ELIZABETH A. MINTON AND T. BETTINA CORNWELL

The Cause Cue Effect: Cause-Related Marketing and Consumer Health Perceptions

Many for-profit companies (e.g., Kraft, Kentucky Fried Chicken, Keebler, 5-Hour Energy) are partnering with health-oriented nonprofits (e.g., Academy of Nutrition and Dietetics, Susan G. Komen for Breast Cancer Research, American Red Cross) to make purchase-contingent donations. Companies use cause-related marketing to improve brand image and goodwill for their food products and companies. Prior research has examined how food-related cues can create consumer misperceptions; however, consumer perceptions related to corporate communications (e.g., the use of cause cues) has received little research attention. This research explores consumer reactions to cause cues and finds that adding a health cause to a food package significantly increases product health perceptions, and, usually, product attitude, and purchase intentions (i.e., the cause cue effect) in both a student sample (Studies 1 and 2) and an adult sample on Amazon’s mTurk (Study 3). Implications for cueing and inference-making literature, and for consumer health, and policymakers are discussed.

Keebler introduced new cookie packaging that featured a logo for the American Red Cross along with a call to action to “give blood today.” Kentucky Fried Chicken (KFC) has featured a pink bucket of chicken and 5-Hour Energy a pink energy blend, with both brands donating a portion of the proceeds to the Susan G. Komen Breast Cancer Foundation. Similarly, Kraft partnered with the Academy of Nutrition and Dietetics to put a “Kids Eat Right” logo on Kraft singles cheese products; however, this partnership was abandoned after nutrition experts argued that this effort would be perceived as the Academy of Nutrition and Dietetics endorsing an unhealthy product (Bunge 2015). These examples are representative of a much more pervasive phenomenon that puts consumers at risk. Many food companies are using cause-related marketing initiatives as a corporate social responsibility (CSR) effort to improve brand image (Connolly 2011). Unfortunately, when cause-related marketing initiatives
pair a health-oriented cause with unhealthy packaged foods, there is the possibility of these goods being perceived as healthier than they are. This research seeks to understand how cause cues on food packaging that indicate purchase-contingent donations influence consumer perceptions, attitudes, and purchase intentions.

CONCEPTUAL DEVELOPMENT
Review of Health Cue Research

A growing body of research has investigated various health cues and related policy implications to encourage healthy decisions. Recent research on health cues has spawned from the Food and Drug Administration’s (FDA) Nutrition Labeling and Education Act of 1990 to determine the influence of package labeling on food purchase decisions (Silverglade 1996); see Hieke and Taylor (2012) for a review of prior research. The current research on packaging uses cueing theory, whereby a specific piece of information may manipulate or increase activation of knowledge to produce specific outcomes (Meyers-Levy 1989). More specifically, one of the most used cueing theories in the marketing literature, spreading activation theory, suggests that a cue activates a target which then causes a faster and more accurate response to the target and associated knowledge (Collins and Loftus 1975). In other words, a cue relating to healthiness activates information in the mind associated with health. In turn, the consumer may evaluate packaged foods while health cues are more available in their mind, which has been shown to lead consumers to perceive foods as healthier than they actually are.

Early health cue research focused on fat and calorie information as health cues. For example, Andrews, Netemeyer, and Burton (1998) found that food shoppers generalized healthy food traits (e.g., low fat) in an advertisement to other healthy traits of a product. Wansink and Chandon (2006) showed disturbing findings that placing a “low fat” label next to a bowl of M&Ms led to significantly greater consumption than when no label was present. Research has expanded to investigate how other nutritional elements act as health cues. Garretson and Burton (2000) tested the relationship between fat and fiber labeling and found that high fat labels negatively influenced product evaluations, but high fiber labels had no effect on product evaluations or disease-risk perceptions. In this case, beneficial nutrients did not act as a health cue. In contrast, Zank and Kemp (2012) found that consumers, particularly those low in motivation, perceived products as much healthier when presented with a high fiber label, regardless of the product’s actual level of nutrition. In a different
Kozup, Creyer, and Burton (2003) found that the addition of a heart-healthy claim on both a product package and in a restaurant menu acted as a health prime and resulted in increased brand attitudes and purchase intentions.

In examining restaurant menus, Irmak, Vallen, and Robinson (2011) found that product category labels (e.g., salad or pasta) acted as health cues for specific menu items within the product category. In two related studies, Irmak, Vallen, and Robinson (2011) found that a food identified as a salad was perceived as healthier than the same food identified as a pasta. Tangari et al. (2010) also found that key ingredients on menus (e.g., chicken) can lead to significantly lower calorie estimates, even if the ingredient that is perceived to be healthy is actually fried. To mitigate inappropriate cues, Burton, Howlett, and Tangari (2009) found that placing nutritional information on menus that disconfirmed expectations (e.g., a food was perceived to be healthy but nutritional information showed that it was not) led to decreased purchase intentions and consumption. In all of these cases, one food attribute cue was overgeneralized and thus functioned as a cue for the healthfulness of the food, thereby altering consumer decision-making.

The research herein questions the extent to which non-food cues (i.e., cues other than nutrition information) are overgeneralized to packaged foods in the same manner. Specifically, we explore how cause-related marketing (a non-food cue) influences food product evaluations. Despite criticism at times, causes and nonprofit organizations are generally seen as “good” or “positive” in society. The term cause-related marketing applies broadly to cause and brand partnerships in marketing initiatives (Samu and Wymer 2009). A wide range of activities, such as cause cobranding, cause sponsoring, and cause/brand public service announcements, are referred to as cause-related marketing. We refer to such cause-related marketing information as cause cues. While cause cues may function as health cues in some cases (e.g., with a health-oriented cause, such as the American Heart Association [AHA]), cause cues are unlikely to function as health cues when they originate from a non-health-oriented social cause (e.g., Goodwill Industries).

