When Companies Do Good, Are Their Products Good for You? How Corporate Social Responsibility Creates a Health Halo

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Research has demonstrated that consumers frequently engage in inference making when evaluating food products. These inferences can be highly inaccurate, leading to unintended, unhealthy consumer choices. Previous research has examined the role of inference making in consumption settings from either an inter- or intra-attribute perspective. The current research highlights extra-attribute inferences, in which consumers use corporate-level information to make inferences about product-level attributes. Across four studies, the authors demonstrate the existence of a health halo resulting from corporate social responsibility activities. When consumers evaluate food products marketed by firms with strong corporate social responsibility reputations, they underestimate the calorie content. Furthermore, the authors show that this calorie underestimation can lead to overconsumption by consumers.

Keywords: corporate social responsibility, health halo, inferences, overconsumption, nutrition
How CSR Creates a Health Halo

Consumers frequently must make decisions without complete information about a product or situation. As such, they often engage in the task of inference making in their decisions. We define inference making as the construction of meaning and judgment beyond what is explicitly provided (Simmons 1986). Research examining inference making has shown that consumers form inferences about missing attributes by making connections between the missing information and other available information (e.g., Broniarczyk and Alba 1994; Kardes, Posavac, and Cronley 2004; Simmons and Lynch 1991). The role of inference making is particularly prevalent with food products, for which consumers are often provided information on only one or two key attributes such as calorie and fat content (Burton et al. 2014; Wansink and Chandon 2006). In some instances, the result is that consumers use available information to infer healthful properties across a broad range of product attributes such as calorie, sodium, and fat content (Burton et al. 2014; Wansink and Chandon 2006). Importantly, and extending previous research on consumers’ use of nutrition information, we find that a company’s reputation for CSR, together with consumers’ resulting calorie underestimation, leads to increased consumption.

In addition to the finding that corporate-level CSR activities create a health halo in product evaluations, we extend previous research that shows how information highly salient to product evaluation generates inferences that affect perceptions of product healthfulness (e.g., fat content; Wansink and Chandon 2006). We use the term “healthfulness” throughout the article to refer to the perceived healthfulness of a food product across a range of attributes, such as calories, sodium, and fat. Elder and Krishna (2010, p. 755) note that the impact of heuristic-based cognition on perception is a “fruitful area for future research” and that “thoughts generated by other extrinsic cues could be equally as intriguing” (italics added). Our examination of corporate-level CSR activities constitutes an extension to the literature on this basis.

Relatedly, the current research suggests a third unstudied category of consumer misperceptions generated through inference making. Hastak and Mazis (2011) categorize inter- and intra-attribute misperceptions as those involving multiple attributes or a single attribute. For example, intra-attribute misperception occurs when a consumer infers that a product labeled as “no cholesterol” means it is the only one available without cholesterol. Interatribute misperception occurs when consumers infer that a product has low calories on the basis of a low-fat label. The current study introduces the concept of extra-attribute misperceptions through our examination of health halos created by corporate-level information.

The remainder of this article is organized as follows. After a brief review of inference making, we execute a series of studies examining how CSR activities create health halos. In Study 1, we demonstrate the presence of a health halo resulting from a corporate-level reputation for CSR but find that this halo is only present when consumers perceive CSR activities as motivated by concern for stakeholders. In Studies 2 and 3, we examine how this health halo leads people to overconsume products marketed by a firm with a strong CSR reputation. In addition, we show that this effect is mediated by perceived lower-calorie content in those products. Finally, we extend our findings in Study 4 using a more generalizable sample, demonstrating that a company’s reputation for CSR can lead consumers to underestimate the amount of calories consumed.

How CSR Reputation Creates a Health Halo

Consumers frequently must make decisions without complete information about a product or situation. As such, they often engage in the task of inference making in their decisions. We define inference making as the construction of meaning and judgment beyond what is explicitly provided (Simmons 1986). Research examining inference making has shown that consumers form inferences about missing attributes by making connections between the missing information and other available information (e.g., Broniarczyk and Alba 1994; Kardes, Posavac, and Cronley 2004; Simmons and Lynch 1991). The role of inference making is particularly prevalent with food products, for which consumers are often provided information on only one or two key attributes such as calorie and fat content (Burton et al. 2014; Wansink and Chandon 2006). In some instances, the result is that consumers use available information to infer healthful properties across a broad range of product attributes such as calorie, sodium, and fat content (Roe, Levy, and Derby 1999). Research has consistently demonstrated that consumers rely on evaluation-based inferences (halo effects) in their judgment of products (Alba and Hutchinson 1987; Andrews, Netemeyer, and Burton 1998; Dick, Chakravarti, and Biehal 1999; Pechmann 1996).

For example, Chandon and Wansink (2007a) find that the halo associated with health claims used in Subway advertising leads consumers to underestimate the number of calories in many Subway sandwiches. Indeed, customers and other stakeholders frequently rely on the reputation of firms when making decisions (Fombrun and Shanley 1990). However, inference-making research based on corporate reputation typically uses information that is directly linked to specific product attributes. For example, brands that position themselves on the healthfulness of their products, such as Subway, are expected to produce products that are more healthful than their competitors.

When consumers use information on one attribute (e.g., the use of fresh ingredients) to infer healthful properties on other attributes (e.g., low calories), they engage in what Hastak and Mazis (2011) categorize as interattribute misestimations. They also categorize intra-attribute misestimations as those specific to one attribute, such as inferences that a food is high in protein when a label merely states that the product contains protein. However, the literature has not explored the potential of non-product-attribute-related
information to create a health halo. The current article explores the existence of a third category, extra-attribute misestimation, in which consumers engage in inference making on the basis of information outside any specific product attribute, instead using a more global evaluation of a marketer.

