linguistic data and tallied the number of quantitative and qualitative claims that were provided to the survey participants for each cereal. Figure 10 shows a visualization of the relationship between quantitative claims and average ‘health’ scores.

**Figure 10:** This is a scatter plot displaying the relationship between the number of quantitative claims that appear in each cereal’s set of linguistic data and its average ‘health score’. The x-axis displays the number of quantitative claims, ranging from 0-5. Whereas, the average ‘health’ score is along the y-axis. The blue line indicates the line of best fit. The correlation coefficient is (R=0.54).
This scatter plot shows a positive linear relationship between the number of quantitative claims and perceived average ‘health’ score. Given the correlation coefficient of $R=0.54$, this relationship is considered to be a strong positive linear relationship. Be that as it may, this plot does not only display this strong relationship, it equally reveals the number of cereals that correspond to each of the quantitative claim frequencies that a cereal’s linguistic data could have featured. In doing so, it demonstrates an uneven distribution of these cereals with quantitative claims. In fact, there is only one cereal with 5 instances and one cereal that has 4 instances of quantitative data. Likewise, a majority of the cereals only possess 1 piece of quantitative data out of their 5 total pieces of linguistic data. However, it should also be noted that neither plot point on $x=5$ nor $x=4$ is considered to be an outlier.

Furthermore, the moderately strong linear relationship in Figure 10 prompted me to consider the possibility of other variables at play or that may display similar relationships. The first that came to mind was that of the cereals’ actual nutritional ranking and its average ‘health’ score. The following visualization, in Figure 11, portrays the relationship between these two variables.
This relationship, given its correlation coefficient of $R=0.44$, also appears to have a moderately strong positive linear relationship. However, once again, this visualization shows an uneven distribution of the data, with a cluster of cereals between the 0 to 1.0 range and a lone cereal bearing a high fiber-to-sugar ratio of 6:1.

### 5.3.5 Statistical Models

All of the relationships and distributions presented in the research portion of this thesis sought to paint a picture of what the raw data really tells us about the relationships between the perceived ‘health’ of a cereal and the language used to sell it. By creating
statistical models of the same relationships, I dug a bit deeper, as these tests allow one to
determine whether to further advocate the patterns perceived in the graphical
analyses of the data or to reject the hypotheses altogether.

I examined a series of linear models to observe the inner workings of the average ‘health’ score. Having run a number of linear regressions, I first examined the univariate relationships between the average ‘health’ score variable as the dependent variable and the cereals’ varying nutritional components, including calories, sugar, protein, fat, and fiber, as the independent variables. These regressions presented the relationship between ‘health’ score and fiber ($p=9.13\times 10^{-5}$) as the most significant, followed by that of ‘health’ score and sugar ($p=.0021$). Similarly, the Adjusted R-squared value of the relationship between ‘health’ score and fiber was 0.298, which suggests that 29.8% of the variability in ‘health’ scores can be accounted for by the variability in the fiber content of a cereal. Furthermore, this relationship’s model also consistently yielded the best (lowest) results in two tests of best fit (Akaike information criterion (AIC) and Bayesian information criterion (BIC)), which suggests that it is appropriate to reject the null hypothesis that suggests no relationship exists between the average perceived ‘health’ score and the fiber content of the cereals.

After these univariate analyses, I then ran multivariate regressions to explore whether some combination of these nutritional components could have a greater effect on the perceived ‘health’ score. These regressions resulted overall, in very low $p$-values, which suggests that they all might allow the rejection of a null hypothesis under this model. The lowest $p$-value, however, resulted from the model testing the relationship between ‘health’ score and the combination of fiber and sugar contents, ($p=4.506\times 10^{-5}$). The Adjusted R-squared value of this model indicates that 36.3% of the variability in the


‘health’ scores can be explained by the variability of the combined variable of fiber and sugar contents. Similarly, this model provided the best results out of the AIC and BIC of each multivariate model, suggesting that it is, in fact, the model of best fit. These two sets of regression analysis give us a view of what kinds of ingredients in a cereal might act as an indicator to the consumer that it carries more nutritional value than another.