Peloza, Ye, and Montford (2015) have examined the influence of CSR (a non-food cue) on health perceptions of food products, finding that CSR activities generally increase health perceptions. However, they explored broad CSR activities, used text vignettes for conveying CSR behaviors, and described a brand’s contributions to a cause as general charitable donations rather than donation to a specific cause. Other research by Chernev and Blair (2015) similarly shows a positive halo effect from
CSR activities. This prior research examines general CSR activities rather than cause-related marketing that involves donation to specific, identifiable organizations. Thus, consumers are less able to assess fit between for-profit companies and nonprofit causes when evaluating product attributions and may implicitly assume that fit exists given no further details. Our studies complement and identify boundary conditions to such prior research by examining how specific, identifiable causes that consumers are already familiar with influence perceptions of food products, thereby likely leading consumers to explicitly consider fit between the for-profit company and nonprofit cause. Additionally, our research examines the importance of congruence between a cause and food product, as well as the influence of cause cue information integrated within product packaging on food product perceptions, all within situations where donations are contingent on product purchase.

HEALTH CUES AND CAUSE-RELATED MARKETING

When Keebler placed the American Red Cross logo on some 175 million cookie packages (Cause Marketing Forum 2012), they received positive results in increased sales and improved brand perception. However, these positive consumer reactions may have come at the cost of consumers inaccurately assessing the healthiness of the food. In other words, the American Red Cross may cue “health,” leading the consumer to make inferences that the product is healthier than it actually is, a phenomenon that we will refer to as the cause cue effect.

Nan and Heo (2007) confirmed that companies employing cause-related tactics increased favorable brand attitudes. Likewise, research on embedded premiums (e.g., a brand’s promise to donate 10% of sales) similarly has shown that incorporating a cause in marketing communications positively influenced brand preference (Henderson and Arora 2010). Previous research has also shown that health cues (Mason and Scammon 2011), and more specifically, cause-related tactics can result in consumer misperceptions (Hamlin and Wilson 2004). For example, Bower and Grau (2009) found that when a corporation and nonprofit partner in a cause-related marketing initiative, consumers can misperceive that the nonprofit is giving a seal of approval for the corporation. The greater the connection between a corporation and a nonprofit, the more likely is the perception that the nonprofit approves corporate behaviors.

In cause-related marketing as well as the endorsement literature, similarity between a product and a cause is important and results in improved attitudes (Basil and Herr 2006; Nan and Heo 2007). This idea of product-cause
similarity could also be applied to our understanding of cause cues on food packaging. In cueing, similar concepts are easier to pair together (McNamara 2005). For example, a health cause should be perceived as more similar to a food product than a non-health cause.

Consumers make over 250 food-related decisions each day (Wansink 2007), so given the sheer quantity of cues consumers evaluate each day, cause cues on product packaging are not likely to lead consumers into effortful product evaluation. Using an in-store shopping verbalization approach, researchers from the United Kingdom (Kalnikaitė, Bird, and Rogers 2013) have found that shoppers make rapid decisions based on one or two product factors and typically trade-off between price and health. This rapid decision-making for routine purchasing sets the stage for causes that cue health to play an unanticipated role in purchase decisions. We propose that consumers seeing a cause cue on a product package are likely to use this information when making inferences about food product attributes. The inference and sense-making literature suggest that when there is missing information for a decision attribute, consumers will make an inference based on other attributes provided (Dick, Chakravarti, and Biehal 1990; Kardes, Posavac, and Cronley 2004). As an example, research on health decision-making frequently discusses how consumers use the nutrition facts panel or other nutrition information to make inferences about overall product healthiness (Andrews, Netemeyer, and Burton 1998; Chandon and Wansink 2007; Grunert, Wills, and Fernández-Celemín 2010).

Inference making is common in marketing because advertisements and product packaging provide only partial information for decision-making, thus requiring consumers to either consciously or unconsciously develop stimulus-based inferences about product attributes (Kardes, Posavac, and Cronley 2004). In a review of inference making, Kardes, Posavac, and Cronley (2004) describe that with new products, consumers utilize information from the product category to make inferences about the product. It is important to clarify here the difference between cueing and inference making. While both can occur automatically (Kardes, Posavac, and Cronley 2004), cueing activates a node in memory associated with the cue (McNamara 1992), and then inference making uses this cue and memory activation to make food product judgments. Following this line of thinking, a health cause cue enables inference making about a food product’s healthiness, potentially leading to heightened product health evaluations. Thus:

H1: Food product health perceptions will be highest (lowest) when a health-oriented (non-health-oriented) cause is partnered with a food product (i.e., a cause cue effect).
The Cause Cue Effect and Individual Difference Variables

Prior research suggests the importance of individual difference variables in understanding food package judgments (Chandon and Wansink 2007; Hieke and Taylor 2012; Kees 2011). For example, Gallicano, Blomme, and van Rheede (2012) found that consumers high in health interest were more likely to reference nutritional information on restaurant menus, resulting in a significant decrease in cue effects. Across numerous studies consumer interest has been shown to influence cueing effects with highly interested consumers more likely to use slow, deliberative processing, and thereby experience cueing effects less than uninterested consumers (Yi 1993). Thus, highly interested consumers should be less likely influenced by cause cues because they are more likely to engage in extensive information processing, such as reading nutrition facts or evaluating the authenticity of a cause-related marketing campaign. Similarly, consumers high in nutrition knowledge should also be less likely to be influenced by health cause cues because of greater product understanding. While health interest could be seen as the more affective component of health (e.g., devotion, involvement, and attention afforded to health), nutrition knowledge could be viewed as the more cognitive component of health (e.g., remembering which foods are healthier or specific nutrition facts). Health knowledge has been shown to be distinctly different from health interest and to influence the relationship between contextual health cues and cue effects (Andrews, Netemeyer, and Burton 2009). Similar to health interest, high health knowledge consumers were less likely influenced by cues than consumers low in health knowledge (Andrews, Netemeyer, and Burton 1998, 2009; Kees, Royne, and Cho 2014). Given the context of food, “nutrition knowledge” as an aspect of health knowledge is the focus, thus:

H2: Consumers’ level of health interest (H2a) and nutrition knowledge (H2b) influences the strength of a health cause on food product evaluations (i.e., the cause cue effect), whereby consumers with high health interest (knowledge) are less likely to be influenced by cause cue information in comparison to consumers with low health interest (knowledge).