The inference of a product’s healthfulness that is created through the demonstration of CSR is based on consumers' lay beliefs (Ross and Nisbett 1991). Furthermore, these lay beliefs, or “commonsense” explanations for phenomena, often endure despite contradictory cues that suggest that the belief is incorrect (Broniarczyk and Alba 1994). Our examination of CSR at the corporate rather than product level suggests that consumers utilize their perceptions of a company’s reputation for CSR to form their inferences.

Ferrell et al. (2010) outline how a reputation for CSR can signal to consumers that the firm proactively considers the welfare of stakeholders other than shareholders. Such signals suggest to consumers that the firm prioritizes a range of issues beyond short-term profit or market share goals and adopts a culture that fosters the well-being of multiple stakeholder groups, including customers (Mish and Scammon 2010). We posit that a corporate-level CSR reputation influences perceptions of product-related attributes in food because it creates a caring and compassionate corporate image. This is because corporate values, demonstrated through activities such as charitable donations, are used to position the firm as self-transcendent (Adams, Licht, and Sagiv 2011). These values are defined by benevolence (a motivation to preserve and enhance the welfare of others) and universalism (caring for the environment and the welfare of people and nature; Schwartz 1992). Other researchers have noted similar organizational values such as the humanistic orientation described by Maigman, Ferrell, and Hult (1999), defined as concern for the needs of others and the promotion of caring and harmony.

When firms signal concern for stakeholders through their corporate-level CSR actions such as donations to charity, consumers infer commensurate reputational characteristics. Firms and brands, just like people, are perceived as possessing personality attributes (Aaker 1997; Sirgy 1985). Firms that are known for their CSR activities are viewed as more compassionate, caring, protective, and soft-hearted (e.g., Sisodia, Sheth, and Wolfe 2007) and are associated with a more collectivist concern for the well-being of others. Firms characterized by CSR are typically viewed as having a “higher purpose” and striving to serve others through the creation of improved quality of life and health (O’Toole and Vogel 2011). As such, we propose the following:

H₁: Consumers perceive food products marketed by a firm with a strong reputation for CSR as more healthful (i.e., a health halo) than food products marketed by a firm with a neutral reputation for CSR.

Given that the health halo is greatly influenced by the perception of corporate concern for the welfare of non-shareholder stakeholders, such as consumers, we propose that the perceived motivation of the firm behind the CSR activities is an important moderator of the existence of the health halo. Although CSR activities are the signals used to formulate the perception of a firm’s compassion for stakeholders, the signals are not interpreted without context. Given the inherent contradiction between firms’ traditional profit-maximizing goals and investment in discretionary CSR activities, stakeholders attempt to make sense of the contradiction by considering firm motives (White 2008). Often, the perceived motives behind an action are even more important than the action itself (Gilbert and Malone 1995).

Previous research examining the efficacy of CSR in influencing consumer perceptions has suggested that motive indeed plays a large role in consumer preferences (e.g., Handelman and Arnold 1999). Research has demonstrated that consumers often engage in deep, complex consideration of firm motives, and the resulting attributions are not necessarily aligned with the perceived benefactor of the CSR activity. Research initially suggested that consumer inferences of the underlying motives for engaging in CSR range from other-oriented (i.e., genuine concern) to self-oriented (i.e., exploitation; Barone et al. 2000). Ellen, Webb, and Mohr (2006) expand this dichotomy and highlight the depth and complexity of consumer attributions. Notably, other-oriented attributions are not always positive. One form of other-oriented attribution—namely, values-driven attribution—infers that the firm cares about the cause it supports and that the firm’s decision to invest in CSR is driven by altruism. Because the CSR activity is viewed as motivated by a benefit to others, consumers view the activity positively. However, the second form of other-oriented attribution—stakeholder-driven attribution—assumes that the activity is merely a concession to stakeholder demands. Accordingly, consumers do not positively evaluate CSR activities when they perceive stakeholder-driven motives. Similarly, Ellen, Webb, and Mohr find that consumers do not always develop negative attitudes as a result of self-oriented attributions. In general, consumers are supportive of corporate expectations of benefit from CSR, such as cost reduction, but they evaluate the CSR activity negatively when they perceive that it is driven by a desire to exploit a cause.

In the context of the current research, the perception of a concern for consumer welfare (i.e., CSR activities that are motivated by positively viewed other-oriented motives vs. negatively viewed self-oriented motives) is required for the halo effect to emerge. In other words, CSR activities alone do not lead consumers to infer healthfulness in a firm’s products. Instead, a perception of underlying concern for stakeholder well-being is required to create this effect. More formally,

\[ H₂: \text{The health halo, created by a reputation for CSR, is moderated by the perceived corporate motives behind CSR activities. Consumers do not use a health halo when evaluating products marketed by firms with negative self-oriented (vs. positive other-oriented) motives.} \]

We further propose that when firms are perceived as expressing genuine concern for the well-being of stakeholders, the resulting inferences of healthfulness (health halo) will affect consumers’ behaviors with regard to consumption levels. Specifically, because research has demonstrated that firms known for their CSR activities are more caring and protective of consumers (Sisodia, Sheth, and Wolfe...
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2007), we posit that the consumer inference of healthfulness will translate behaviorally into increased consumption of the products marketed by such firms. In other words, the health halo created by CSR activities will result in inferences that provide consumers "license" to consume at higher levels.

