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You taste what you see: Do organic labels bias taste perceptions?

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ABSTRACT

Does simply believing that a processed food is organic improve how enjoyable it tastes, influence caloric estimations, or increase how much people are willing to pay for the item? In the present study, 115 participants recruited from a local shopping mall were asked to taste and evaluate three paired food samples (i.e., cookies, potato chips, and yogurt). Each of those food samples was labeled, specifying one of the items in the pair as 'organic' and the other label specifying its counterpart as 'regular', although they were identical and organically produced. Results found that participants estimated those foods with organic labels to be lower in calories than those without the organic label. Furthermore, foods with the organic label elicited a higher willingness-to-pay and yielded better nutritional evaluations (e.g., tastes lower in fat, higher in fiber) than foods without the organic label. Finally, results found that the effects of the organic label on caloric estimations were less pronounced among people who typically read nutritional labels, who often buy organic foods, and who often engage in pro-environmental activities. This underscores the idea that the health halo effect is primarily driven by automatic processing based on heuristics. Understanding how consumers use nutritional information on product labels has important implications for both public policy as well as processed food manufacturers who use such claims as tools to market their products.

1. Introduction

In recent years, marketers have been able to capitalize on the consumer trend towards healthier foods. This is especially true in the area of organic foods, which have become increasingly available to consumers. While there exist variable – and contested (e.g., Strom, 2012) – definitions for what constitutes organic food, the United States Department of Agriculture (USDA, 2009) defines organic foods as those "produced without using most conventional pesticides; fertilizers made with synthetic ingredients or sewage sludge; bioengineering; or ionizing radiation." As evidenced by reports that organic foods are available in nearly 3 of 4 conventional grocery stores (USDA, 2009), it now seems hard not to encounter organic foods in the local supermarket. Furthermore, it seems that organic foods have been a main contributing factor to revitalizing grocery sales in recent years. In fact, a 2004 survey conducted by the Organic Trade Association (2006) showed that organic food sales are growing at a faster rate than sales of conventional food products.

The growth of the organic market has been attributed, in part, to consumer concerns regarding various additives, pesticides, hormones, and antibiotics, which are believed to be more prevalent in conventional foods than in organic foods (Latacz-Lohmann & Foster, 1997). Yet, although there is little data to substantiate these claims (e.g., Smith-Spangler et al., 2012; Williams, 2002), preliminary evidence has suggested that the perceived legitimacy of the USDA's 'organic' label can influence consumer purchases in a favorable way, leading consumers to perceive organic-labeled foods to be healthier than conventional foods (Magnusson, Arvola, Hursti, Åberg, & Sjödén, 2003). If those same labels can influence how people judge a food product's overall healthfulness, perhaps it is important to assess whether these labels are truly beneficial for helping consumers construct a healthier diet.

1.1. Package labels and consumer information processing

Past research suggests that package elements, especially package labels, can influence how consumers evaluate a food product as well as how much they consume (see Bublitz, Peracchio, & Block, 2010, for a review). While traditional food quality aspects, including sensory attributes such as appearance, taste, and smell are significant to most consumers, non-sensory attributes of foods, such as nutritional value, the absence of food additives and residues, or the process through which a food is produced have become increasingly prominent as well (Torjusen, Lieblein, Wandel, & Francis, 2001; Wilkins & Hillers, 1994).

On the other hand, research also suggests that routine buying situations, such as weekly grocery shopping, constitute a type of consumer behavior which entails processing at lower levels of

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involvement (Park, Iyer, & Smith, 1989). This low-involvement level is characterized by a negligible information search and little deliberation in brand and product choice (Beharrell & Denison, 1995; Brucks, Mitchell, & Staelin, 1984; Silayoi & Speece, 2004). Importantly, the limited cognitive involvement makes people prone to a phenomenon known as the halo effect. The halo effect occurs when an individual's evaluation of one attribute of an entity strongly influences or biases his or her perceptions of other attributes of that entity.

Indeed, Nisbett and Wilson (1977) have deemed the halo effect to be an unrecognized process, proposing that people have little awareness of the existence of the cognitive processes that underlie their judgments and inferences. Consistent with dual-process models of social cognition (e.g., Bargh, 1989; Chaiken, 1980), people unconsciously use heuristics to make judgments when an object belongs to a product category whose 'members' have judgment-relevant attributes, unless people deliberately avoid such automatic influence on judgment. Examples of halo effects include the ways in which familiarity with a person's positive and negative traits can correspondingly influence – without deliberate thought – how a person's relative attractiveness is perceived (e.g., Kniffin & Wilson, 2004).

Accordingly, health halo effects have been found to occur in the case of consumer evaluations of health claims on food packages. For example, Roe, Levy, and Derby (1999) found that the presence of a health claim (e.g., high in calcium for yogurt) induced consumers to rate a product healthier and more likely to purchase it. In addition, Roe et al. found that the presence of health claims increased the probability that respondents limited their information search, such that only information from the front label – rather than information from the Nutrition Facts panel – was viewed. Those results suggest that health claims may, in fact, help to generate a halo effect whereby consumers make relatively automatic extrapolations about a given product's healthfulness if claims for health benefits were featured on the package.

