Virtue, Vice, Or Both? the Impact of Context-Induced Guilt on Choice and Consumption of Mixed Foods

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ABSTRACT
Two studies using real choice settings demonstrate context influence on the choice and consumption of mixed foods (combining hedonic and utilitarian attributes). A hedonic context leads to the choice and reduced consumption of mixed foods for guilt-reducing reasons. A utilitarian context induces less guilt, and leads individuals to choose and consume more of the mixed foods. Priming guilt through nutritional information reverses these effects.

INTRODUCTION
In their daily lives, consumers often confront decisions between hedonic and utilitarian options: for dessert, should I have a delicious chocolate cake or a healthy fruit salad? This kind of dilemma offers a typical example of the hedonic–utilitarian conflict widely studied in consumer behavior literature (for a review see Khan et al. 2005). Various researchers work to understand the consumption of hedonic and utilitarian products and the potential consequences of choosing one over the other (Khan et al. 2005). Yet few consumers choose simply between pure hedonic and pure utilitarian products, especially in the food industry. Rather, expanded choice sets in modern markets mean consumers often consider mixed products, such as ice cream, a pure hedonic product that offers low fat or extra calcium, which constitutes utilitarian attributes.

In two studies, we address consumers’ choice and consumption of mixed foods according to the choice-set composition. Previous research notes the emotional consequences of deciding between a hedonic and a utilitarian option, in that choosing one or the other prompts mixed emotions (Chitturi et al. 2007). We therefore investigate the role of emotional activation in the choice of mixed foods. Wansink and Chandon (2006) show that “low-fat” nutrition labels reduce the guilt associated with the consumption of hedonic foods; emotion activation thus may be a determinant of choice and consumption. Mixed products may provide a balanced alternative that consumers prefer when they want to regulate their feelings, such as anticipated guilt (study 1).

We also gain some insight in the psychological reasons for the choice of mixed products in different contexts. We propose that presenting mixed food next to a pure hedonic option activates guilt, so the mixed food represents the appealing, guilt-regulating alternative. In contrast, a mixed product that appears beside a utilitarian option induces no guilt, so the choice of a mixed option should reflect pursuit of a hedonic goal. That is, the choice of the mixed food differs according to the context and reflects either the pursuit of pleasure or an attempt to regulate guilt (study 1).

Once they have chosen a mixed product, consumers must decide how much to consume. If the choice of the mixed product results from their trade-off between a hedonic and a mixed option, due to guilt activation, we suggest that the consumption will be reduced in order to address a high-priority goal. However, when the choice of the mixed product results from the trade-off with a pure utilitarian product, the context does not activate the guilt, the motivation is mainly hedonic, and the consumer feels free to eat a larger amount of the mixed option (study 1).

Finally, recent research suggests that low-fat labels can reduce anticipated guilt because they cause calorie misestimations (Wansink and Chandon 2006); consumers should be more likely to consume mixed foods because they perceive them as lower in calories and fat. The presentation of nutrition information would give a more realistic idea of the guilt associated with each option in the choice set and therefore may attenuate the effect of the presentation context on the consumption of mixed products (study 2).

CONCEPTUAL BACKGROUND
Emotional Reactions to Hedonic and Utilitarian Products
According to Holbrook and Hirschman (1982), people consume products for two main reasons: (1) utilitarian reasons related to the function of the product or (2) hedonic reasons to achieve an affective experience. Hedonic consumption thus is driven by pleasure, emotions, and a sensation-seeking motivation, whereas utilitarian consumption derives from a desire to satisfy a basic need or accomplish a functional task through the practical, and instrumental characteristics of the product (Holbrook and Hirschman 1982). Although the hedonic option generates positive emotions, such as excitement and cheerfulness (Chitturi et al. 2007), its choice is harder to justify because it may have negative consequences in the long run (Hoch and Loewenstein 1991). Therefore, it also can engender negative emotions, such as guilt and anxiety (Giner-Sorolla 2001; Ramanathan and Williams 2007). That is, the consumption of a hedonic product raises mixed emotions: Consumers feel good because they achieve sensory pleasure, but they feel bad because they have succumbed to temptation (Macht and Dettmer 2006; Ramanathan and Williams 2007).