Although the health halo may influence consumers’ perceptions of healthfulness across a range of nutritional dimensions (e.g., calories, fat, sodium), we posit that estimates of calorie content will be a key driving mechanism of the health halo and resulting increased consumption. This is because research has shown that consumers typically disproportionately focus on the amount of calories (relative to other nutritional dimensions) in food as the major signal of healthfulness (e.g., Burton et al. 2014). Therefore, we predict that the health halo and resulting increased consumption levels will be driven by estimates of lower-calorie content in foods marketed by firms with reputations for CSR. In turn, we develop the following two hypotheses:

H1: A firm’s strong reputation for CSR leads to greater consumption of its food products.

H2: The effect of a firm’s CSR reputation on food consumption is mediated by an underestimation of calorie content.

Study 1

Method: Participants and Procedure

Participants were 144 undergraduate students who earned extra credit in exchange for participation. Study 1 uses a 2 (CSR: high vs. neutral) × 2 (motive: self- vs. other-oriented) between-subjects design. Participants were told that they would evaluate a soon-to-be-launched brand of granola bars (see Appendix A). They were first given information on the company marketing the product. This information was presented in the form of a Wall Street Journal article and served as the manipulation for both the CSR and motive conditions.

In the high-CSR condition, the company was described as award winning for its CSR activities. In the neutral-CSR condition, the company was described as having recently begun donating to a charity and allowing employees to use payroll deduction to pay for eligible tuition costs. The company motive was manipulated by outlining the response of company management to shareholder concerns over the costs of CSR activities. The self-oriented motive stated that management believed the reputation of a nonprofit partner would enhance corporate image, whereas management in the other-oriented motive condition stated that the activities were driven by a concern for the community. After reading the company descriptions, participants in all conditions were provided a product fact sheet for the granola bars (see Appendix B). They were told that the fact sheet was still in the conceptual stage and, before going further, the company wanted to understand the effectiveness of the product information in stimulating demand for the product.

After reviewing the product fact sheet, participants completed a brief survey to evaluate the product, which included measures of the product’s health properties. In concert with our conceptualization of the health halo and previous research (e.g., Burton et al. 2014), we consider several subordinate attributes under the superordinate “healthy” attribute.

We measured perceived healthfulness on a three-item, seven-point scale (“I expect this product will: ... contain very few preservatives,... be made with natural ingredients,... be very healthy/not at all healthy”; α = .89). Participants also evaluated perceptions of product taste on a three-item taste scale adapted from Elder and Krishna (2010): expected overall quality (1 = “very poor,” and 7 = “very good”), expected overall taste (1 = “very poor,” and 7 = “very good”), and expectations about how delicious the bar would be (1 = “not at all,” and 7 = “very”) (α = .79). We rely on perceptions of taste (vs. actual taste evaluation) because many food products are purchased on the basis of expected taste, without the ability to sample the product first.

Results and Discussion

Manipulation Checks

We conducted manipulation checks to ensure that our manipulations of CSR and company motives were successful. Following the approach Perdue and Summers (1986) suggest, we conducted an analysis of variance (ANOVA) using a three-item scale (α = .87) of CSR as the dependent variable: “This company is a socially responsible company,” “This company is concerned about improving the well-being of society,” and “This company follows high ethical standards” (1 = “strongly disagree,” and 7 = “strongly agree”); Wagner, Lutz, and Weitz (2009). Using the high/neutral-CSR condition and self/other-oriented motives as the between-subjects factors, analysis reveals a main effect for CSR condition (F(1, 136) = 146.64, p < .001). Participants perceived the firm in the high-CSR condition as much more socially responsible than the neutral-CSR firm (Mhigh = 5.76, SD = .54; Mneutral = 4.71, SD = .48). However, neither the main effect on motive (F(1, 136) = 1.17, p = .28) nor the interaction of the CSR condition and motive (F(1, 136) = 5.76, p = .14, p < .001) was significant. Therefore, we deem the manipulation of CSR reputation successful.

Using the same approach, manipulation checks also confirmed that the motivation behind the CSR initiative was perceived in the manner intended. We measured perceived motivation using a four-item, seven-point scale (“To what extent is the company described in the scenario... focused on helping itself?... concerned only for its own self-interest?... caring for the needs of others?... concerned for the well-being of others?”). We created indices of perceived self/other benefits by reverse-scoring the first two items and averaging the items for self (α = .90) and other (α = .91) appeals. An ANOVA revealed a main effect of motive condition on perceived motives (F(1, 136) = 297.73, p < .001). Participants perceived the firm in the self-oriented condition as significantly more focused on benefits to the firm (Msself = 6.01, SD = .39; Mother = 4.66, SD = .52; t(138) = 17.29, p < .001). However, neither the main effect on motive (F(1, 136) = 2.22, p = .14) nor the interaction of the CSR condition and motive (F(1, 136) = 11, p = .74) was significant. Therefore, we deem the manipulation of firm motive successful.

Hypothesis Testing

Our analysis reveals support for H1. Participants perceived the healthfulness of products marketed by firms with a repu-
tation for CSR as significantly greater than products marketed by firms with neutral reputations for CSR (M\text{high} = 4.58, SD = .62; M\text{neutral} = 3.90, SD = .70; t(138) = 5.37, \(p < .001\)). In addition, in support of our proposed moderation, the analysis reveals a significant interaction between CSR reputation and perceived motives (F(1, 136) = 10.44, \(p < .01\)), in support of H\text{2}. Specifically, participants in the neutral-CSR condition perceived the product as neither healthy nor unhealthy, and perceptions were not affected by the perceived motive behind the CSR activities (M\text{neutral, self} = 3.80, SD = .61 vs. M\text{neutral, other} = 4.00, SD = .64; F(1, 74) = 1.90, \(p = .17\)). However, in the high-CSR condition, the other-oriented motive resulted in a significantly higher perception of healthfulness of the product (M\text{high, self} = 4.10, SD = .72 vs. M\text{high, other} = 5.03, SD = .72; F(1, 74) = 26.89, \(p < .001\)). For details, see Figure 1, Panel A.