PRETEST: CAUSE AND CATEGORY

To develop materials for experimental designs to be used in Studies 1–3, a pretest is conducted. The objective of this pretest is to confirm that certain causes produce free associates related to health. Doing this will allow for these causes to be classified as health causes in the studies herein and test whether or not health causes influence product health perceptions and other
consumer evaluations (e.g., overall attitude and purchase intentions). This pretest utilized free association measures so as to not influence participants with provided choices. In essence, the free association responses reveal what is activated in the individual’s mind after exposure to a cause cue and a food product.

The National Taxonomy of Exempt Entities (National Center for Charitable Statistics 2013) was used to identify cause classifications. Three different types of causes were explored in this study: (1) Health: American Heart Association (AHA), (2) Environment: World Wildlife Fund (WWF), and (3) Social: Goodwill. Classification categories were sought that related to health-oriented and non-health-oriented (Environment, Social) charities. Two food products, affordable and typically purchased, were also pretested for perceived healthiness.

Methods

Participants and Design

This pretest explored the interaction between cause type and product category. Two hundred and ninety one undergraduate business students participated in exchange for course credit (average age = 22.1, 39% females). Participants were randomly assigned to a 3 (cause type: health, environment, social) × 3 (food product: none, cookies, crackers) between-subjects delay design. All participants were randomly assigned to provide free associates for one cause type partnered with no food product at time one. The product category “none” was used as a control condition to examine the free associates a cause produces when not attached to a product. After a 3-week delay, all participants were randomly assigned to provide free associates for one cause type partnered with one food product (either cookies or crackers). A delay design was used to identify how free associates change when causes are partnered with a product category and allow adequate time for the consumer to forget free associates listed during time one.

Materials and Procedure

Each participant was asked to free associate the first word that came to mind for a cause from each cause type. All participants provided free associates for each cause without a partnered food product at time one (e.g., “What is the first word that comes to mind when you hear: Goodwill?”). After a 3-week delay, these same participants provided free associates for each cause with one randomly assigned food product (e.g., “What is the first word that comes to mind when you hear: Goodwill and cookies?”). Both causes and food products were presented in words. In
addition, respondents answered one question about the healthiness of the food product: “How healthy is the product?” on a 6-point scale from *very unhealthy* to *very healthy*, and one question about the health-orientation of each cause on a 4-point scale from *extremely not health-oriented* to *extremely health-oriented*. Cause attitudes were also evaluated with the question “What is your overall attitude toward the cause?” on a 9-point scale ranging from *dislike extremely* to *like extremely*.

**Results**

Free associates were found to differ based on cause category. When the cause was presented alone, the health cause (AHA) most often produced free associates of *health* (17.87%) and *heart* (16.49%); the environmental cause (WWF) most often produced free associates of *animals* (53.95%) and *nature* (16.84%); and the social cause (Goodwill) most often produced free associates of *cheap* (25.77%) and *donations* (25.09%). These free associates changed based on the food product with which the cause was partnered. While *health* was the most frequent associate for the health cause with cookies, *heart* was the most frequent associate for the health cause with crackers. No health-oriented free associate appeared when non-health cause types were partnered with food products.

A random subset of 42 of the 291 participants also completed questions regarding food product and cause health perceptions; others were asked questions not addressed here. Findings show that crackers were perceived as neutral in healthiness ($M = 3.35$, $SD = 0.82$) in comparison to cookies that were perceived as unhealthy ($M = 2.08$, $SD = 0.86$), $t(41) = 7.49$, $p < .001$. For causes, the AHA ($M = 3.60$, $SD = 0.66$) was perceived as health-oriented, and the WWF ($M = 1.45$, $SD = 1.07$) and Goodwill ($M = 1.60$, $SD = 0.87$) were not. A planned comparison reveals a significant difference between the health-oriented cause and the two non-health-oriented causes, $t(41) = 21.08$, $p < .001$. Paired sample $t$-tests indicate that participants had no significant differences in overall attitude between the AHA ($M = 7.29$, $SD = 1.49$) and Goodwill ($M = 6.90$, $SD = 1.83$), $t(41) = -1.55$, $p = .129$, the AHA and the WWF ($M = 7.19$, $SD = 1.37$), $t(41) = -0.40$, $p = .694$, nor between Goodwill and the WWF, $t(41) = -0.95$, $p = .346$. Given the similarity in overall attitude, the AHA will be used as the primary health-oriented cause in the studies that follow when comparing to the non-health causes of Goodwill and the WWF.

From this pretest, we learned that AHA produces *health* as a free associate when partnered with several food products. It is expected that AHA cues health perceptions and that this may influence evaluation of
product attributes regarding healthfulness of products. As expected, all charities in non-health cause categories produced free associates unrelated to health.

STUDY 1: THE CAUSE CUE EFFECT AND HEALTH PERCEPTIONS

From the pretest, the product category of cookies is used in Study 1 to examine whether health cause information produces the cause cue effect. Specifically, the cause cue effect occurs when product health perceptions are heightened as a result of the presence of the health cause. Also explored is the influence of individual difference variables, health interest, and nutrition knowledge, on the strength of the cause cue effect.

Method

Participants and Design

One hundred and nine undergraduate business students participated in this study in exchange for course credit (average age = 21.4, 39% females). Participants were randomly assigned to one of three conditions: (1) no cause on package, (2) health cause on package (AHA), or (3) non-health, social cause on package (Goodwill).

Materials and Procedure

The pretest verified a significant difference in perceived health between the AHA and Goodwill but no significant differences in overall attitude between charities. The number of words on package stimuli was kept consistent across conditions to maintain similarity in cognitive load in all conditions. Both health cues consisted of an offer to contribute to the cause dependent on purchase, and displayed the cause logo and name. See Appendix 1 for package stimuli.

Previously validated scales were used and included: Keller et al.’s (1997) Health Perceptions Scale (original $\alpha = .93$, study $\alpha = .89$), Chan- don and Wansink’s (2007) Health Interest Scale (original $\alpha = .85$, study $\alpha = .90$), and Schuldt, Muller, and Schwarz’s (2012) Nutrition Knowledge Measure (additive dichotomous questions). See Appendix 2 for all scale items.

