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## Is plain food packaging plain wrong? Plain packaging increases unhealthy snack intake among males



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#### ABSTRACT

Public policy makers have recently recommended deactivating the marketing functions of unhealthy food packaging by enforcing the use of plain food packaging. It is noteworthy, however, that no study to date examined the impact of plain packaging on consumers' perceptions and actual consumption of unhealthy food items. Three studies reported here addressed the latter questions. Study 1 shows that the plain packaging negatively impacts product and brand attitudes as well as intention to consume an unhealthy snack when consumers only evaluate the packaging. Study 2, however, reveals that when they taste the product, the plain packaging increases food consumption among males, while there is no difference for females. As a further insight, Study 2 shows that the plain packaging does not influence consumers' product and brand perceptions anymore following actual food consumption. Study 3 fully replicates Study 2 findings and additionally shows that the plain packaging and the low fat label packaging increase unhealthy snack intake to a similar extent in males and females, respectively.

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#### 1. Introduction

Food packaging is a critical component of marketing, which influences consumers' attention, expectations and purchase decisions about brands and products (e.g., Ares & Deliza, 2010; Becker, van Rompay, Schifferstein, & Galetzka, 2011; Labbe, Pineau, & Martin, 2013; Ng, Chaya, & Hort, 2013; Underwood & Klein, 2002). In the context of the obesity epidemic, public policy makers have recently recommended deactivating the marketing functions of packaging for unhealthy food by enforcing the use of plain packaging. Of importance, however, evidence is currently lacking as to whether plain packaging effectively reduces intake for unhealthy food items. The present research set out to address the latter question. In this article, we briefly discuss the literature on packaging as well as on plain packaging in anti-smoking prevention. We then report and discuss three studies that investigated the

effects of plain packaging on consumers' perception and actual consumption of an unhealthy snack.

Over the past decades, food product packaging has become one of the most essential marketing tools. Besides its primary functions (protection of the content, transportation, storage and handling), packaging shapes consumer's perceptions and expectations about food products and provides food companies the last opportunity to persuade the consumers that their product should be purchased (Ares & Deliza, 2010). In stores, packaging shapes consumers' expectations about how a product would taste and decisions about whether it should be bought (Carrillo, Varela, & Fiszman, 2012). The influence of packaging is particularly powerful when purchase decisions are made impulsively or with low involvement (Liao, Corsi, Chrysochou, & Lockshin, 2015; Rebollar, Lidon, Martin, & Fernandez, 2012; Underwood, 2003).

At the time of buying, vision is the most operating sense (Labbe et al., 2013). In a snap, packaging must attract visual attention and convince potential buyers that the product is the best option (Rebollar et al., 2012). As a result, marketing research has devoted much attention to the role of visual packaging in guiding consumers' expectations and choices. Among the various dimensions of product packaging, color, shape and graphical elements received most attention from practitioners and researchers (e.g., Block, 1995; Celhay, Boysselle, & Cohen, 2015; Marshall, Stuart, & Bell,

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 $<sup>^{1}\</sup> http://www.bloomberg.com/news/articles/2015-01-23/junk-food-and-booze-could-follow-tobacco-in-plain-packaging-push.$ 

2006; Mueller & Szolnoki, 2010; Ng et al., 2013; Orth & Malkewitz, 2008; Raghubir & Greenleaf, 2006; Rebollar et al., 2012; Sester, Dacremont, Deroy, & Valentin, 2013).

To illustrate, Underwood, Klein, and Burke (2001) highlighted that the presence of images in the front of a packaging captures the attention of potential buyers. In the same sense, the perception of naturalness is affected by the presence of pictures representing a food item (Labbe et al., 2013). Packaging cues also enable consumers to make inferences about food and drinks taste (Becker et al., 2011; Huber & McCann, 1982; Pinson, 1986; Tuorila, Meiselman, Cardello, & Lesher, 1998) and texture (Ares & Deliza, 2010). For instance, Deliza and MacFie (2001) showed that the color of the packaging (white vs. orange) affects consumers' expectations of juice sweetness: compared to white, orange packaging led consumers to expect a higher level of juice sweetness which also affected taste evaluations. Few years later, Deliza, MacFie, and Hedderley (2005) indicted that the background color (orange vs. white) of a passion fruit juice pack also impacted consumers' evaluations of the juice: compared to the orange, when the juice is presented in the white packaging, consumers believed that it contained less sugar (sweetness), it was purer, fresher and more natural.

Research also shows that ill-conceived food packaging can have negative effects. Consumers exposed to a black package for a milk dessert associated it with the word "disgusting" (Ares & Deliza, 2010). In a recent article by Abrams, Evans, and Duff (2015), the front-of-package visual impacted parents' food product perceptions: the more colors and cartoon-like pictures on the front package, the less healthy the product was perceived to be. Recently, Elliott and Brierley (2012) reported a qualitative research that emphasized that colors and brand elements influence children's perceptions about the healthiness of cereals. Finally, there is evidence that children prefer food items wrapped in branded packaging over the same snacks wrapped in unmarked packaging (Robinson, Borzekowski, Matheson, & Kraemer, 2007).