Supplementary analysis shows further support for H\text{1}. We examined how perceptions of taste varied across the CSR conditions. One of the common consumer perceptions within food categories is that unhealthier products tend to taste better than products that have healthier properties (Raghunathan, Naylor, and Hoyer 2006; Wright et al. 2013). Therefore, if consumers perceive products from companies with strong reputations for CSR as relatively healthy, they should also perceive superior taste in products without strong reputations for CSR. In line with this expectation, analysis of perceived taste reveals a significant interaction between CSR reputation and perceived motives (F(1, 136) = 15.43, \(p < .001\)), in support of H\text{2}. Figure 1, Panel B, shows that participants in the high-CSR condition perceived significantly poorer taste when the company had other-oriented motives (M\text{high, other} = 4.12, SD = .51; M\text{high, self} = 4.96, SD = .52; F(1, 62) = 42.35, \(p < .001\)), but there was no difference in taste perceptions in the neutral-CSR condition (M\text{neutral, other} = 5.00, SD = .66; M\text{neutral, self} = 5.04, SD = .83; F(1, 74) = .39, \(p = .85\)).

### Study 2

Study 1 demonstrates the impact of corporate-level information on consumer perceptions of product attributes. Corporate social responsibility activities that are motivated by a concern for the firm’s stakeholders create a health halo that leads consumers to perceive more healthful attributes in food products. Because Study 1 demonstrates that a perceived motive of stakeholder welfare is necessary for the health halo to occur, in Study 2 we turn our attention to our third hypothesis concerning consumption. This is because a greater public policy implication emerges if the perceived healthfulness of a product leads to increased consumption by consumers. Therefore, in Study 2 we focus only on the scenario with a positive other-oriented reputation for CSR to determine whether such a reputation has effects beyond perceptions of product nutrition to include increased consumption by consumers.

### Method

#### Participants

Participants were 67 students in two evening Masters of Business Administration classes, who participated as part of an in-class research activity. The average age of respondents was 29 years, with a skew toward male respondents (53%).

#### Procedure

Participants were told that they would take part in two ostensibly unrelated studies. They were informed that the first study involved consumer reactions to a new food product and the second study was designed to test memory. In the first study, participants were presented with information...
about a company planning to launch a new line of cheese crackers (we selected crackers to enhance generalizability from Study 1). This information represented the CSR manipulation, including both a high-CSR and a neutral-CSR condition. In the high-CSR condition, the company was described as award winning for its CSR activities, and the neutral-CSR condition contained information about the proposed promotional activities for the launch of the product. Manipulations appear in Appendix C. Importantly, a nutrition information panel for the provided crackers was included as part of the company information presented to participants. The panel contained the serving size (i.e., 30 grams of crackers per serving), number of calories per serving (i.e., 150), and other information as required by the Nutrition Labeling and Education Act standards (e.g., fat, carbohydrates).

After participants read the company information, they were provided a bowl of the crackers to taste. The bowls contained 130 grams of crackers. As with prior research (Garg, Wansink, and Inman 2007), pretesting indicated that this amount was large enough that people would not finish the snack within the total study time. After consumption, participants completed the same three-item taste measure used in Study 1, age and gender measures, and measures of positive and negative affect (Watson, Clark, and Tellegen 1988) to examine mood effects on consumption levels.

Participants were then told that they could continue to eat the crackers during the second study, which involved watching a 30-minute video. The video was a TED talk featuring Richard Branson, and participants were told that they would be given a survey at the end to test their memory of the video content. In reality, this second study served as an extended opportunity for participants to consume the crackers. On completion of the second study, bowls were collected along with the completed surveys and weighed to determine the amount of crackers each person consumed. The measure of consumption, in grams, served as the dependent variable for the study.

Results and Discussion

Manipulation Check

A manipulation check revealed that our manipulation of CSR was successful. We used the same three-item measure from Study 1 (α = .88; Wagner, Lutz, and Weitz 2009). The analysis reveals that the firm described in the high-CSR condition was viewed as more socially responsible than the firm in the neutral condition (Mhigh = 37.5 grams, SD = 5.73; Mneutral = 24.3 grams, SD = 8.4; F(1, 66) = 15.51, p < .001). Thus, this finding supports H3. If the presentation of a nutrition panel had primed participants to think about calorie content, thus affecting overall levels of consumption, this effect would be present in both experimental conditions. Therefore, we have confidence in the impact of a positive reputation for CSR on consumption. Notably, the amount consumed in the neutral-CSR condition was similar to the serving size (30 grams of crackers) noted on the nutrition panel, although only at marginal statistical significance (t(32) = 1.88, p = .07). However, the mean consumption in the high-CSR condition was significantly greater than the serving size (t(33) = 3.97, p < .001). Our analysis revealed no impact of positive or negative affect in this or subsequent studies and will not be discussed further (both ps > .14). Moreover, neither age nor gender was a significant covariate (both ps > .29).

Study 3

Thus far, our studies demonstrate that firms’ positive reputation for CSR can lead consumers to infer healthfulness in products marketed by those firms and that consumption of products marketed by those firms increases relative to firms with neutral CSR reputations. Therefore, in Study 3, our objective is to directly test H3 and H4 to establish that a perception of healthfulness mediates the relationship between a reputation for CSR and increased consumption. Furthermore, because many consumers do not use nutrition panels, in Study 3 we ask consumers to estimate calorie content per serving as part of their survey rather than provide them with a nutrition panel as in Study 2.