Results

Hierarchical linear regression was used to test whether cause condition, health interest, and nutrition knowledge significantly predicted health
perceptions. Cause condition was formed into two dummy codes (health cause vs. control and non-health cause vs. control). While cause condition significantly predicted health perceptions, $F(2, 106) = 11.32$, $p < .001$, $r^2 = .18$, neither health interest, $F(1, 105) = 1.92$, $p = .169$, $r^2 = .02$, nor nutrition knowledge, $F(1, 104) = 0.74$, $p = .390$, $r^2 = .01$, significantly contributed to the model. All interaction effects between health interest, nutrition knowledge, and cause condition were also not significant, $F(6, 98) = 0.64$, $p = .696$, $r^2 = .03$.

Given the nonsignificant influence of the two continuous covariates (health interest and nutrition knowledge) and interaction effects, a simplified analysis of variance (ANOVA) was conducted, revealing a significant influence of cause condition on health perceptions, $F(2, 106) = 11.32$, $p < .001$. Respondents seeing a health cause cue on the package rated the product as significantly healthier ($M = 3.97$, $SD = 1.38$) than those seeing a non-health, social cause ($M = 2.98$, $SD = 1.26$) and no cause at all ($M = 2.73$, $SD = 1.19$); see Figure 1 for a graph of results. Planned comparison tests were used to examine differences among cause conditions. The health cause significantly increased health perceptions beyond the control condition, $t(106) = 4.62$, $p < .001$, and non-health, social cause, $t(106) = 1.32$, $p = .190$. The non-health cause did not significantly increase health perceptions beyond the control, $t(106) = 0.87$, $p = .388$. Therefore, the cause cue effect is greatest when there is high association between the cause and the food product (e.g., a health cause with a food product).

**Discussion**

The results of Study 1 showed that adding a health cue to a food product’s package increased health perceptions. Neither nutrition knowledge nor health interest significantly influenced the relationship between cause presence and the cause cue effect, thus not supporting Hypothesis 2a or 2b and suggesting that the cause cue effect is persistent across these individual difference variables for the stimuli used in this study. However, while health interest appeared to have adequate variance ($M = 4.81$, $SD = 1.44$), nutrition knowledge may have had restricted variance ($M = 4.84$, $SD = .83$). Beier and Ackerman (2003) suggest that cognitive ability has the greatest influence on nutrition knowledge, which would suggest that college students who are generally high in cognitive ability would have less variance in nutrition knowledge.

This study was limited to cue-related perceptions (i.e., health perceptions) but did not explore other possible outcomes of the cause cue effect (e.g., overall attitude, purchase intentions). Thus, Study 2 examines the
influence of cause cues on a variety of consumer judgment outcomes. Additionally, Study 1 tested the cause cue effect in a typically unhealthy product category (cookies). Study 2 will examine whether the cause cue effect still occurs for a product category that is neutral in healthiness (crackers).

**STUDY 2: THE CAUSE CUE EFFECT AND CONSUMER EVALUATIONS**

Varadarajan and Menon (1988) stated that cause-related marketing can improve brand image, and thereby attitude toward a product, in addition to increasing initial purchase and repeat purchase intentions. Cause-related marketing can positively affect a company in such ways because the cause can cultivate consumer attitudes that the company is supporting worthy causes, and thus the consumer should support the company and its associated causes. Nan and Heo (2007) even found that cause-related marketing initiatives increased consumer attitudes toward a company regardless of product-cause relationship. Aaker, Vohs, and Mogilner (2010) suggested that cause-related marketing is effective at increasing overall attitude toward a product because the warmth associated with a cause is partnered with the competence associated with a brand.
leading to positive effects on overall attitude and purchase intentions for both the product and cause. In other words, consumers have a positive affective response when brands donate to a cause, and this effect should not differ based on whether a cause is health or non-health oriented. Thus:

H3: Cues involving cause-related marketing increase overall attitude (H3a) toward and purchase intentions (H3b) of a food product.

Study 2 investigates these additional outcomes of the cause cue effect with a health cause and two non-health causes (an environmental and social cause). A different product category, crackers, is used to generalize prior findings as well as determine the influence of cause-related marketing initiatives on overall product attitudes (Hypothesis 3a) and purchase intentions (Hypothesis 3b). We use a neutral healthiness product in this study to explore the robustness of the cause cue effect. There was more room for movement or change in health perceptions for cookies (Study 1) in comparison to the more subtle change possible for crackers (Study 2). Crackers were verified as neutral in healthiness in the initial pretest.

Methods

Participants and Design
One hundred and forty undergraduate business students participated in this study in exchange for course credit (average age = 21.8, 49% females). Participants were randomly assigned to one of four conditions: (1) no cause on package, (2) health cause on package (AHA), (3) non-health environmental cause on package (WWF), or (4) non-health social cause on package (Goodwill). See Appendix 1 for package stimuli. Similar to Study 1, the number of words was kept consistent across conditions to maintain consistency in cognitive load.

Materials and Procedure
The same scale for health perceptions from Study 1 was used again (study $\alpha = .86$). To measure purchase intentions, Keller et al.’s (1997) Purchase Intentions Scale was used (original $\alpha = .89$, study $\alpha = .83$), and to measure overall attitude, Keller et al.’s (1997) Overall Product Attitude Scale was used (original $\alpha = .89$, study $\alpha = .96$). See Appendix 2 for scale items.

Results
Results from a multivariate analysis of variance (MANOVA) revealed that cause condition significantly predicted product evaluations (health perceptions, overall attitude, purchase intentions), $F(9, 326) = 1.94, p = .046,$
TABLE 1
Means and Standard Deviations by Cause Type (Study 2)

<table>
<thead>
<tr>
<th></th>
<th>Health Perceptions</th>
<th>Overall Attitude</th>
<th>Purchase Intentions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>3.14 (1.31)</td>
<td>3.49 (1.26)</td>
<td>3.13 (1.08)</td>
</tr>
<tr>
<td>Health cause</td>
<td>3.79 (1.39)**</td>
<td>4.40 (1.46)**</td>
<td>3.94 (1.28)*****</td>
</tr>
<tr>
<td>Environmental cause</td>
<td>3.36 (0.94)</td>
<td>4.22 (1.72)*</td>
<td>3.82 (1.37)**</td>
</tr>
<tr>
<td>Social cause</td>
<td>3.04 (1.02)</td>
<td>3.94 (1.44)</td>
<td>3.73 (1.08)****</td>
</tr>
</tbody>
</table>

Note: Standard deviations are in parentheses. Health cause = American Heart Association, Environmental cause = World Wildlife Fund, and Social cause = Goodwill.