Following this, I completed linear analyses of the relationships between average ‘health’ score and quantitative claims as well as the ‘health’ score with the fiber-to-sugar ratio. In a univariate analysis, the relationship between ‘health’ score and the quantitative claims variable produced the lowest p-value ($p = .00019$) and yielded an Adjusted R-squared value of 0.279, along with the best scores in the AIC and BIC tests. This tells us that 27.9% of the variability in the ‘health’ scores of the cereals could be explained by the variability in the prevalence of quantitative claims that appear as linguistic advertising cues. However, a multivariate analysis pushes this even further, reporting that the relationship between ‘health’ score and the combined variable of quantitative claims and the fiber-to-sugar ratio has a p-value smaller than that of the univariate regression model ($p = .00013$), consistently provided the best scores in the AIC and BIC tests, and, with an Adjusted R-squared value of 0.344, this model reports that the combined quantitative claims and fiber-to-sugar ratio variable can account for approximately 34.4% of the variability in the perceived ‘health’ scores.
5.4 Discussion

The statistical and graphical analyses of these relationships have provided significant insight into the perception of ‘health’s’ emergence into the food sphere, consumer behavior when confronted with it, as well as how both of these can influence food product marketing at large. In this survey, the distribution of the perceived ‘health’ scores (See: Figure 5) demonstrates the overarching trends of the responses as a relatively centralized-positive perception of how ‘healthy’ these cereals sound via their linguistic advertising cues. Though slight, the positive trend in this distribution, alludes to the potential for bias via my participants’ preconceived beliefs about cereal as ‘healthy’ or by means of catering their responses to what they thought I would like to see, based on their understanding of my study, or perhaps, the linguistic advertising cues of cereals that I had chosen were, on average, exhibited more wellness-language than I had previously perceived. This last avenue, which I believe to be likely, would imply that my first hypothesis(See: Table 3), that linguistic cues do have an effect on one’s perception, is viable, (and even worked on me without my awareness).

The outlying cases of Honey Bunches of Oats, Trader Joe’s Honey Nut O’s, and that of Wheat Chex may represent opposing trends in the raw data, but, as agents of diversion, they not only act tools of comparison for the pattern-following examples, they also attest to the acceptability of my first hypothesis. In the case of Honey Bunches of Oats and Trader Joe’s Honey Nut O’s, their high scores for perceived ‘health’ yet low rankings in nutrition primarily demonstrate that the linguistic data shown during the survey for each of these cereals must have influenced the participants’ ratings. This, once more, promotes the acceptance of my first hypothesis.
In contrast to these Honey-flavored cereals, Wheat Chex, experienced the opposite pattern, where it received a fairly low perceived ‘health’ score while it holds a high nutritional ranking. This could be, at least partially due to the simplistic nature of its advertising cues presented in the survey; Wheat Chex’s linguistic pieces of data (See: bottom of p.41) don’t particularly signal any strong influence from diet culture or wellness trends, as many of the others cereals’ language does. Furthermore, the responses garnered from Wheat Chex’s question in the survey depict an extremely unique distribution (See: Figure 9) within this dataset: dieters’ responses were very positively skewed awarding the cereal low ‘health’ scores, while non-dieters presented the exact opposite distribution, rating it, generally, as a ‘healthy’ cereal. However, the opposing state of this cereal’s perceived ‘health’ rating and its nutrition ranking contributes directly, once more, to the acceptance of my first hypothesis. This is because, even though there is an absence of wellness language, this case demonstrates that even advertising language that has no overt appeal to dieters can, in effect, influence one’s perception as evidenced by dieters’ and non-dieters’ differing ratings. But it also shows to what degree advertising language’s efficacy relies on staying current, unless, of course, your target market does not keep current themselves.

The distribution of dieters and non-dieters as portrayed in Wheat Chex’s Differences visualization (See: Figure 9) is actually what I had anticipated seeing throughout the response data, when I had originally developed my second hypothesis. This, hypothesis suggests that dieters would be more likely to consider a cereal unhealthy, meaning they would exhibit lower overall scores throughout the survey. However, with the case of Wheat Chex, one could even argue that the trend exactly opposite to my second hypothesis could be true. Because, under this survey’s
circumstances of linguistic cues in isolation, as soon as any wellness language disappeared, a large majority of the dieters that answered this question deemed the cereal relatively unhealthy, even though it is actually more nutritious than a majority of the cereals included in the survey.