Method: Participants and Procedure

Participants were 88 undergraduate students who received extra credit in exchange for participation. Participants were randomly assigned to one of the two CSR conditions (high CSR vs. neutral CSR) used in Study 2. Study 3 used the same two-part study design from Study 2, with participants first taking part in a taste test and then taking part in the memory study with the same 30-minute video. As we noted previously, when participants were presented with the corporate information, they did not receive the nutrition panel. Instead, we asked participants to estimate the number of calories in one serving (i.e., 30 grams of crackers). Importantly, this estimate was collected at the end of the experimental session after participants had been given the chance to consume the crackers. We also collected measures of participants’ current level of hunger and the hours lapsed since their last meal (Garg, Wansink, and Inman 2007). As in Study 2, upon completion of the video the bowls were weighed, and the amount consumed served as the dependent variable.

Results and Discussion

Manipulation Check

A manipulation check revealed that our manipulation of CSR reputation was successful. We used the same three-item measure from Studies 1 and 2 (α = .79; Wagner, Lutz, and Weitz 2009). The analysis reveals that the firm described in the high-CSR condition was viewed as more socially responsible than the firm in the neutral-CSR condi-
tion (M_{high} = 5.41, SD = .37; M_{neutral} = 3.90, SD = .37; t(87) = 19.22, p < .001).

Replicating the results from Study 2, we find that participants in the high-CSR condition consumed significantly more crackers than those in the neutral condition (M_{high} = 36.2 grams, SD = 11; M_{neutral} = 29.65 grams, SD = 10.2; F(1, 87) = 8.07, p < .01). Several covariates used in the model did not reach significance, including the number of hours elapsed since participants last ate a meal, reported degree of hunger during the study, age, and gender (all ps > .17). The analysis reveals that the mean consumption in the high-CSR condition was significantly greater than the serving size (t(44) = 5.61, p < .001). Therefore, we find the same overconsumption effects due to the health halo from the firm’s CSR reputation both with (Study 2) and without objective nutritional information, again in support of H3. Although the differential increased consumption is relatively small, approximately a 30-calorie increase, the results support a health halo used in creating product-level inferences. Across multiple consumption settings, including a natural environment, this difference can accumulate to more significant overconsumption.

Mediation Analysis

Estimates of calories per serving differed significantly between the high- and neutral-CSR conditions. Participants in the high-CSR condition estimated that each serving contained 165 calories, and those in the neutral-CSR condition estimated 197 calories per serving. Although both estimates are above the actual amount of calories per serving (i.e., 150), the calorie estimates in the high-CSR condition were significantly lower (t(87) = 3.15, p < .01). To test the proposed underlying mechanism between the presence of CSR information and overconsumption (i.e., the health halo), we conducted a mediation analysis using the estimated number of calories per serving as the mediator. To test this mediation, we followed Preacher, Rucker, and Hayes’s (2007) bootstrapping procedure (Model 3). The results show that consumers tend to overconsume products marketed by a firm with a strong reputation for CSR because they underestimate the number of calories in the products (b = -1.55, 95% confidence interval = [-3.68, -2.51]). Because the confidence interval in the bootstrapping processes does not include zero, this finding demonstrates that the effect of CSR reputation on consumption levels is mediated through estimates of calorie content.

To further examine the mediation of calorie estimates, we followed the procedure Baron and Kenny (1986) prescribe and tested for three conditions that must be met to demonstrate mediation. First, the independent variable must predict the outcome variable. Second, the independent variable must also predict changes in the proposed mediator. Third, the mediator must be shown to account for a significant portion of the relationship between the independent variable and the outcome. Linear regression analysis revealed that the CSR condition significantly predicted the amount of grams consumed (t(86) = 3.15, p = .002, β = 31.32). Furthermore, the CSR condition significantly predicted the proposed mediator, calorie estimate (t(86) = 2.89, p = .005, β = 6.55). When we included the CSR condition in the regression equation predicting the number of grams consumed along with calorie estimates, the calorie estimate was a significant predictor of the grams consumed (t(85) = 3.45, p = .001, β = 8.1). Finally, although the CSR condition continued to predict the number of grams consumed (t(85) = 2.05, p = .043, β = .05), a Sobel test confirmed that the indirect effect of CSR condition on grams consumed by means of the mediator (calorie estimates) was significant (z = 2.13, p < .05; Baron and Kenny 1986). Thus, estimates of calorie content partially mediated the relationship between CSR reputation and grams consumed, in support of H4.

Study 4

Although our previous studies provide support for each of our hypotheses, in Study 4 we aim to generalize the health halo demonstrated in the previous three studies using a nonstudent sample. In addition, Study 4 uses a measure of participants’ estimated calories consumed, as opposed to the estimated calories per serving measure used in Study 3. This is important because it enables us to understand not only how estimates of calories affect consumption but also how CSR reputation affects retroactive assessment of consumption levels, which in turn affects future consumption.

Method

Sample

Participants were 41 members of a private club affiliated with a major Southeastern U.S. public university. The club has strong affiliations with the university’s athletic programs. The sample slightly skewed male (52%), with a mean age of 52 years (ranging from 27 years to 81 years). Members of the club were recruited through an e-mail solicitation (see Appendix D) and offered a chance to win a gift card after participating.

Procedure

We used the same two-part procedure and stimuli from Study 3. Participants arrived at the club and were told that they would take part in two separate studies. The first involved the taste test of cheese crackers and the second involved a memory test. Because of the club’s affiliation with the university’s athletic program, participants were told that the memory study was intended to understand how consumer-created Internet sports content is processed and stored in memory. The video shown was a 19-minute fan-created recap of the previous year’s football season.