* \( p < .10 \), ** \( p < .05 \), *** \( p < .01 \); all significance values indicate comparison between the cause condition and the control condition.

Wilk’s \( \Lambda = 0.88 \). Between subjects tests showed that cause condition significantly predicted health perceptions, \( F(3, 136) = 2.99, p = .033 \). Planned contrasts showed that addition of a health cause on a package significantly increased health perceptions in comparison to a control, \( t(136) = 2.34, p = .021 \). Neither of the non-health causes significantly influenced health perceptions beyond the control (environmental \( t(136) = 0.75, p = .454 \), social \( t(136) = -0.34, p = .732 \)); see Table 1 for means and standard deviations and Figure 2 for a chart of means. These findings suggest that a cause must be health-oriented to inflate health perceptions.

For overall attitude, the full model was not significant at the .05 level, \( F(3, 136) = 2.53, p = .060 \). Planned contrasts showed that both the health cause, AHA, \( t(136) = 2.63, p = .010 \), and the non-health environmental

FIGURE 2
Effect of Cause Cue on Food Product Evaluations (Study 2)

Note: Health perceptions, overall attitude, and purchase intentions are measured on a scale of 1–7. Figure axis goes to 5 for ease of viewing.
cause, WWF, \( t(136) = 1.94, p = .050 \), increased attitudes in comparison to the control, which might be expected because consumers appreciate companies donating to causes. The non-health social cause, Goodwill, however, did not increase overall attitude, \( t(136) = 1.33, p = .223 \), which was the main contributor to nonsignificance of the full model. Although the pretest showed no significant difference in overall attitude toward the non-health social cause, Goodwill, and the health cause, AHA, mean values showed Goodwill as having lower overall attitude, which may have influenced results. For purchase intentions, addition of any cause on a package significantly increased purchase intentions, \( F(3, 136) = 3.07, p = .030 \). Planned contrasts revealed that the health cause, \( t(136) = 2.88, p = .005 \), the non-health environmental cause, \( t(136) = 2.26, p = .025 \), and the non-health social cause, \( t(136) = 2.28, p = .026 \), all increased purchase intentions.

Discussion

Results from a MANOVA revealed that cause condition significantly influenced product evaluations. Similar to Study 1, addition of a health cause (i.e., not a social or environmental cause) on a package acted as a health cue to produce the cause cue effect and increase health perceptions of the product, thereby supporting Hypothesis 1. Thus, across food types, less healthy cookies in Study 1 and neutral healthiness crackers in Study 2, the cause cue effect was found. Also, as expected, addition of cause information to food packaging increased both overall attitudes and purchase intentions, regardless of cause type, thus supporting Hypothesis 3.

STUDY 3: ADDRESSING LIMITATIONS OF THE CAUSE CUE EFFECT

To further investigate the cause cue effect, Study 3 replicates the findings from Studies 1 and 2 with an adult population from Amazon’s Mechanical Turk. Using this new sample source addresses the limited variance noted in Study 1 with regard to individual difference variables of health interest and nutrition knowledge. If the findings from Study 3 show a larger variance in health interest and nutrition knowledge and again show no significant interaction between these variables and cause cue condition, further evidence for the cause cue effect will be provided. Additionally, Study 3 addresses a potential limitation of Studies 1 and 2 that used a control condition containing additional words that were not in the cause cue conditions. Such a procedure was used to maintain consistency in cognitive
load across conditions; however, adding words to the control condition has the potential to differentially influence consumer food package evaluations. Thus, Study 3 features two control conditions—one identical to Study 2 and a second, which removes all additional text; see Appendix 1. Finally, some may question the pertinence of the non-health causes used in Study 1 (Goodwill) and Study 2 (Goodwill and the WWF) to food products. Thus, Study 3 uses a non-health cause that is food-oriented, Meals on Wheels, to verify that cause health orientation, not potential food orientation, influences health perceptions.

Methods

Participants and Design

One hundred and twenty adults (average age = 35.5, 54% females) from Amazon’s Mechanical Turk, which is valued for academic research (Buhrmester, Kwang, and Gosling 2011), participated in this study in exchange for a small cash incentive. This study featured four conditions (cause: none without filler wording, none with filler wording, health cause—AHA, and non-health food cause—Meals on Wheels).

Materials and Procedure

Similar to Study 2, a mock package of crackers with the AHA was used as the health cause condition for this study. Two control conditions were used—(1) one condition that matches the control conditions of Studies 1 and 2 with additional words on the control package that were not included on the cause packages to maintain consistency in cognitive load across conditions and (2) one condition without additional words. Two control conditions were used to identify if the filler wording in the control conditions in Studies 1 and 2 influenced the findings. Finally, a non-health-oriented food cause was used to examine the influence of a non-health cause in the same product category as the food product package that consumers evaluate. See Appendix 1 for package stimuli.

A pretest of 27 participants on Amazon’s Mechanical Turk was conducted to identify a food cause that was not health-oriented but had a similar level of overall attitude and familiarity as the health cause (AHA). Four questions were asked in the pretest: “Please indicate: (1) how food-focused they are, (2) how health-oriented they are, (3) your overall attitude toward them, and (4) your familiarity with them.” Questions 1–3 were measured on 9-point bipolar scales (not food-focused/very food-focused, not health-oriented/very health-oriented, very negative attitude/very positive attitude), and question 4 was measured on a 5-point bipolar scale (not familiar/very familiar).
Paired samples \( t \)-tests were used to test the difference between several food causes and the health cause, AHA. For simplicity, only the results pertaining to the chosen food cause (Meals on Wheels) are reported here. Meals on Wheels \((M = 8.52, SD = 0.80)\) was perceived as significantly more food-oriented than AHA \((M = 3.59, SD = 2.31)\), \( t(26) = 10.07, p < .001 \). Meals on Wheels \((M = 5.30, SD = 2.38)\) was also perceived as significantly less health-oriented than AHA \((M = 8.11, SD = 1.81)\), \( t(26) = 5.35, p < .001 \). Additionally, the overall attitude toward Meals on Wheels \((M = 7.41, SD = 2.01)\) was not significantly different than AHA \((M = 7.67, SD = 1.96)\), \( t(26) = 0.89, p = .380 \), nor was the familiarity of Meals on Wheels \((M = 4.26, SD = 0.98)\) significantly different than AHA \((M = 4.44, SD = 0.75)\), \( t(26) = 0.93, p = .363 \). Given that Meals on Wheels was perceived as more food-oriented but less health-oriented than the AHA, and also no different in terms of overall attitude or familiarity, Meals on Wheels was chosen as the non-health-oriented food cause for this study.