This misstep could be due to a couple of factors. As a dieting participant in the survey, who is fully enmeshed in diet culture, there are two main strategies one might have utilized while answering the survey’s cereal questions. The first is association: on a diet that restricts and clearly outlines which types of food are ‘good’ and ‘bad,’ a dieter might have recognized the linguistic advertising cues for a popular cereal, such as Cinnamon Toast Crunch, without *knowing* that it is CTC. The data is presented as follows:

- mmm. REAL cinnamon
- Crispy, Sweetened Whole Wheat & Rice Cereal
- 16g Whole Grain per serving
- Contains Soy and Wheat Ingredients
- Partially Produced with Genetic Engineering

Now, gluten is a food to avoid, so any mention of wheat is a telltale sign of an unhealthy cereal...Oh, and it’s partially produced with genetic engineering, that is definitely a no-go. So, this one got a very quick, push of the “Very unhealthy” button, and the next question comes along:

- Oven Toasted Wheat Cereal
- 52g Whole Grain per serving
- No High Fructose Corn Syrup | No Artificial Flavors or Colors
- Partially Produced with Genetic Engineering
- Contains Wheat Ingredients

As someone who was just mortified by the same ingredient in the very last question, ‘wheat’ and another claim of being ‘Partially Produced with Genetic Engineering,’ are now merely associations with cereals like Cinnamon Toast Crunch that are already
considered ‘bad’ according to the rules. So, yet again, Wheat Chex got another “Somewhat unhealthy” rating to add to the pile.

The other possible scenario that could explain Wheat Chex’s upside-down perceived ‘health’ standing is that, a dieter participant also deeply enmeshed in diet culture, could have looked at the terms:

- Oven Toasted Wheat Cereal
- 52g Whole Grain per serving
- No High Fructose Corn Syrup | No Artificial Flavors or Colors
- Partially Produced with Genetic Engineering
- Contains Wheat Ingredients

And they might have glanced over them, but quickly realized that they don’t see any words they encounter in their daily life. They don’t eat these foods and there were no words listed there that clearly indicated to what ‘health’ is in their mind, so it must be unhealthy, then.

These three outlying cases of cereal demonstrate each facet of how diet culture has so many individuals wrapped around its bony finger. The Honey-flavored cereals highlight how advertisers’ ‘sweet words’ can entice in such a way that we allow ourselves to believe that a façade can be real and palpable. However, these ‘sweet words’ often don’t even come in the form of words, as marketers have learned how to apply and execute linguistic techniques with proficiency.
6 Conclusions
What these above scenarios show, aside from the potential ways Wheat Chex was rated so poorly by dieters, is how pervasive diet and ‘wellness’ culture really can be. Its influence can affect a person's life in detrimental ways. In fact, it bleeds into our perceptions of our everyday effecting the way we talk, the way we shop, the way we look at each other, and the way we look at ourselves. So, for food product marketers to sell ‘health’ in a culture that idealizes thinness means to capitalize on an individual’s inability to distinguish their identity from those around them. Because of their ubiquity, claims of ‘health’ and ‘wellbeing’ can pull a person into the depths of diet culture where control is so easily lost.
7 Bibliography

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Sole-Smith, V. (2018). *The Eating Instinct: food culture, body image, and guilt in*


8 Appendix
Full List of Survey Questions:

1.1 Informed Consent:

1. You are being asked to participate in a research project examining ‘health’ and ‘wellness’ language used in food marketing led by a student in the Linguistics Department at Bryn Mawr College for senior thesis research. Your participation will take approximately 10-15 minutes in total. You will be asked to read lists of words and make judgments based on your perception of those words.

The risk in participating in this study is minimal, although if for any reason you should experience discomfort or wish to withdraw from the study, you are free to skip a demographic question, or discontinue participation at any time by closing the window. Should you choose to skip a question or discontinue participation, there will be no negative repercussions. This research will have no direct benefit to you, but your participation will contribute to our understanding of the linguistic power of food choice. All provided information will be kept private and anonymous, and your data will be associated with a participant number, ensuring that your identity will have no connection to this study. No identifiable personal data will be collected or published. If you have any questions, comments, or concerns, please feel free to contact researcher, Lexi Lampard (llampard@brynmawr.edu) or faculty advisor Emily Gasser (egasser1@swarthmore.edu) at any time.