Traditionally, research on consumer decision-making (such as Shiv and Fedorikhin 1999) relies only two dimensions: affect (related of sensorial pleasure) versus cognition (related to the benefits of the products for consumers’ health). However, research mentioned above suggests that the dimension related to affect could be formed by two sub-dimensions: positive reflecting the pleasure obtained by the consumption and a negative reflecting emotions such as guilt. Recent research such Wansink and Chandon (2006) and an exploratory study conducted by the authors suggests that a guilt-reducing motivation could determine choice and consumption of mixed products.

Choice Context Effects and Activation of Emotions
Extant research indicates that the choice context can modify consumers’ preferences and decision process (Bettman, Luce, and Payne 2008; Hsee et al. 1999). Different elements in the choice environment might activate different constructs in consumer memory and influence preferences and behaviors, as well as four specific systems: perceptual (e.g., stereotypes, traits), evaluative (i.e., attitudes), motivation (i.e., goals), and emotional (Bargh and Morsella 2009). Most research centers on the role of activated goals or traits to explain consumer choice and consumption (for instance: Fishbach et al. 2003; Sela, Berger, and Liu 2009; Wilcox et al. 2009). However, consistent with Bargh and Morsella’s (2009) proposal, we suggest that the context activates certain emotions that determine the decision motivation. Specifically, we posit that certain contexts activate more guilt than do others and therefore lead to the choice of less hedonic products, in a sort of balance-seeking strategy (Zemack-Rugar et al. 2007).

When the mixed option appears together with a hedonic option (hedonic context), due to its evaluability the hedonic attribute is highlighted (Hsee et al. 1999). As mentioned earlier, hedonic attributes are not only associated to positive feelings such as plea-
sure but also to negative emotions such as guilt. Consequently, we propose that the hedonic choice-set activates guilt, and the mixed option provides a guilt-regulating mechanism.

Additionally, research on guilt shows that the presence of this emotion makes individuals prioritize utilitarian, long-term motivations (Baumeister and Exline 1999; Baumeister, Stillwell, and Heatherton 1995) and neglect short term motivations such as pleasure-seeking. Taking this into account, we suggest that in the hedonic context, consumers choose the mixed product to avoid feelings of guilt and the choice is driven by a utilitarian motivation. That is,

**H1:** When the mixed product appears together with a hedonic product, the choice set activates guilt and leads to the choice of the mixed option (rather than the hedonic product) for utilitarian reasons in comparison with the utilitarian context.

In contrast, when the mixed option appears with a utilitarian product (utilitarian context), the utilitarian attribute is highlighted, and the context does not activate the same amount of guilt. As a consequence, the choice of the mixed option is not driven by this emotion. The utilitarian context has, in fact, a liberating effect on individuals, encouraging them to indulge due to a health halo effect (Chandon and Wansink 2007a). The consumers will therefore choose the mixed option to satisfy a pleasure-seeking motivation. That is,

**H2:** When the mixed product appears together with a utilitarian product, the choice set does not activate guilt and leads to the choice of the mixed option (rather than the utilitarian product) for hedonic reasons in comparison with the hedonic context.

Wansink and Chandon (2006) also show that low-fat nutrition labels increase food consumption, because consumers increase their perceptions of the appropriate serving size. What happens to perceptions of serving size for mixed products presented together with pure hedonic versus pure utilitarian products? We believe it depends on the motivation behind the mixed product choice. Research on sequential choices indicates that when making similar decisions sequentially in a short period of time, people tend to commit to their first choice through a reinforcement mechanism (Dhar, Huber, and Khan 2007; Huber, Goldsmith, and Mogilner 2008). Therefore, if consumers choose a mixed product in a low-guilt context for hedonic reasons, they should take more of the mixed product to fulfill their pleasure motivation. However, if their choice is motivated by guilt-avoidance, they should tend to serve themselves a smaller portion to continue regulating or even eliminate their guilt. That is,

**H3:** In a hedonic context, consumers serve themselves a smaller amount of the mixed product (compared to the utilitarian context).