The same scales for health perceptions (study \( \alpha = .91 \)), purchase intentions (study \( \alpha = .89 \)), and overall attitude (study \( \alpha = .96 \)) as used in Study 2 were used to measure food product perceptions in this study. Additionally, the same scales for health interest (study \( \alpha = .88 \)) and nutrition knowledge (additive dichotomous items) as used in Study 1 were used to measure individual differences in this study to assess whether health interest or knowledge moderate cause cue effects.

Results

Hierarchical linear regression was used to test whether cause condition, health interest, and nutrition knowledge significantly predict health perceptions. Cause condition was formed into three dummy codes (health cause vs. control with no filler wording, non-health food cause vs. control with no filler wording, and control with filler wording [same as control used in Studies 1 and 2] vs. control with no filler wording). While cause condition, \( F(3, 116) = 4.12, p = .008, r^2 = .10 \), and health interest significantly predicted health perceptions, \( F\Delta(1, 115) = 7.16, p = .009, r^2\Delta = .05 \), neither nutrition knowledge, \( F\Delta(1, 114) = 2.02, p = .158, r^2\Delta = .02 \), nor the interactions among health interest, nutrition knowledge, and cause conditions, \( F\Delta(6, 108) = 1.02, p = .419, r^2\Delta = .05 \), significantly contributed to the model. Additionally, no individual interactions between cause conditions and either health interest or nutrition knowledge were significant.

Given the nonsignificant interactions between the two continuous covariates (health interest and nutrition knowledge) and cause conditions, a simplified MANOVA was conducted. Results from the MANOVA revealed
TABLE 2
Means and Standard Deviations by Cause Type (Study 3)

<table>
<thead>
<tr>
<th></th>
<th>Health Perceptions</th>
<th>Overall Attitude</th>
<th>Purchase Intentions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control—no filler wording</td>
<td>3.39 (0.24)</td>
<td>4.46 (0.29)</td>
<td>4.23 (0.27)</td>
</tr>
<tr>
<td>Control—filler wording</td>
<td>3.72 (0.24)</td>
<td>4.28 (0.29)</td>
<td>3.97 (0.26)</td>
</tr>
<tr>
<td>Health cause</td>
<td>4.42 (0.23)***</td>
<td>4.78 (0.28)</td>
<td>4.51 (0.26)</td>
</tr>
<tr>
<td>Non-health food cause</td>
<td>3.45 (0.24)</td>
<td>4.75 (0.29)</td>
<td>4.38 (0.27)</td>
</tr>
</tbody>
</table>

Note: Standard deviations are in parentheses. “Control—filler wording” mimics the control condition used in Studies 1 and 2. “Control—no filler wording” represents a new control condition that contains no filler wording that was used in the control conditions in Studies 1 and 2 to maintain cognitive load across conditions. See Appendix 1 for food package stimuli. Health cause = American Heart Association, Non-health food cause = Meals on Wheels.

***p < .01; all significance values indicate comparison between the cause condition and the control with no words condition.

that cause condition significantly predicted product evaluations (health perceptions, overall attitude, and purchase intentions), $F(9, 278) = 2.01$, $p = .039$, Wilk’s $\Lambda = 0.86$. Between subjects tests showed that cause condition significantly predicted health perceptions, $F(3, 116) = 4.12$, $p = .008$. Planned contrasts showed that addition of a health cause on a food package significantly increased health perceptions in comparison to the control without filler wording, $t(116) = 3.10$, $p = .002$, while the non-health food cause (Meals on Wheels) did not significantly increase health perceptions in comparison to the control without filler wording, $t(116) = 0.17$, $p = .866$. Similarly, when using the control condition with filler wording as the baseline condition, addition of the health cause on the food package significantly increased health perceptions, $t(116) = 2.12$, $p = .036$, while again, the non-health food cause did not significantly increase health perceptions in comparison to this control with filler wording, $t(116) = -0.82$, $p = .417$. Additionally, there was no significant difference in health perceptions between the control with no filler wording and control with filler wording conditions, $t(116) = 0.99$, $p = .326$. In other words, the health cause significantly increased health perceptions, relative to both the control with no filler wording and the control with filler wording. Similarly, the non-health food-oriented cause did not significantly increase health perceptions, regardless of the control condition used; see Table 2 for means and standard deviations and Figure 3 for a chart of means. These findings suggest that a cause must be health-oriented in order to inflate health perceptions.

For overall attitude, cause condition did not significantly influence overall attitude, $F(3, 116) = 0.71$, $p = .546$, $r^2 = .02$, while health interest had a significant main effect on overall attitude, $F \Delta(1, 115) = 4.34$, $p = .039$, $r^2 = .03$. However, cause condition did predict health interest, $F(3, 116) = 5.49$, $p = .001$, $r^2 = .16$. Planned contrasts showed that health cause predicted health interest, $t(116) = 2.12$, $p = .036$, while the non-health food cause did not significantly predict health interest, $t(116) = -0.68$, $p = .498$.
$r^2\Delta = .04$. Similar to health perceptions, neither nutrition knowledge, $F\Delta(1, 114) = 3.34, p = .070, r^2\Delta = .03$, nor any interactions between cause condition and health interest or nutrition knowledge, $F\Delta(6, 108) = 0.78, p = .585, r^2\Delta = .04$, were significant predictors of overall attitude. Planned comparisons showed no significant differences among cause conditions for overall attitude. Specifically, there was no significant difference between the health cause and the control condition without filler wording, $t(116) = 0.80, p = .425$, or the control condition with filler wording, $t(116) = 1.27, p = .208$. There were also no significant differences between the non-health food cause and the control condition with no filler wording, $t(116) = 0.70, p = .486$, or the control condition with filler wording, $t(116) = 1.15, p = .252$. While adding a cause to a food package did not significantly increase overall attitude in this study, mean differences still showed a similar effect to Studies 1 and 2 with causes increasing overall attitude.