BY CLICKING ‘I AGREE’ BELOW, YOU HAVE INDICATED THAT YOU ARE AT LEAST 18 YEARS OF AGE AND THAT YOU HAVE READ THE ABOVE AND AGREE TO PARTICIPATE IN THIS STUDY. OTHERWISE, PLEASE CLOSE THE WINDOW TO TERMINATE YOUR PARTICIPATION IN THIS STUDY.

a. I agree. (Checkbox)

1.2 Age & Gender Qs:

2. Please provide your age:
   a. Dropdown box: 18-99

3. Please provide your gender:
   a. Male
   b. Female
   c. Non-Binary
   d. Prefer not to say
   e. Other: (text box)

1.3 Self-Reported Diet History

4. Have you been on a diet in the past two (2) years?
   a. Yes
   b. No

5. If you answered 'Yes' to the previous question, please select any/all diets you may have followed in the past two years.
   a. I have not followed a diet in the past two (2) years.
   b. Vegetarian
   c. Vegan
   d. Dairy-free
   e. Gluten-free
   f. Pescatarian
g. Low-Sodium  
h. Mediterranean  
i. Low-Carb  
j. Keto / Ketogenic  
k. Low FODMAP  
l. Intermittent fasting  
m. Paleo  
n. Whole 30  
o. Atkins Diet  
p. Juice Cleanse  
q. Military Diet  
r. Other: (Please list all diets you may have followed that do not appear in the list above.)

6. If you have been on a diet in the past two (2) years, was this diet prescribed/suggested by a doctor?  
   a. Yes  
   b. No

1.4 Self-reported Health Questions

7. How often do you choose your food with 'health' in mind?  
   a. Never  
   b. Sometimes  
   c. About half the time  
   d. Most of the time  
   e. Always  

8. How often do you exercise?  
   a. Rarely  
   b. Once a week  
   c. 2-3 times a week  
   d. 4-6 times a week  
   e. Daily

1.5 Introduction to Cereal Questions

9. Instructions:  
   Imagine you are in the cereal aisle of your grocery store. Each question will show you a list of words or phrases found on cereal box packaging. Based on the list, please rate how 'healthy' or 'unhealthy' you would find that box of cereal.

1.6 Individual Cereal Questions

Notes on format:  
Each question had the following instructions at the top:

- “Based on the list of words or phrases provided below, please rate how 'healthy' or 'unhealthy' you would find this box of cereal.”

Similarly, in order to answer the question, each question was accompanied by the following scale:
Due to the repetitive format of the cereal questions, in this appendix, I only provide the 5 pieces of linguistic data the respondents saw.

I will also provide the name of each cereal, BUT survey respondents did NOT see the names of the cereal. Respondents were only provided with the instructions (above), five pieces of linguistic data, and the scale from 'Very unhealthy' to 'Very healthy'.

1. Kashi GO play: Honey Almond Flax Crunch
   - NON_GMO Verified
   - 9g Protein/Plant Protein/protein powered cereal
   - 13g Whole Grains
   - 8g Fiber
   - 500mg ALA Omega_3

2. Shredded Wheat: Original Spoon Size Cereal
   - Excellent source of fiber
   - 100% Whole Grain
   - Simple goodness
   - NON-GMO Verified
   - We were born to live a full, flavorful life.

3. Corn POPS
   - Sweet crispy crunch
   - NO high fructose corn syrup
   - Colors and flavors from natural sources
   - Our best in every bite
   - Made with USA Corn

4. Special K: Honey Almond Ancient Grains
   - Designed to fuel you... with Magnesium, Calcium, Vitamin DD
   - Protein 15g
   - The best thing is, there’s no compromise on taste. We promise a bowl full of rich flavors and delicious textures that work hard for you, getting the nutrition you need to power your day and reach your potential.
   - Whole grain is the first ingredient
   - Powering your strength/How much fuel can you pack into a single spoon?

