When Color Meets Health: the Impact of Package Colors on the Perception of Food Healthiness and Purchase Intention

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In this paper we use food package color as a visual cue that can be assimilated to the health connotation of verbal nutrition labeling. Compared with hedonic food, utilitarian food in blue package is perceived healthier than in red package. The perception also mediates the purchase intention of package food.

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EXTENDED ABSTRACT

The rising obesity epidemic (Flegel, Carroll, Kit, and Ogden 2012) arouses consumers’ healthy eating concerns and motivates food manufacturers to improve the nutritional content of their products towards a healthier direction. In a real-life grocery shopping situation, however, consumers often lack time or motivation to search and process detailed nutrition information to support their judgment and purchase decision (Wansink and Sobal 2007). Thus, visual cues, such as color, become critically influential because processing this type of information requires little cognitive resource. Although substantial research has been given to food color (e.g., Stillman 1993, Christensen 1985), the package color, as influential visual information on food decision making, is overlooked. This research aims to explore the effect of package color on consumer’s perception and behavioral intention on contained food. We expect that food in blue package is perceived healthier and hence associated with a higher purchase intention than in red package.

Furthermore, in the present research foods are categorized as utilitarian or hedonic products based on the major motives behind their consumption. The consumption of utilitarian foods is driven by their functions (Dhar and Werttenbroch 2000), such as quest hunger or reduce diseases risks, whereas the desire to eat hedonic foods is mainly driven by the anticipated hedonic experience of eating, such as the palatability of foods (Benforando, Hanson, and Yosifon 2004). Empirical findings revealed that hedonic foods may not be intuitively perceived as healthy as utilitarian foods because sensory pleasure often are associated with sweet, salty, and fatty hedonic foods (Assanand, Pinel, and Lehman 1998, Werttenbroch 1998). Therefore, we expect that compared to utilitarian foods, the potential influence of package color on consumer’s perception of food healthiness should be less salience for hedonic foods since they have already been intuitively perceived as unhealthy.

To highlight the nutritional content on packages, food producers often present labels on the package to make general nutrition claims. As concise as these labels are, they are sometimes ambiguous. For example, “light” is used to imply the healthiness in comparison with “regular” foods. When exposed to ambiguous information, consumers tend to search for additional information to confirm their expectation and reduce ambiguity (Hoch and Ha 1986), and the package color can serve as “additional information”. According to the Selective Accessibility Model (SAM) (Mussweiler 2003), contextual information (e.g., package color) often provides an easily accessible standard and interpretation frame when there is ambiguity. We expect that if the verbal cue is ambiguous, the package color will have an assimilation effect on consumers’ perception of food healthiness and purchase intention. Specifically, we postulate that label effect is stronger in the condition that package color is congruent with label than that of incongruent conditions. The term “congruence” in this research refers to whether the effects of label and package color on the healthiness expectation or purchase intention are consistent with each other.

Without the presence of ambiguous labels, Study1 (N=34) aimed to explore the effect of package color on healthiness perception and purchase intention. While looking at pictures of six food/beverage packages (hedonic: potato chips, ice-cream, and ice-tea; utilitarian: cereal, yogurt, and milk), participants were asked to rate their perception of food healthiness (1-item) and purchase intention (3-item; α=0.91) to the presented products. For each product, two packages were designed with solid red (Hue: 0º, Saturation: 100%, Brightness: 100%) or blue (Hue: 240º, Saturation: 100%, Brightness: 100%) covering 90% of package surface.

Study2 (N=80) applied a similar protocol to test the color effect in a condition that ambiguous labels were presented hinting the nutrition value of products (color-label assimilation effect). For each of the products (utilitarian: yogurt and milk; hedonic: potato chips and ice-cream), there were four designs using red or blue (as Study1) as the package color and “regular” or “light” as the nutrition label.

The participant’s perception of product healthiness and purchase intention was analyzed in mixed models for repeated measurement with within-subject factors of package color (red vs. blue), product category (hedonic vs. utilitarian), nutrition label (light vs. regular in Study2), and their interactions.

Results from the analyses on healthiness perception in both studies suggested that products in red packages were perceived to be less healthy than in blue (ps<0.001). The interaction of color by product category (ps<0.03) further showed that, such an effect was particularly significant for utilitarian (ps<0.001) but not for hedonic products. The color-label assimilation effect in Study2 suggested that the difference between regular- and light-labeled products was observed in congruent condition (blue-light vs. red-regular: p<0.001), but not in incongruent condition (blue-regular vs. red-light; p>0.9).

In terms of purchase intention, participants in both studies reported higher intention to purchase blue- than red-packaged products (ps<0.04). Such an effect was particularly salient for utilitarian products (study2: p=0.02), but not for hedonic products. Study2 further revealed that label effect was significant (p=0.01) only if the color and label information were congruent (assimilation effect).

Further analyses revealed the color effect on purchase intention was mediated by healthiness perception. That is, the color effect on purchase intention was not significant after controlling the healthiness perception, while healthiness perception directly predicted purchase intention (p<0.001).

This is the first experiment of its kind designed to investigate the influence of package color on consumers’ perception of food healthiness and purchase intention. In line with a general color research in marketing (Labrecque and Milne 2012), the significant effect of color reported in both studies points out the potential that using package color as marketing cues in agri-food sector, accompanied with consistent verbal cues, can not only differentiate food products but also influence consumer’s perception and attitude toward such products. Future research may further investigate additional determinants, such as dieting habits and other individual differences, in order to better identify the enhancers of or detractors from the current paradigm.

REFERENCES


