The Influence of Visual Aesthetics on Food Choice: the Moderating Effect of Food Processing

Jacob Suher, Portland State University, USA
Courtney Szocs, Portland State University, USA
Koert van Ittersum, University of Groningen, The Netherlands

Billions of pounds of safe-to-eat fruits and vegetables are discarded due to aesthetic imperfections. Yet restaurants and manufacturers intentionally design processed foods to contain aesthetic imperfections. We examine this phenomenon and how the effects of aesthetic imperfections on consumer choice vary based on whether the foods have been mechanically processed.

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Koert Van Ittersum, University of Groningen, The Netherlands

EXTENDED ABSTRACT

Each year billions of pounds of produce are thrown away due to aesthetic imperfections (i.e., blemishes, unconventional shapes; Bratskeir 2015), often because retailers and consumers refuse to purchase products that fail to meet strict cosmetic standards for visual perfection (Royte 2016). Interestingly, as safe-to-eat fruits and vegetables are discarded because of their imperfect appearance, food manufacturers and restaurant chains intentionally manufacture products that are aesthetically imperfect. For example, employees at Domino’s Pizza purposefully shape dough into irregular rectangles when preparing Artisan Pizza (Choi 2013). Why is it that retailers and manufacturers discard fruits and vegetables that contain aesthetic imperfections yet design processed foods to contain aesthetic imperfections?

In contrast to conventional wisdom that “beautiful is good” (Veryzer and Hutchinson 1998), our research provides evidence that in some cases consumers prefer aesthetically imperfect (vs. perfect) foods. We show that preference for aesthetically perfect (vs. imperfect) food depends on the level of mechanical processing the food has undergone. Specifically, in four studies we show that when given a choice between unprocessed foods (e.g., apples) consumers prefer the aesthetically perfect option. However, when given the choice between two processed foods (e.g., two bowls of applesauce) consumers prefer the aesthetically imperfect option. These effects are attenuated for both unprocessed and processed foods when individuals have the opportunity to sample the items before choosing. First, we conducted a pretest to identify images of unprocessed and processed foods that differed in terms of the degree of visual perfection, but were similar in terms of healthiness, size, and safety. In the main study (study 1a), members of an online panel were randomly assigned to view either a pair of unprocessed foods (i.e., carrots) or a pair of processed foods (i.e., pizzas). For each pair, one option was aesthetically perfect and the other option was aesthetically imperfect (as determined by the pretest). Participants were asked to indicate which item they would prefer to eat. The results showed that participants who viewed the pair of unprocessed foods were significantly more likely to choose the aesthetically perfect option than participants who viewed the pair of processed foods (P carrots = 79.59% vs. P applesauce = 58.82%; χ² = 5.039, p < .05). One shortcoming of study 1a is that we used two different food items for the processed and unprocessed foods. In study 1b we address this shortcoming by using the same food item and varying only the level of mechanical processing. Study 1b had a one-factor between subjects design with two experimental conditions (food type: processed vs. unprocessed). Members of an online panel (N = 71; Mage = 30.30; 52.1% females) were randomly assigned to view a pair of apples (unprocessed condition) that were the same weight and type but varied in appearance (i.e., one had a uniform shape and texture and the other had a variable shape and texture). Participants in the processed condition viewed two bowls of applesauce. The applesauce was created by mechanically processing (i.e., blending) an apple and water. Each bowl contained the same amount of applesauce, but the bowls varied in appearance. The aesthetically perfect applesauce had a uniform texture and color due to a lack of apple chunks and apple skin. The aesthetically imperfect applesauce had a variable texture and color due to the presence of apple chunks and skin. The lateral position of the options was counterbalanced. After viewing the pair of foods participants indicated their preference (1 = definitely option A, 7 = definitely option B). The data was prepared so that “option A” always represented the aesthetically perfect food option. A one-way ANOVA revealed that participants had a stronger preference for the aesthetically perfect option when they viewed unprocessed (vs. processed) foods (M unprocessed = 6.1714; F (1, 69) = 25.587, p < .01).

Consumers rely on heuristics when information is ambiguous (Kruger et al. 2004), but are less likely to use such heuristics when information is unambiguous. Thus, in the context food choices, the effect of aesthetic imperfections should be less influential in driving choice when taste information is available (i.e., unambiguous). Study 2a tested this idea using a one factor between subjects experiment (taste information present vs. absent). Participants (N=71) chose between an aesthetically perfect and imperfect unprocessed food (i.e., whole oranges). The key finding was that participants were significantly more likely to choose the aesthetically imperfect orange when they had the opportunity to sample prior to choosing than when they did not have the opportunity to sample prior to choosing (P sampling present = 53.66% vs. P sampling absent = 16.67%; χ² = 10.059, p < .01). Study 2b was similar to study 2a except that the study was a field experiment at a grocery store and shoppers (N = 41) choose between two processed foods (i.e., cookies) when taste information was present or absent. The results showed that preference for the aesthetically imperfect cookie decreased when taste information was present (i.e., when individuals were allowed to sample the food before choice) (P multi-sensory present = 71.7% vs. P multi-sensory absent = 54.0%; χ² = 3.461, p = .07). Collectively, studies 2a and 2b suggest that retailers can overcome the effects of aesthetic imperfections on food choice by providing diagnostic taste information.

The results of four studies show that consumers prefer aesthetically perfect (vs. imperfect) unprocessed foods and aesthetically imperfect (vs. perfect) processed foods. These effects are attenuated for both unprocessed and processed foods when individuals have the opportunity to sample the items before choosing. Theoretically, our findings contribute novel evidence that the “form” of a product moderates the influence of visual aesthetics on choice. While much is known about the stimulus factors and individual differences that drive aesthetic impressions (e.g., Veryzer & Hutchinson 1998), we demonstrate that visual aesthetics can have either a positive or, counterintuitively, a negative influence on consumer choice. Our findings also contribute evidence that food processing influences consumer food choices (Szocs and Lefebvre 2016). From a sustainability perspective, our findings provide evidence that multi-sensory information can increase consumers’ acceptance of visually imperfect produce.

REFERENCES

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