Upon completing the second study, participants were asked to estimate how many calories they believed they consumed and were thanked for their participation. As with previous studies, we measured the number of crackers consumed by weighing each bowl. This enabled us to create a difference variable of participants’ estimate of the number of calories consumed minus the actual amount consumed.
Results and Discussion

Manipulation Check
A manipulation check revealed a successful manipulation of CSR. Again, the three-item measure of CSR (Wagner, Lutz, and Weitz 2009) reveals that the firm described in the high-CSR condition was viewed as more socially responsible than the firm in the neutral condition (M_high = 5.54, SD = 61; M_neutral = 3.92, SD = .55; t(39) = 8.91, p < .001; α = .87).

Consistent with previous studies, participants in the high-CSR condition consumed significantly more crackers than those in the neutral-CSR condition (M_high = 49.8 grams, SD = 20.8; M_neutral = 35.0 grams, SD = 13.7; F(1, 35) = 5.58, p = .024). Age, gender, and self-reported hunger state did not affect the amount consumed (all ps > .46). In computing the difference score between the actual amount of calories consumed versus participants’ estimates, we find that although participants in both conditions underestimated the amount of calories they consumed, the underestimation was significantly greater for those in the high-CSR condition (M_high = -88.2 calories, SD = 74.4; M_neutral = -18.9 calories, SD = 37.35; F(4, 36) = 10.26, p < .01). Therefore, H2 is further supported, demonstrating that the health halo (i.e., overconsumption and underestimation of calories consumed) is greatly influenced by the utilization of a corporate reputation for CSR in consumers’ inference-making process.

We did not examine the relationship between participants’ estimates of calories consumed and the number of grams consumed, because they are theoretically distinct. In Study 3, estimates of calorie content of one serving of the snack anchored consumers on a specific quantity. However, many factors affect estimates of consumption, such as misperceptions of the size and number of servings consumed (Chandon and Wansink 2007b; Chernev and Chandon 2010), mood (Garg, Wansink, and Inman 2007), and even the taste and haptic properties such as hardness of the food itself (Biswas et al. 2014). Although this distinction did not lead us to examine mediation, the finding of an effect of CSR reputation on estimates of calories consumed is important for the study of consumer welfare. Whereas Study 3 illustrates how perceptions of the calorie content of a serving size can lead to higher rates of consumption, Study 4 shows that this same effect may be present in reflections of consumption, leading to increased future consumption (May and Irmak 2014).

Discussion and Implications
Across four studies, we demonstrate that a corporate reputation for CSR leads to a health halo and subsequent underestimation of calorie content and overconsumption. We examine how a perceived motive for preserving stakeholder well-being is central to this effect. We also show that this health halo can lead to overconsumption (Studies 2, 3, and 4), even in the presence of objective nutritional information (Study 2), and that this effect is mediated by lowered estimates of calorie content (Study 3).

Previous research has shown that consumer perceptions of product performance on attributes related to well-being are highly malleable and influenced by a range of factors (e.g., Chandon and Wansink 2007a; Irmak, Vallen, and Robinson 2011). This effect is particularly strong in certain categories such as the food products used in the current research, for which consumers use inference making to fill in knowledge gaps by accessing other salient information known about the product or the consumption environment. Our research extends this literature by examining corporate-level information that has no direct relevance to product-level attributes (Keller 1993). Our examination of the interplay between inferences based on corporate-level information and tangible product performance expectations is, to our knowledge, the first of its kind. Therefore, we develop the concept of extra-attribute misperceptions, extending the typology of Hastak and Mazis (2011). Our research also extends and identifies an important boundary condition to seminal work by Brown and Dacin (1997), who find only an indirect path between CSR and consumer influence. In categories in which corporate-level reputation leads to product performance inference (i.e., a health halo), our research shows a direct and significant effect. Furthermore, we extend previous research examining consumers’ use of nutrition information to examine how inference making in this area can lead to increased consumption for many consumers.

We also extend work by Luchs et al. (2010), who speculate that brands known for CSR may be viewed as more homegrown and simple, whereas brands without such reputations may be viewed as more sophisticated and sexy. They point out that further research is needed to examine how ethicality interacts with other benefits sought by consumers. The research presented here addresses their call and finds, across four studies, that the CSR reputation of a firm/brand significantly influences perceptions of product healthfulness. This is important because product performance typically takes precedence over other non-product-related attributes (i.e., corporate philanthropy) in consumer decision making.

In addition, the findings we present offer numerous implications for public policy makers. First, our examination of corporate-level CSR activities allows for a deeper understanding of how greenwashing can be used to manipulate consumer perceptions. Critics of CSR have noted that firms often attempt to use social responsibility activities to mask deeper issues with their products or services. For example, in response to health concerns over rising obesity rates from consumers and public health advocates, major soda manufacturers have recently employed corporate-level CSR initiatives (e.g., PepsiCo's Refresh Project, Coca-Cola's Live Positively) to enhance corporate image (Dormman et al., 2012). Often, the firms with the most activity in corporate philanthropy are those most targeted by activists who charge that the donations are merely attempts to divert attention away from more pressing social or environmental issues. Our research demonstrates that in categories with a high degree of salience for consumer well-being, such as food, consumers may bias their perceptions of product performance on the basis of efforts that can be characterized as greenwashing.
Consumers who believe that they are choosing healthy and safe products may actually be choosing the opposite. Similarly, consumers who make these inferences may change their consumption patterns (e.g., eat more) under the false assumption that they are making healthy choices. If consumers trying to eat a healthy diet inaccurately estimate nutritional content of products marketed by firms with strong reputations for CSR, this can lead to serious health consequences for both individuals and society. Although Food and Drug Administration-mandated nutrition labels offer the opportunity for consumers to counter any biases before purchase and consumption, the efficacy of such labels is equivocal. Consumers’ ability to interpret Food and Drug Administration labels is subject to the same use of heuristics in other food labels and therefore subject to bias from CSR reputation. Our research suggests that corporate-level CSR information can influence perceptions of product healthfulness, even in the presence of objective nutritional information. Further research is needed on the effectiveness of labeling and disclosure regulation to account for these misperceptions.