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The Moderating Effect of Nutrition Information

Previous research demonstrates that providing nutritional information influences perceptions, attitudes, intentions and consumption (Bui et al. 2008; Burton et al. 2006; Garg, Wansink, and Inman 2007; Howlett et al. 2009; Kozup et al. 2003), because most consumers lack of expertise in estimating the caloric content of foods. They generally underestimate caloric and fat content, especially for large meals (Chandon and Wansink 2007b), which might prompt a mistaken guilt-reducing perception, especially for mixed foods that use health-related claims and induce perceptions of lower caloric and fat content. If so, presenting the nutrition information for all options in the choice set should give consumers a more realistic perception. For mixed foods, the realistic perception may prime guilt especially in the utilitarian context were they are the more hedonic option. The guilt activation should alter the chosen product and amounts.

Specifically, we propose that in the hedonic context guilt is already activated by the characteristics of the choice set and presenting nutrition information only reinforces the presence of this emotion. However, in the utilitarian context guilt is previously absent, therefore, presenting nutrition information highlights guilt and has a strong impact on the amount consumed of the mixed option. As a result, consumers should moderate their consumption of mixed foods in the utilitarian condition with nutrition information to regulate their activated guilt. That is,

**H5:** In the presence of a guilt prime (nutrition information), when the mixed product appears together with a utilitarian product, consumers serve themselves less of the mixed product to reduce their feelings of guilt (in comparison to the scenario without nutritional information).

In the hedonic context, the presentation of nutrition information for both options should reinforce the guilt-reducing characteristics of the mixed food, because its caloric content is less than that of a hedonic food. Therefore, nutritional information in the hedonic context should lead to greater consumption of the mixed food, because the simple fact of choosing the mixed option may already reduce their activated guilt. Therefore,

**H6:** In the presence of a guilt prime (nutrition information), when the mixed product appears together with a hedonic product, consumers serve themselves more of the mixed product (in comparison to the scenario without nutritional information).

We use two experiments to test these hypotheses. First, we explore the impact of the choice context on the choice and consumption of mixed food (study 1). Then, we consider whether the provision of nutritional information might alter the consumption of the mixed option (study 2).

**STUDY 1**

For study 1, our objective is to test the effects of the presentation context on the evaluation, choice, and consumption of mixed foods. We have predicted that when the mixed food appears beside a hedonic product, the choice set activates guilt, prompts the choice of the mixed option for utilitarian reasons (H1), and leads to the consumption of a smaller amount of the mixed product to continue to regulate guilt (H3). We also argue that when the mixed product is in the same choice set as a utilitarian one, no guilt gets activated, which leads to the choice of the mixed option for hedonic reasons (H2) and the consumption of a large amount of the mixed product to obtain pleasure (H4). Study 1 tests these hypotheses.
METHOD
Study 1 uses a one-factor, two-level (context of presentation: utilitarian option versus hedonic option) between-subjects design, and the 138 undergraduate student participants were randomly assigned to a condition. When they arrived for the study, the participants received a consent form and a participant number and then entered a second room, where they would receive a gift for their participation. In the second room, a research assistant explained that the participants could choose between two snacks. In the utilitarian context, the choice included “fine slices of oven-baked apple” (pure utilitarian product) and “light cocoa cookies enriched with cereal” (mixed product); in the hedonic context, they chose between “shortbread filled with melting chocolate” (pure hedonic product) and the same mixed product. The snacks in large plastic bowls appeared in a counterbalanced order, and participants used a scoop to serve themselves as much as they wanted of the chosen snack in a small plastic bag. The research assistant then identified the bag with the participant’s number and explained that the next stage of the study would take place in the experimental lab, which people could not enter with food. Therefore, they would receive their snack at the end of the experiment. In the lab, participants first completed a lexical decision task (i.e., to measure the accessibility of concepts related to guilt, pleasure, and health), then a questionnaire with measures of their choice, motivations, evaluations of both the snack options, and participant’s profile. While participants were completing this part of the study, a research assistant unobtrusively weighted the plastic bags content to calculate the caloric content of the amount of snack served. Finally, at the end of the experimental session, they received their snack bag, along with a debriefing of the study objectives, and were dismissed.