5. Kashi Organic Blueberry Clusters
   - USDA Organic
   - 3g Fiber
   - 25g Whole Grains
   - Naturally Flavored
   - A reference to farmland

6. Open Nature Flakes & Clusters Cereal
   - Naturally Flavored
• 28g Whole Grains per serving
• food should be simple... made with ingredients from nature without any artificial flavors.
• No Artificial Flavors or Colors
• 50% or more of the grain is whole grain

7. Annie’s Homegrown Organic Cocoa Bunnies
• We Source Fair Trade
• Oat, Corn & Rice Cereal
• Certified organic food is produced the way nature intended... without toxic, persistent pesticides, synthetic fertilizers, GMOs, antibiotics, or added growth hormones. By choosing certified organic products YOU are helping to enhance soil and water quality, improve habitats, conserve biodiversity, and support organic farmers.
• Made with Goodness
• No Artificial Flavors No Synthetic Colors No High Fructose Corn Syrup

8. Honey Bunches of Oats: Honey Roasted
• Made with Natural Wildflower Honey
• 4 Wholesome Grains and 9 essential vitamins and minerals
• Heart Healthy
• 0g Trans Fat, 0g Saturated Fat, 0mg Cholesterol per serving
• wholesome and delicious

9. Fruity Pebbles
• Sweetened Rice Cereal
• Naturally and Artificially flavored
• Gluten Free
• Partially produced with genetic engineering
• Vitamin A and Vitamin D

10. Special K
• Toasted Rice Cereal
• Made with Folic Acid, B Vitamins, and Iron
• Powering your Strength
• How much goodness can you pack into a single spoon? Well, we’ve found it’s actually quite a lot. That’s why we’ve made it our mission to ensure that our cereal bursts with the essential nutrients you need to make you feel strong inside.
• No Artificial Colors or Flavors

11. Cheerios
• Gluten Free
• made with 100% Whole Grain Oats
• can help Lower Cholesterol as part of a heart healthy diet
• No Artificial Flavors | No Artificial Colors
• Help Make Your Heart Happy by doing what you love and eating heart healthy foods

12. Multi Grain Cheerios
• made with 5 Whole Grains
• 100% Daily Value of 9 Vitamins & Minerals
• Gluten Free
• ...you’ve got everything to start you day right.

13. Very Berry Cheerios
- Flavored with Real Fruit and other natural flavors
- Gluten Free
- Sweetened Whole Grain Oat Cereal
- Berries and breakfast go together like cereal and milk. Gluten free and made with 100 percent whole grain oats, we hope you enjoy the goodness of our cereal, bursting with the taste of real fruit
- 15g Whole Grain per serving

14. Corn Chex
- Whole Grain is the 1st Ingredient
- Gluten Free
- No High Fructose Corn Syrup | No Artificial Flavors, Colors or Preservatives
- Make a SPLASH with the Great Taste of our cereal in your bowl
- Proud Sponsor of Celiac Disease Foundation

15. Honey Nut Chex
- Made with Real Honey
- Naturally Flavored
- 14g Whole Grain per serving
- Gluten Free
- No High Fructose | No Artificial Colors or Flavors

16. Wheat Chex
- Oven Toasted Wheat Cereal
- 52g Whole Grain per serving
- No High Fructose Corn Syrup | No Artificial Flavors or Colors
- Partially Produced with Genetic Engineering
- Contains Wheat Ingredients

17. Cinnamon Toast Crunch
- mmm. REAL cinnamon
- Crispy, Sweetened Whole Wheat & Rice Cereal
- 16g Whole Grain per serving
- Contains Soy and Wheat Ingredients
- Partially Produced with Genetic Engineering

18. Reese’s Puffs
- Whole Grain is Always the 1st Ingredient
- Sweet & Crunchy Corn Puffs
- Made with Real Peanut Butter
- 11g Whole Grain per serving
- Produced with Genetic Engineering

19. Life
- Good Source of Calcium
- No High Fructose Corn Syrup
- 20g Heart Healthy Whole Grains
- Life is full of beautiful moments
- Excellent Source of B Vitamins

20. Total
- 110 Calories per serving
- 100% Whole Grain Flakes
- Our Cereal gives 100%* so you can be your 100%.
• * 100% Daily Value of 11 vitamins and minerals. *
  - Get the most out of your day by eating a fortified cereal with 100% of 11 essential vitamins and minerals.
  - No high fructose corn syrup | No colors from artificial sources | No artificial flavors