For purchase intentions, cause condition, $F(3, 116) = 0.80, p = .497, r^2 = .02$, health interest, $F\Delta(1, 115) = 2.12, p = .149, r^2\Delta = .02$, nutrition knowledge, $F\Delta(1, 114) = 3.26, p = .074, r^2\Delta = .03$, and all interactions between cause conditions and health interest or nutrition knowledge, $F\Delta(6, 108) = 1.12, p = .353, r^2\Delta = .06$, did not significantly predict purchase intentions. Similar to overall attitude, planned comparisons showed no significant differences among cause conditions for purchase intentions.

**FIGURE 3**

Effect of Cause Cue on Food Product Evaluations (Study 3)

Note: Health perceptions, overall attitude, and purchase intentions are measured on a scale of 1–7. Figure axis goes to 5 for ease of viewing.
Specifically, there was no significant difference between the health cause and the control condition with no filler wording, $t(116) = 0.76, p = .450$, or the control condition with filler wording, $t(116) = 1.48, p = .141$. There was also not a significant difference between the non-health food cause and the control condition with no filler wording, $t(116) = 0.39, p = .695$, or the control condition with filler wording, $t(116) = 1.10, p = .275$. Also similar to overall attitude, adding a cause to a food package did not significantly increase purchase intentions in this study, but mean differences still showed a similar effect to Studies 1 and 2 with causes increasing purchase intentions.

Discussion

Similar to Studies 1 and 2, the results from Study 3 showed that addition of a health cue increased health perceptions, thereby supporting H1. Results showed that this effect occurred regardless of whether the control condition features filler wording to maintain cognitive load across all conditions (i.e., the control condition from Studies 1 and 2) or a control condition featuring no filler wording (i.e., the new control condition introduced in Study 3). The results from Study 3 showed that the control condition with filler wording actually made the food product appear slightly healthier, which should make the cause cue effect harder to detect. In other words, the difference between the old cause condition with filler wording (perceived as healthier) and the health cause condition was smaller than between the new cause condition with no filler wording (perceived as less healthy) and the health cause condition. Thus, if Studies 1 and 2 had used the new control condition with no filler wording, one could expect that the cause cue effect on health perceptions would have been even greater.

Similar to Study 1, there were no significant interactions between cause cue type and nutrition knowledge or health interest, thereby not supporting H2a and H2b. This finding lessens concern from Study 1 that variance for nutrition knowledge and health interest were restricted with a student sample, Although health interest had a significant main effect on health perceptions and overall attitude, there were no significant interaction effects with cause condition, suggesting that the cause cue effect may be pervasive across several individual difference variables. An alternative reasoning for these null findings is due to ceiling effects. Mean values for health interest ($M = 5.09$) and nutrition knowledge ($M = 5.04$) were near the high points for the health interest (Scale 1–7) and nutrition knowledge (Scale 1–6) measures. Thus, future research should consider different measures for health interest and nutrition knowledge, ideally
without the threat of ceiling effects. Additionally, future research should explore other individual difference variables (e.g., advertising skepticism, literacy) to determine whether cause cue effects are pervasive across a variety of individual difference variables. For example, Jae and Delvecchio (2004) find that while low-literacy consumers are at a disadvantage in the marketplace, visual cues assist in decision-making for this group. Thus, low-literacy consumers are likely to rely even more on cause cues than other consumer groups.

Interestingly, in Study 3, cause type did not significantly influence purchase intentions or overall attitude, thereby not supporting H3a and H3b, although mean differences suggest a similar pattern of effects to Study 2. The nonsignificant differences in Study 3 are perhaps due to mTurk participants completing the study quicker ($M = 338.23$ seconds) than the college students from Studies 1 and 2 ($M = 409.60$ seconds), possibly leading the mTurk participants to spend less time considering the influence of the cause cue on food product perceptions.

**GENERAL DISCUSSION**

Our findings provide support that non-food cues (i.e., information other than nutrition facts) are used in assessing product healthiness. Specifically, cause marketing can influence consumer food product evaluations when cause cues are integrated within food packaging. Our findings build upon prior research that has shown that CSR efforts generally influence food product evaluations (Peloza, Ye, and Montford 2015). By understanding the function of specific, identifiable cues as health information influencing inference making, consumers are enabled to make more positive decisions contributing to their health. While the cause cue effect can contribute positively to honest attempts at health messaging (e.g., a health cause partnering with a healthy food product), this same cause cue effect can occur with inadvertent or manipulative health messaging (e.g., a health cause partnering with an unhealthy food product).

We find that adding a health-oriented cause cue to a food package significantly increases health perceptions of the food and oftentimes inflates overall attitude and purchase intentions as well. Not only does the cause cue effect exist across types of food, as evidenced in Study 1 (cookies) and Studies 2 and 3 (crackers), but this effect is found across populations as well—both college students (Studies 1 and 2) and adults on Amazon’s mTurk (Study 3). Additionally, findings revealed that there must be association between the cause and the food product in order for the cause cue effect to occur. In other words, for a food product where
one evaluates healthfulness, a health cause may orient processing and influence perceptions whereas a non-health food cause (e.g., Meals on Wheels) or a non-health social cause (e.g., Goodwill) does not influence health perceptions.

Together, these findings provide insight for inference making and CSR. Prior research has shown that consumers make stimulus-based inferences of product attributes (Kardes, Posavac, and Cronley 2004). We show that, similar to prior research (Dick, Chakravarti, and Biehal 1990; Kardes, Posavac, and Cronley 2004), consumers make inferences of missing product information (e.g., nutrition facts) based on cues on a food product package. We also show that consumers make these stimulus-based inferences regardless of a variety of individual difference variables. In other words, our research supports the universality of inference making across consumers and the use of inference making with cause cues. Additionally, our research adds to the CSR literature by showing that cause-related marketing, when integrated with product packaging, influences health perceptions, often in unintended ways.

