



# Can health “halos” extend to food packaging? An investigation into food healthfulness perceptions and serving sizes on consumption decisions



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## ABSTRACT

The purpose of this research is to examine how perceived food healthfulness and package partitioning interact to impact intended and actual consumption. Across three studies, findings indicate that both intended consumption and actual consumption of the perceptually healthier food items increase when packaging is not partitioned. Further, partitioning does not change the intended or actual consumption of foods perceived as less healthy. Accordingly, perceptually healthy foods tend to be consumed more when servings are not partitioned, suggesting a positive health halo leading to a “healthy = eat more” consumption pattern. The role of affect regulation theory and, more specifically, guilt, in this process is examined. These findings have implications for marketers, food manufacturers, and public policymakers interested in reducing obesity.

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## 1. Introduction

“Eat your vegetables” is a common saying taught to children at most dinner tables that continues to be reinforced throughout an individual's lifetime. Over time, the notion of eating more healthful foods has become positively associated with making good health decisions. This has created the idea that eating healthier foods is a healthy thing to do and can influence consumer eating decisions (Mukhopadhyay & Johar, 2005; Raghunathan, Naylor, & Hoyer, 2006; Wansink & Chandon, 2006). This is true if healthy food replaces unhealthy food in one's diet, but is not necessarily true if one is overeating any type of food, or if the food is incorrectly perceived as healthy. For example, granola snacks are generally perceived as being healthier snack alternatives (despite typically being relatively high in calories and fat content), and thus consumers may feel that they are making a good choice when eating them and may not be too worried about how much they eat. Clearly, overconsumption of almost any snack (perceived as healthy or unhealthy) is not, in fact, promoting healthy eating decisions; rather, the promotion of moderate eating as an alternative message is more sustainable and healthier. Such lay theories regarding food healthfulness perceptions and suggested intake are often internalized due to

conventional eating situations where the “healthy = eat more” intuition is often promoted. Interestingly, however, the question regarding how much is too much when determining appropriate intake of perceptually healthier options is not often raised. This is of particular concern given the high percentage of overweight and obese individuals in industrialized nations (OECD, 2014). Given the concerns over obesity, much attention has been placed on how much food consumers eat. This has put a focus on food portion and serving size issues to help reduce overconsumption (Chandon & Wansink, 2007a; Haws & Winterich, 2013; Zlatevska, Dubelaar, & Holden, 2014).

Consumer research regarding various serving size packaging options for a variety of food products available in vending machines (Brown, Flint, & Fuqua, 2014; Kocken, van Kesteren, Buijs, Snel, & Dusseldorp, 2015; Kocken et al., 2012) is vast due to increased consumer interest in convenient ways to manage weight and to take food on the go. To date, much attention has been given to the role of serving size and portion/package size and, even more so, to the areas of affect/emotions and unhealthy eating. Much of the literature focuses on the adverse health consequences derived from consuming larger portions of food (Cheema & Soman, 2008; Mohr, Lichtenstein, & Janiszewski, 2012; Zlatevska et al., 2014). Sparse research examines how consumers judge and make consumption decisions about snacks perceived as healthier and specifically the role that partitioning of snack packages plays in influencing consumption intentions and decisions. Further, limited research investigates how package partitioning (i.e., smaller

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packaging with fewer servings or single-serving-size packaging) interacts with healthfulness perceptions of food to impact eating decisions and intentions.

In this research, health halo research and partitioning effects (Cheema & Soman, 2008) are used to examine how food healthfulness perceptions and package partitioning interact to impact food consumption and intentions. Further, this research draws from affect regulation theory (Andrade, 2005; Gross, Richards, & John, 2006) to examine the role of guilt in consumption decisions. In Study 1, the influence of partitioning a product into single-serving packages versus one non-partitioned package that contains multiple servings on consumers' intended consumption decisions is examined to show how partitioned products, in comparison to non-partitioned products, help regulate consumption of both perceptually healthy and unhealthy products. Next, Study 2 examines whether the same pattern holds across different levels of product partitioning. Lastly, Study 3 demonstrates the same effect from the first two studies, but in a real consumption context. The last study also examines the mediating role of consumption guilt on consumption decisions. This research contributes to the food partitioning literature, with implications provided for food marketers interested in packaging design as well as consumers and social policymakers interested in managing consumer health and welfare issues.

## 2. Theoretical background

### 2.1. Partitioning effects: consumer reliance on simple heuristics of portion/serving sizes

Given the enormity of snack food options and serving size availability at points-of-purchase, consumers often rely on simple heuristics to make quick, snap judgments regarding consumption decisions (Bublitz et al., 2013; Cheema & Soman, 2008; Gigerenzer & Gaissmaier, 2011; Hausman, 2012; Shah & Oppenheimer, 2008). Portion and suggested serving sizes can play an important heuristic role in food consumption decisions. For example, Cheema and Soman (2008) demonstrate how the simple heuristic of partitioning modifies behavioral decisions applied across various consumption contexts. In particular, their research shows how unit size packaging of unhealthy foods can help consumers eat fewer unhealthy foods. Specifically, partitioning smaller units of chocolates (versus whole chocolate bars) can attenuate (facilitate) consumption of unhealthy snacks. Extending the work within the partitioning effect space, additional research examines boundary conditions regarding partition effects (Holden & Zlatevska, 2015; Scott, Nowlis, Mandel, & Morales, 2008; Zlatevska et al., 2014), and this stream of research continues to provide robust evidence of consumer reliance on food packaging size to help regulate consumption of unhealthy foods.