21. Frosted Mini Wheats
  - Simple Inside
  - made with 100% Whole Grain
  - 100% daily value of Iron & Folate
  - We support U.S. Farmers to Grow Grains Responsibly and Sustainably. Made with North American Grains.
  - Excellent source of Fiber | 11g of Protein with 3/4 cup of skim milk 6g

22. Raisin Bran
  - Simple Inside. Excellent Source of Fiber. No Artificial Colors or Flavors.
  - Made with Real Fruit
  - ...Fiber, like bran fiber...
  - Rise, Eat, Shine, Repeat. Smile your way through the day Make Mornings Amazing
  - Heart Healthy for a feel-good start to your day

23. Grain Berry Multi-Bran Flakes
  - with ONYX Sorghum
  - Sun Activated Antioxidants
  - 70% Less Sugar than other cereal
  - Ferocious Defense Against Free Radical Threats

24. Grape Nuts
  - Power Packed Nutrition
  - Excellent Source of Fiber
  - 100 percent of the Daily Whole Grain Recommendation
  - NON_GMO Verified
  - No Added Sugar

25. Great Grains Cereal
  - 4g Fiber. 23g Whole Grains. Heart Healthy.
  - Absolutely delicious and now NON_GMO Verified
  - Naturally Flavored
  - Every bowl contains 11 essential vitamins & minerals
  - 50% of more of the grain is whole grain

26. Barbara’s Peanut Butter Puffins Cereal
  - Made with Real Peanut Butter
  - 9g Total Sugars per serving
  - NON_GMO Verified
  - We believe in better health and better taste. We believe in better breakfasts. We believe in better options like whole grains and NON_GMO ingredients. Better is a simple idea that holds a whole bunch of promise. That’s why we’ve believed in better from the start.
  - Vegan

27. Organic Honey Crunch’n Oats
  - USDA Organic Organic from the Source.
Doesn’t it feel good to know where your food comes from? At [Brand Name] we carefully select producers who meet organic farming standards and share our commitment to organic agriculture. That’s our promise.

- low in fat
- provides 12 grams of whole grain goodness in every serving.

- Always Organic
- 5g Protein per serving.
- 6 Ancient Grains.
- Real Crunchy Cereal and it’s not just for hippies ... a super crunchy, fiber-rich breakfast you can’t help but love. And with such simple, wholesome ingredients ... you'll see how good organic food can be.
- NON_GMO Verified

- 3g Fiber per serving
- NON-GMO Verified
- Certified Gluten Free
- USDA Organic
- our cereal makes for an undeniably delicious gluten free breakfast. Made with wholesome grains like corn, quinoa, and amaranth plus flax seeds, natural vanilla and sweet sugar cane ... you'll see how good gluten free can be.

30. Kashi Autumn Wheat Organic Whole Wheat Biscuits
- Baked with a Touch of Sweetness
- USDA Organic
- 7g Fiber, 7g Protein, 53g Whole Grains
- Vegan
- NON-GMO Verified

31. Kashi Cinnamon Harvest Organic Whole Wheat Biscuits
- USDA Organic
- NON-GMO Verified
- Baked with Sweet Cinnamon
- 7g Fiber, 7g Protein, 52g Whole Grain
- Vegan

32. Kashi Cinnamon French Toast
- NON-GMO Verified
- Sourced from Sustainable Farmland
- 5g Fiber, 6g Sugars
- Vegan
- 14g Whole Grains per serving

33. Ezekiel 4:9 Sprouted Grain Crunchy Cereal Almond
- Certified Organic Grains
- Sprouted Grain Crunchy Cereal
- 6g Dietary Fiber, 8g Protein, <1g Sugar
- Our cereals contain NO refined sugar, preservatives, artificial colors or flavors, NO shortening, and NO cholesterol.
- Your Body and Taste Buds will Know the Difference.
34. Open Nature Flakes & Clusters Cereal
- No Artificial Flavors or Colors
- 31g Whole Grains per serving
- We believe food should be simple ... made with ingredients from nature without any artificial flavors.
- Reference to Nature
- 50% or More of the Grain is Whole Grain

35. Kashi GO rise: Original
- 12g Protein/ Plant Protein/ Protein-Powered Cereal
- 8g Whole Grains/ 13g Fiber
- NON-GMO Verified
- Multigrain
- Pour, Crunch, Enjoy. Now you’re ready.