Although prior research has explored the general influence of CSR on product evaluations (Chernev and Blair 2015) and health perceptions (Peloza, Ye, and Montford 2015), our research shows that specific causes with high pre-existing association to a product category hold a strong influence on consumer behavior. Importantly, this influence on consumer behavior is a consumer protection policy concern. Given that our research focuses on cause cues in situations where donations are contingent on a product purchase, future research should explore cause cues in situations where donation to a cause is not contingent on product purchase, such as in the partnership between Kraft and the Academy of Nutrition and Dietetics. In the situation with Kraft, the Academy of Nutrition and Dietetics logo was going to be placed on Kraft singles products, which likely would lead consumers to perceive that the nonprofit was endorsing the Kraft singles product as nutritious. Future research should confirm that such an effect would occur.

These findings of a cause cue effect should raise interest and concern among consumers, marketers, and public policymakers alike. Of particular unease, are situations where food brands partner with a health cause, subsequently utilizing the cause on their food packaging, and, in doing so, altering product perceptions. In other words, just as claims by the FDA can alter health perceptions (Wansink and Chandon 2006), cause cue information can also alter health perceptions. Our findings echo concern by the Better Business Bureau in their Wise Giving Alliance Standards for Charity Accountability (2003) as well as the hearings of the Senate
Committee on Banking, Housing, and Urban Affairs (Tyler 2007). This apprehension centers around cause communications that are misleading, thereby inhibiting a consumer’s ability to make accurate food judgments. Although, funding for health causes may benefit society, if product perceptions are altered, societal costs may outweigh societal advancement. As in the case of the KFC on-package cause cue of the Susan G. Komen Foundation, policymakers need to question the intentions and outcomes of this widespread practice. Policymakers have regulated package claims having the word *natural* in the Safe and Accurate Food Labeling Act (2014) and the word *healthy* in the Food Labeling Modernization Act (2013), but no such regulation over partnership with charities has occurred.

Future research would benefit from exploring other outcomes of the cause cue effect (e.g., green perceptions, and taste perceptions). Additionally, future research could explore antecedents to cause cue perceptions (e.g., advertising skepticism, metacognition, and general trust) to understand why some consumers trust cause cues while others see them as manipulative. This research is limited by measuring behavioral intentions rather than actual behavior; assessing purchase intentions outside of the context of competing products; and measuring health interest without also measuring body mass index (BMI) and dieting status. Future research could address these limitations as well as explore ways, such as disclaimers, to enable consumers to make more accurate food product judgments. Prior research has found that use of a disclaimer can reduce cueing effects in health (Andrews, Netemeyer, and Burton 2009). However, in a recent review by Green and Armstrong (2012), these authors found that 15 out of 18 studies showed that mandatory disclaimers increase consumer confusion and are ineffective or harmful to the brand. Thus, further research is needed to understand how disclaimers can be used effectively to increase consumer understanding and healthy choice.

**CONCLUSION**

Numerous companies are taking to cause-related marketing efforts to improve brand image for food products. Just recently, KFC introduced pink buckets of chicken and noted a small donation for every bucket of chicken would be donated to the Susan G. Komen Foundation. However, marketers, public policymakers, and consumers alike need to be concerned that a brand supporting a cause through financial or other means may lead the brand to be misperceived, thereby creating a cause cue effect. Specifically, the cause (e.g., the Susan G. Komen Foundation) is likely leading consumers to make inferences that the food product (e.g., the KFC
chicken) is healthier than it actually is. Our research suggests that the cause cue effect is pervasive across individual difference variables, different populations, and with a variety of product categories and causes. Thus, consumers need to be aware of how cause information may be influencing the accuracy of their food product judgments.

APPENDIX 1

PACKAGE STIMULI: STUDY 1

No cause/control condition

Health cause condition
Non-health cause condition

PACKAGE STIMULI: STUDY 2

No cause/control condition
Health cause condition

Non-health social cause condition
Non-health environmental cause condition

PACKAGE STIMULI: STUDY 3

No cause/control condition—with no filler wording
No cause/control condition—with filler wording (same as control condition used in Studies 1 and 2)

Health cause condition
Non-health food cause condition

APPENDIX 2

SCALE ITEMS USED IN STUDIES 1–3

*Overall Product Attitude Scale*, original $\alpha = .89$, from Keller et al. (1997)

Based on the package design, what is your overall attitude toward the product (Q1: unfavorable/favorable, Q2: bad/good, and Q3: like/dislike)?

*Purchase Intentions Scale*, original $\alpha = .89$, from Keller et al. (1997)

1. How likely would you be to purchase the product, given the product packaging (very unlikely/very likely)?
2. Given the product packaging, how probable is it that you would consider purchasing the product (not probable/very probable)?
3. Would you be less likely or more likely to purchase the product, given the information seen on the product packaging (less likely/more likely)?

*Health Perceptions Scale*, original $\alpha = .93$, from Keller et al. (1997)

1. Based on the product packaging, what is your overall attitude toward the nutrition content of the package (unfavorable/favorable)?
2. Do you consider the nutrition offered by the product to be (poor/good)?
Overall, how would you rate the level of nutritiousness suggested by the information on the package (not nutritious at all/very nutritious)?

**Nutrition Knowledge Measure**, from Schuldt, Muller, & Schwarz (2012)

1. Which food contains more calories (peas/peanuts)?
2. Which food contains more calories (coconut milk/chicken broth)?
3. Which food contains more cholesterol (butter/margarine)?
4. Which food contains more cholesterol (egg yolks/egg whites)?
5. Which food contains more fat (sour cream/yogurt)?
6. Which food contains more fat (roast chicken/boiled chicken)?

**Health Interest Scale**, original $\alpha = .85$, from Chandon & Wansink (2007)

*All scale items measured from strongly disagree to strongly agree.*

1. I ignore nutrition information.
2. I pay close attention to nutrition information.
4. It is important to me that nutrition information is available.
5. I actively seek out nutrition information.

**Note**: All items measured on 7-point scales, except the Nutrition Knowledge Measure items.

**REFERENCES**