### 2.2. Health halos, health perceptions, and simple heuristic processes

The notion of consumer reliance on simple heuristics (e.g., predetermined packaging size) to make consumption decisions extends well beyond serving sizes. Rather, heuristics applied in food decision making also involves making quick evaluations about the healthfulness of the food (Burton, Cook, Howlett, & Newman, 2015; Burton, Tangari, Howlett, & Turri, 2014) by taking into account a variety of cues about the product. Perceptions of product healthfulness are extremely important to consumption decisions and attitudes (Chernev & Gal, 2010; Liu, Haws, Lambertson, Campbell, & Fitzsimons, 2015; Rozin, Ashmore, & Markwith, 1996).

A health halo takes place when consumers use a limited number of attributes from a food item to determine the overall healthfulness of that food item. The research on health halos indicates that these perceptions from the health halos can influence consumption decisions (Chandon & Wansink, 2007b; Wansink & Chandon, 2006). Although

health perceptions play an important role in consumer decision making, they also lead to unintended consequences. For example, health perceptions can lead consumers to estimate a lower (more favorable) calorie level in foods perceived as healthy versus unhealthy, even when the food perceived as healthy may in reality have a similar calorie profile to the unhealthy foods (Chandon & Wansink, 2007b; Tangari, Burton, Howlett, Cho, & Thyroff, 2010). Health perceptions can also lead consumers to eat more of a product that has a nutritional label (low-fat) than the same product without the nutritional label (Wansink & Chandon, 2006). Simple heuristics, thereby, provide an automatic "rule of thumb" for individuals to evaluate the product and to determine how much to consume when other consumption cues, such as serving size information, are not explicit (Wansink & Chandon, 2006).

### 2.3. The role of negative affect on food intake

A considerable body of research shows that affect and emotions play a significant role in food consumption decisions. According to affect regulation theory (Andrade, 2005), individuals attempt to achieve desired affective states when feeling negative and try to protect/sustain these positive states once attained, particularly when pursuing hedonic goals. As such, negative affect-related emotions are the most often regulated, with individuals seeking to minimize negative affective states (Andrade, 2005; Gross et al., 2006). Cialdini, Darby, and Vincent (1973) also maintain, through the negative relief model, that one can mitigate negative emotional states by subjecting oneself to positive reinforcing states. The appeal of indulgent foods increases in response to negative emotions. Consequently, hedonic consumption goals naturally prompt affective reevaluations and self-control conflict as the desire to fulfill one's indulgent appetite with unhealthy food competes with the desire to eat healthy (Geyskens, Dewitte, Pandelaere, & Warlop, 2008).

The literature regarding food and emotions demonstrates that negative emotions may lead to overconsumption (that is, eating more than what one needs to maintain one's current status in terms of weight or other physical responses) of unhealthy and indulgent foods (Kemp, Bui, & Chapa, 2012; Kemp & Grier, 2013; Winterich & Haws, 2011), with a general consensus that overindulgence can be attributed to lapses between overweighing short-term versus long-term health rewards. Central to this literature is the notion that shortsighted eating decisions are less ideal than long-term health goals (Hoch & Loewenstein, 1991). As such, overeating of unhealthy and indulgent foods contributes to negative affect, such as regret and guilt. In addition, affective states, such as guilt, influence consumption and choice behavior. Specifically, Mohr et al. (2012) demonstrate that feelings of guilt can be influenced based upon changes to the health framing of nutrition information, for example, smaller serving size with few calories per serving reduces anticipated guilt. Similarly, guilt associated with food consumption tends to be dominated by emotions, particularly for hedonic and indulgent foods (Giner-Sorolla, 2001; Rozin, Fischler, Imada, Sarubin, & Wrzesniewski, 1999; Strahilevitz & Myers, 1998). Further, perceiving food as healthy increases consumption due to lower feelings of guilt associated with healthy food consumption (Wansink & Chandon, 2006) and reduced monitoring of the consumption of healthier foods (Redden & Haws, 2013). Both reduced guilt and reduced monitoring help to increase consumption (Okada, 2005; Wansink & Chandon, 2006). Thus, understanding how negative affect, such as guilt, influences consumption decisions is of particular importance given that guilt responses have significant effects on food consumption (Giner-Sorolla, 2001).

Per the literature related to product partitioning and health perceptions, consumers are predicted to be more likely to eat more of a product that is perceived as healthy, in part due to lower levels of guilt associated with the healthy product. This effect will be moderated by how highly partitioned the product packaging is. Having highly partitioned product packaging (i.e., single-serving packages) will provide a clear cue of how much to eat; thus, the single-serving product packaging

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