36. Trader Joe’s: Joe’s O’s
- Fortified with Six B Vitamins Including 50percent Folic Acid
- 1 Gram of Sugar per Serving
- Low in Sugar, Low in Fat, Excellent Source of 6 B Vitamins, Iron & Zinc
- Excellent Source of Folic Acid, Good Source of Dietary Fiber
- Your mother was right... breakfast really is the most important meal of the day. So it just makes sense to start your day off with something healthy and delicious. No Artificial Colors or Flavors

37. Trader Joe’s Organic High Fiber O’s
- Whole Grain Goodness
- 9g of Fiber Per Serving
- 6g of Protein per Serving
- USDA Organic
- Low Fat, Low Sodium, Excellent Source of 6 B Vitamins, Good Source of Zinc

38. Trader Joe’s Strawberry Yogurt O’s
- Low Sodium
- Excellent Source of Vitamin C and Iron
- No Artificial Flavors or Preservatives
- wonderfully crunchy and not too sweet.
- They’re excellent with milk for breakfast, lunch, or dinner, and quite addictive right out of the box... trust us, we speak from experience.

39. Trader Joe’s Honey Nut O’s
- Low in Fat
- Excellent Source of 6 B Vitamins, Iron & Zinc
- Excellent Source of Folic Acid
- Whole grains are good for you in so many ways we’d need dozens of boxes to list them all
- Going for something even more healthful, we’ve fortified our cereal with iron, zinc, and six B vitamins, including 50percent of the Daily Value of folic acid.

40. Trader Joe’s Raisin Bran
- Whole Grain Wheat & Bran Cereal
- Low Fat, Low Sodium
- Our cereal is a delicious way to start your morning. It’s high in fiber, low in sodium, and 99% fat free.
- 8 Grams of Fiber per serving
- Excellent Source of 6 B Vitamins

41. Nature’s Path Envirokidz Peanut Butter Panda Puffs
- 7g Sugar per 30g Serving, No Artificial Flavors, Colors, or Preservatives
- Certified Gluten Free
- Always Organic. Our cereals and snacks are made from the best organic ingredients, grown in harmony with nature on healthy, organic farms...
- NON-GMO...Our products are certified organic and NON_GMO, because it’s the better choice for our bodies and our planet.
- Vegan

42. Trader Joe’s Crisp Rice Cereal
- Fortified with 9 Essential Vitamins plus Iron and Zinc
- A Fat Free Food
- No Artificial Colors, Flavors, or Preservatives
- What makes it really stand out is that it’s sweetened with naturally milled cane sugar and has no high fructose corn syrup or artificial preservatives.
- It’s a delicious and nutritious way to start your day. Or, end your day. Or, snack on. It’s really up to you. Enjoy

2 Bryn Mawr College IRB Letter of Approval

Leslie Alexander, Chair
Institutional Review Board
Bryn Mawr College
Box C-678
Bryn Mawr, PA 19010-2899
610-521-2631

October 20, 2019

Lexi Lampard
Box C-678
Bryn Mawr College
R20-005 - Language of wellness: Perceived quasi-health in cereal marketing

Dear Lexi:

The IRB confirmed the exempt status of the above research. The exempt category is 45CFR 46.101(b-anonymous survey). Your research is approved, and data collection may proceed.

Should you wish to make any changes in the protocol, please be in touch before you implement those changes so that the IRB can determine whether there is any increased risk to respondents and whether the level of review should change.

In addition, if any adverse events or complaints occur from respondents, please be in touch with the IRB immediately with a full description of such activities.

We wish you the best of luck with your research.

Sincerely,

Leslie B. Alexander, Ph.D.
Professor and Chair
Bryn Mawr College IRB

Cc: Professor Emily Gasser, Swarthmore College
Differences in Dieters' & Non-Dieters' Responses: Honey Bunches of Oats

Data: Lampard 2019 Wellness Survey

Differences in Dieters' & Non-Dieters' Responses: Trader Joe's Honey Nut O's

Data: Lampard 2019 Wellness Survey