Limitations and Further Research
As with any research, this article has limitations that create opportunities for future studies. For example, we dichotomize attributions (intrinsic vs. extrinsic) in examining the effects of corporate motive (Study 1), when consumers can increasingly combine a multiplicity of motives simultaneously (Ellen, Webb, and Mohr 2006). Note also that the effects described here may not be ubiquitous even within categories in which health attributes are salient. Therefore, firms interested in communicating their CSR activities should align such communications with other marketing efforts to ensure the proper integration of all marketing elements toward a specific audience. This may require firms with multiple brands to promote CSR at the individual brand level (e.g., Procter & Gamble’s community efforts are branded using Crest, Tide, etc. rather than the corporate name) to create stronger linkages between perceptions of stakeholder well-being and specific products and market segments. In particular, further research is needed to explore how the effects presented here influence consumer attitudes toward, and consumption of, known brands that engage in CSR. Our manipulations presented a fictitious brand, and although many well-known brands are adopting CSR practices, existing attitudes toward those brands may attenuate our results.

Another fruitful avenue for further research is to assess the challenge of information location. A particular problem related to food products is that CSR information is often present on the packaging, making this cue highly salient at the point of purchase and consumption. One avenue policymakers can explore is the use and effectiveness of product disclaimers. However, evidence for the effectiveness of disclaimers remains unclear (Green and Armstrong 2012). Future studies can explore the potential for limiting the amount of CSR information marketers may provide on packaging materials as well as how disclaimers can be used to alter the effects of health halos.

Another worthwhile topic for further research is the interplay between taste and healthfulness and its effects on consumer decision making. We find that consumers perceive food products marketed by companies with strong reputations for CSR as healthier but less tasty than those marketed by firms without reputations for CSR. Although consumers typically rely on more traditional attributes (e.g., taste) when choosing food products, given that some consumers are moving toward healthier lifestyles, examination of the effects related to the trade-off between taste and healthfulness would provide abundant opportunities for further research.

Finally, future studies can investigate the role of product category on consumer inference making by extending the current research into various field settings. Although the current research captured behavioral data, it is possible that the “memory study” setting affected consumption. Extending this stream of research into categories beyond food may allow for a better understanding of how halos affect decisions that are perhaps less subject to consumer inference. Food products are highly subject to influence, but these same effects may potentially occur in high-involvement categories such as automobiles. For example, safety is a significant product attribute for many consumers when purchasing an automobile. However, the 2012 Insurance Institute for Highway Safety lists 118 models as “top safety picks,” with all major domestic and import manufacturers represented. The complexity of information and brand parity in cases such as this suggests that corporate-level CSR information can affect perceptions about attributes in categories that are, at least in theory, more concrete. Similarly, individual consumer differences can be explored. For example, how does familiarity with the product affect inference-making through corporate-level CSR information? It is likely that as consumers gain more experience with a product category, the effects may be diminished and, therefore, the public policy implications may be less pressing.

Appendix A: Study 1 Materials
Elysian Farms is launching a new line of granola bars. The company has a rich history of high quality food products, but this move marks the first time the company has moved into more mainstream consumer markets. In particular, this is the first time the company will try to attract a younger demographic. Most of the company’s products to date have been targeted toward older consumers, and skewed toward baking ingredients and other pantry staples. Company Vice President Vic Cameron explains why this tradition is a good base for the new move. “We have always prided ourselves on producing high quality products, and meeting standards of some of the toughest food consumers in the world. I think young people today will see a tangible difference in our products, and recognize that we have brought that expertise and heritage to this product in a new and exciting way.”

High-CSR Version
The move comes on the heels of a great year for the company. This summer, Elysian was named one of the top 100 corporate citizens in America. The company received high marks across a range of social and environmental issues. Danica Morgan, Director of Research and Insight Metrics, the company behind the rankings, says the company scored
well across the board. "Elysian scored tops for all companies in the survey for community involvement. They have a long history of support for charities, and they go beyond just writing checks. They give their employees time off to volunteer in the communities, and get involved with donations of food and money to many local food banks around the country." The company also lets its customers have a say on what donations will receive support from the company. "We like to engage our customers in our donation programs to make sure we are looking after not just the needs of those in our community, but the needs of our customers as well," explains Cameron.

Not surprisingly, this philosophy of caring has also landed the company accolades from its employees. Earlier this year the company was named to the "Top 50 Places to Work in America" award. Nomination and voting is done by employees, who contribute their stories of how the company looks out for them. Nominations included stories of single moms who were given funded day care for their children, after-hours education opportunities for all employees, and a policy of not laying off employees, even in the recent downturn. Cameron explains, "We try to have the courage to do things that not every company does."

Neutral-CSR Version

The move comes on the heels of a great year for the company. This summer, Elysian announced the creation of a corporate social responsibility program within the company. The plan, according to a company spokesperson, is to begin working with a number of local charities as well as beginning to take stock of the environmental footprint of the company. Danica Morgan, Executive Director with one of the three charities recently engaged by the company, said she was excited to have the chance to work with the company. "They have been a member of the community for many years, and it's good to see them starting to engage with the local nonprofit community. We have made some initial steps toward working together. It would be great if the relationship could eventually lead to a deeper partnership where we share more of resources, but being a nonprofit we can't be choosy." VP Cameron also commented on the arrangement. "We are happy to be working with groups that are doing good work in our community," explains Cameron.