Similarly, Schuldt and Schwarz (2010) examined the impact of organic claims on biasing calorie judgments. Specifically, they asked participants to rate the organic- versus non-organic-labeled cookie on a computer screen, and found that participants inferred that an organic-labeled cookie was lower in calories and could be consumed more frequently. It is important to note, however, that the presence of an organic claim not always induced consumers to rate a product in positive ways. For instance, Schuldt and Hannahan (2013) recently demonstrated that, while organic foods were perceived as more healthful than conventional foods, they were rated as less tasty (see also Westcombe & Wardle, 1997).

Because the two studies by Schuldt and colleagues employ computer-based measurements to assess the effects of the organic versus non-organic labels on the calorie and taste evaluation, it is unclear if a person's actual taste experience of organic-labeled foods also leads to lower calorie and taste ratings. Thus, the purpose of the present study is to examine actual taste evaluations in an attempt to elicit more realistic judgments concerning the influence of an organic label, by employing a within-participants design where participants tasted and rated both the organic-labeled food and the non-organic-labeled food. This study includes both healthy (i.e., yogurt) and less healthy (i.e., cookies and potato chips) organic foods, and those three items provided examples of organic foods of differing tastes (sweet, salty, and slightly sour) and textures (crunchy, smooth, and creamy).

Furthermore, because it is important to address specific domains of evaluations (e.g., healthy versus tasty) on organic-labeled foods as indicated in Schuldt and Hannahan (2013), this study also asked participants to rate four nutrition-related evaluations (i.e., high in fat, high in calories, nutritious, and a lot of fiber) and four taste-related evaluations (i.e., appetizing, flavorful, tasted good, and tasted artificial) in addition to overall caloric estimations. Additionally, we asked participants to indicate how much they are willing to pay (WTP) for those foods. Thus, we examined whether participants who eat foods labeled organic will rate them higher on several different nutritional and sensory attributes (e.g., higher in fat, more appetizing) in addition to providing a higher caloric estimation and WTP than foods that are not labeled organic.

In addition, this study seeks to examine if the health halo effect – the effects of the organic label on perceptions and evaluations – are less pronounced among people with three behavioral characteristics. Consistent with the dual process models, we wanted to examine if the effects were weaker for those who often engaged in careful, deliberative processing than those who typically engaged in low involvement or automatic processing based on heuristics. The first moderator is the frequency with which a consumer reads nutrition labels. Namely, those who read nutrition labels are motivated to acquire more nutritional knowledge, leading to more deliberative processing and more accurate estimations and perceptions. Thus, we hypothesize that participants who reported higher frequency of reading nutrition labels on food packages would be less susceptible to exhibiting this health halo effect.

The second moderator is the frequency of purchasing organic foods. Because those who possess prior awareness of organic foods may engage in more deliberative processing than those who are less familiar with organic foods, they may not be as susceptible to the health halo effect during evaluations of a product. We thus hypothesize that those who possess a higher frequency of purchasing organic foods would be less susceptible to the health halo effect.

Finally, as in Schuldt and Schwarz's (2010) study, the third moderator we examine is pro-environmentalism. Specifically, at high levels of pro-environmentalism as assessed by New Ecological Paradigm scale (Dunlap, Van Liere, Mertig, & Jones 2000), Schuldt and Schwarz found that participants exhibited the predicted halo effect whereby the organic claim biased caloric judgments downwards in contrast with participants at lower levels of pro-environmentalism who did not exhibit the halo effect. If one assumes, however, that people who pursue pro-environmental activities tend to be more knowledgeable about organic food, then one would expect that pro-environmental actors should engage in deliberative processing, which would minimize any halo effect. The present study intended to focus on the behavioral elements of pro-environmentalism – by assessing whether participants engage in recycling and hiking. Consistent with the dual-process model, we hypothesize that participants who report relatively high levels of environmental activity would be less likely to show the health halo effect than those who rate lower on our pro-environmentalism measures.

2. Method

2.1. Participants and design

One hundred fifteen (50 male, 60 female, 5 unreported) participants were recruited from a local shopping mall in Ithaca, New York, over a period of two days[1] . Participants received $5 in cash in exchange for their participation. The participants' ages ranged from 16 to 76 years old (M = 34.24, SD = 16.75) and their Body Mass Index (BMI) ranged from 16.4 to 55.8 (M = 27.95, SD = 7.08). We applied a within-participants design in which participants were asked to taste and evaluate three food samples. The experimental conditions and order of food presentations were counterbalanced to avoid

[1] Data from 29 additional participants who failed to respond to crucial measures (e.g., caloric estimation) were excluded.