The above literature indicates that packaging influences perceptions and expectations about food items among both adults and children. Therefore, plain packaging is likely to influence the way consumers appraise food products. Research on anti-smoking prevention additionally suggests that the use of a plain packaging (i.e., a packaging devoid of brand slogan, logo or color) decreases the appreciation of cigarettes and cravings (Gallopel-Morvan, Béguinot, Eker, Martinet, & Hammond, 2011; Gallopel-Morvan, Orvain, Waelli, & Rey Pino, 2012; Gallopel-Morvan et al., 2012; Hastings, Gallopel-Morvan, & Rey, 2008; Hogarth, Maynard, & Munafò, 2015). In a declarative survey, a representative sample of 836 French adults compared a plain pack and a traditional cigarette packet. The plain pack was considered by the respondents as more "dull, trite and ugly" than the traditional package, it did not attract respondents' attention and the majority of the respondents reported being unwilling to buy the cigarettes in the plain pack (Gallopel-Morvan et al., 2011).

In December 2012, Australia adopted plain packaging as an anti-smoking public policy strategy. The initial prevention outcomes of cigarettes plain packaging in Australia look promising (Zacher et al., 2014). Considering that worldwide obesity has more than doubled since 1980 and that, in 2014, more than 1.9 billion adults were overweight,<sup>2</sup> public policy makers in Australia and in the United Kingdom have recently recommended to adopt a similar policy for the packaging of unhealthy food items.<sup>3</sup> In 2012, Mars Inc.

(the candy manufacturer) wrote a letter to the U.K. Department of Health to express the dramatic consequences that the tobacco plain packaging would have for food products. Recently, the U.K.-based Consumer Packaging Manufacturers Alliance, which represents brand owners and packaging companies, has expressed the same concerns regarding plain packaging for the food industry. It is currently unclear, however, whether plain food packaging effects survive actual food consumption in informed consumers and, more critically, whether plain food packaging reduces food intake.

Although a number of studies have questioned the responsibility of food marketing in the progression of obesity (for a review, see Chandon & Wansink, 2011), only a few examined the visual effects of packaging on food consumption over and above food perception (Deng & Srinivasan, 2013; Folkes & Matta, 2004; Madzharov & Block, 2010). And no published study to date specifically examined the impact of plain food packaging on food intake.

The present research aimed at filling this gap. Study 1 provides preliminary evidence on how plain food packaging influences consumers' perceptions about an unhealthy food item. Study 2 and 3 examine the impact of plain packaging on actual food consumption and whether effects of food packaging on food perceptions survive actual food consumption. The three studies were conducted with different groups of participants. Moreover, in all three studies, the effect of gender was also examined.

### 2. Study 1: prior to consumption, food plain packaging results in less positive attitudes and decreases purchase intention

Study 1 was designed to examine the influence of a plain packaging on the evaluation and intention to consume an unhealthy food item. To do so, a laboratory experiment with a one-factor (original packaging vs. plain packaging) between-subjects design was conducted. The product used for the test was peanuts covered with milk chocolate (Peanut M&M's) presented in small size packages (45 g, corresponding to the product sold in the out-of-house catering area).

### 2.1. Methodology

### 2.1.1. Stimuli

In order to have a prototype in the two experimental conditions and avoid the potential effects due to the quality of the *stimulus*, we manufactured the two types of packaging (original and plain packaging). Plastic zip-lock bags (8  $\times$  12.5 cm, conventional size of the Peanut M&M's packaging containing 45 g) were covered on both sides with printed labels. For the original packaging, we color photocopied a classic Peanut M&M's packaging and printed the front and back onto the tags. We erased information about the number of calories contained in the front of the original packaging to keep the two prototypes comparable and so avoid confounds. For the plain packaging, white labels on which we had inscribed a brief product description in Times New Roman font (size 12, color black) « M&M's - 45 g of milk chocolate covered peanuts » were used. Finally, the two prototypes were filled with 45 g of Peanut M&M's.

### 2.1.2. Participants and procedure

One hundred and sixty-six business school students participated in this study ( $M_{age}$  = 20.34 years old; 66.5% females;  $M_{BMI}$  = 21.05) in exchange for course credit. Upon their arrival at the laboratory, participants were randomly assigned to one of the two experimental conditions and placed in front of computers, isolated from the other participants, to execute a packaging test. They received the original packaging or the plain packaging as well as

<sup>&</sup>lt;sup>2</sup> The report is available at http://www.who.int/mediacentre/factsheets/fs311/en/.

<sup>&</sup>lt;sup>3</sup> The reader interested with this point could read those internet articles that report this point: https://www.newscientist.com/article/mg22530120-200-if-tobacco-gets-plain-packets-will-junk-food-be-next/. http://www.bloomberg.com/news/articles/2015-01-23/junk-food-and-booze-could-follow-tobacco-in-plain-packaging-push. http://valdamarkdirect.com/plain-packaging-in-australia/.

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