This past year the company also announced a plan to change the way management and employees interact. The plan is for the company to offset some of the health care cost of employees, and offer partial coverage for some employees not currently covered. In addition, the company announced plans to offer payroll deduction to allow employees to pay for eligible tuition costs in before-tax dollars. Cameron explains, "We try to find ways to give value back to our employees, and help out where we can. At the end of the day, if the company is profitable, we should share some of that good fortune with our employees."

Other-Oriented Motive

At the recent annual meeting of shareholders, a number of questions were raised about the cost of the activities behind the awards. But Cameron is confident: "My father founded this business 75 years ago on the principle that the company should serve the needs of the community, not the other way around. I try my best to live up that principle every day. It may also help our reputation, but the community comes first. When the community wins, we all win." The Executive Director with one of the charities on the donor list of the company, who is quoted in the research report, confirms that the company has a heart. "They go clearly above and beyond what most companies do in philanthropy. They don't just write a check and move on. Their employees volunteer with us, and it's obvious from speaking with anyone in the company that the spirit of community runs deep in the corporate culture. It's what motivates them to work with us and other charities."

Self-Oriented Motive

At the recent annual meeting of shareholders, a number of questions were raised about the cost of the activities behind the awards. But Cameron is confident: "We know that reputation is important today. If we can get an edge by doing these things, then we should do them. The point is that when consumers buy our products we split some of that money with a nonprofit. Isn't that what nonprofits are always asking for? In exchange, we place their logo in our ads and on our letterhead. It's a good example of a business partnership that works for both partners." The Executive Director of one of the charities sponsored by the company confirms the benefits to the company. "I think they were looking to align with an organization that had roots in the community, and a bit of a human feel to them. I think it's definitely helped their brand."

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Appendix B. Study 1 Product Fact Sheet

| Elysian Farms is proud to introduce a new line of granola bars. The bars will carry the Elysian Farms brand name, found on many other quality products. |
|---|---|---|---|---|
| - Available in three varieties - almond, chocolate, and peanut butter |
| - Offered in single packs, packs of 5, and packs of 18 in select retailers |
| - Suggested Retail Price: $3.59 for a pack of 5 |
| - Offered in all major grocery stores nationwide |
| - Launching nationally this Fall |

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Appendix C: Study 2 Manipulations

Thank you for giving us feedback on our new cheese crackers. We are excited about this product, and feel that it will be a very popular snack food with consumers of all ages.

CSR Condition

Our company’s commitment to consumers extends beyond just making great products. We also believe passionately that a company needs to be part of the communities in which it operates. That’s why we donate 1% of all sales from our products to charities. We support a broad range of charities at work right here in our community including those that provide food for the homeless and others less fortunate.

We also believe that our commitment to community extends to our employees. Earlier this year our company was named one of the “Top 50 Places to Work in America.” Nomination and voting is done by employees, who contribute their stories of how the company looks out for them. Nominations included stories of single moms who were given funded day care for their children and after-hours education opportunities for all employees. The company also provides health insurance to all employees, even those who work part-time.

Neutral Condition

Our launch of this product will include a marketing communications plan that spans across a range of media. For example, we will support the launch of the product with television advertising that will include spots on both day time and prime time national networks. The plan will also include a large online media presence, with a significant budget being allocated to display advertising on food-related web sites.

The retail portion of the launch will also receive significant attention. The product will be stocked in a range of retail outlets, from large supermarkets to smaller convenience stores and drug stores nationwide. The placement of the product will be mainly in the cracker aisle, but we will also purchase end-of-aisle displays at key purchase periods. The retail launch will also include placement in retail flyers that grocery stores distribute to consumers, and both print and online coupons.

Nutrition Panel

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serving Size 27 crackers (30g)</td>
</tr>
<tr>
<td>Amount Per Serving</td>
</tr>
<tr>
<td>Calories 150 Calories from Fat 70</td>
</tr>
<tr>
<td>% Daily Value*</td>
</tr>
<tr>
<td>Total Fat 8g 12%</td>
</tr>
<tr>
<td>Saturated Fat 2g 10%</td>
</tr>
<tr>
<td>Trans Fat 0g</td>
</tr>
<tr>
<td>Polyunsaturated Fat 4g</td>
</tr>
<tr>
<td>Monounsaturated Fat 2g</td>
</tr>
<tr>
<td>Cholesterol 0mg 0%</td>
</tr>
<tr>
<td>Sodium 230mg 10%</td>
</tr>
<tr>
<td>Total Carbohydrate 17g 6%</td>
</tr>
<tr>
<td>Dietary Fiber less than 1g 3%</td>
</tr>
<tr>
<td>Sugars 0g</td>
</tr>
<tr>
<td>Protein 3g</td>
</tr>
<tr>
<td>Vitamin A 2% • Vitamin C 0%</td>
</tr>
<tr>
<td>Calcium 4% • Iron 6%</td>
</tr>
</tbody>
</table>

* Percent Daily Values are based on a 2,000 calorie diet.

Appendix D: Study 4 Recruitment E-Mail

We would like to invite you to participate in a University study examining the impact of fan-created sports-related video content on the internet. During the 45 minute research session you will re-live the memories of the 2013 season, enjoy a snack, and participate in the knowledge creation process of university faculty.

The College of Business will be raffling off one $50 Amazon gift card per session.

The sessions are: Monday, March 24: 3:00–3:45 P.M. Tuesday, March 25: 3:00–3:45 P.M.

Seating is limited to 25 Members per session. If you would like to participate in one of the following sessions, please let us know by March 20, 2014. Reservations for the sessions can be made by e-mail or by calling your Member Services Representatives.

References


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