STIMULI
Each participant considered two different snacks displayed in large plastic bowls and identified by a description (both descriptions contain similar numbers of words). The snacks represented real alternatives, which should increase the vividness of these options and intensify the affect experienced by the respondents (Shiv and Fedorikhin 1999). Although the pure utilitarian option (fine slices of oven-baked apple) was inspired by Shiv and Fedorikhin’s (1999) research, French participants may consider a fresh apple a hedonic product (because it is refreshing), so we decided to use dried apple slices instead. The shortbread filled with melting chocolate provides the pure hedonic option because it contains typically hedonic ingredients (e.g., chocolate). Finally, the mixed option reflects our conceptualization of a hedonic product (cookie) to which we added utilitarian attributes (light and rich in cereals). A pilot study confirms these choices; the data are available from the authors on request. Because one of our dependent measures is the amount that each participant served him- or herself, the chocolate shortbread, cookies, and apple slices are better options than a whole apple or entire chocolate cake. Finally, the size and shape of each unit of the three options is similar (approximately 10 grams per unit), so these characteristics should not influence the participants’ decisions.

MEASURES
Each respondent first responded to the following prompt: “A few moments ago you made a choice from two options, fine slices of oven-baked apple (shortbread filled with melting chocolate) and the light cocoa cookies enriched with cereals. Please indicate below the option you chose.” We confirmed these responses with the choice of snacks registered by the research assistant and find that the choices match across all respondents.

After the choice, in order to measure guilt activation in each context, we asked the participants to complete a lexical decision task on the computer. They considered a series of letter strings and decided, as quickly as possible, whether each letter string was a word. Each word appeared individually in the center of the screen and flashed very briefly. They classified the target letter strings as either words or nonwords, using the D and K keys. Each response was followed by a 1-second pause and then the next trial. After 10 practice trials, which included an equal number of words and nonwords, participants started the main lexical decision task, in which they classified 32 words (4 guilt-related words, 4 pleasure-related words, 4 health-related words, 4 neutral words, and 16 nonwords), which appeared for 50 ms each, followed by a white screen until the participants hit one of the keys, and then the next word. Participants exposed to the hedonic context (versus utilitarian context) should more readily identify words related to guilt, which would confirm the emotion activation effect. Because the latency of incorrect responses would be difficult to interpret, we use only correct responses in our subsequent analyses (Fazio 1990). To minimize the influence of outliers, we first transform all individual reaction times using a natural log transformation, then exclude any that exceed three standard deviations from the mean (Fazio 1990).

In line with Shiv and Fedorikhin (1999), we then asked the participants to indicate the basis of his or her choice on five seven-point items: “My choice of snack was driven by ‘my thoughts (1)/my feelings (7),’ ‘my willpower (1)/my desire (7),’ ‘the rational side of me (1)/the emotional side of me (7),’ and ‘my head (1)/my heart (7).’” The Cronbach’s alpha for these items reach .89, and we therefore can average the responses to the five items to form a single index (i.e., Decision Basis). Each respondent also indicated, on seven-point scales, the extent to which hedonic, utilitarian, and guilt-reducing goals bore on their decision: “I was searching for pleasure,” “I was seeking gratification,” “I was trying to avoid guilt,” and “I was trying to make the best choice for my health.”

Next, the participants indicated their familiarity with the different snacks, whether they have consumed this kind of snack, and if they thought these products were innovative. Finally, they indicated their gender, age, weight and height, when they had their last meal, if they were hungry, their knowledge about nutrition, their dietary restrictions (Herman and Polivy 1980), and several other self-perception measures. These measures serve as covariates in the various analyses and only those impacting the results are mentioned below.

RESULTS
Guilt activation. Our hypotheses suggest that the hedonic context activates guilt and that this emotion leads to the choice of the mixed option for utilitarian reasons (H1). Conversely, in the utilitarian context, guilt is not activated and the choice of the mixed option (rather than the utilitarian product) for hedonic reasons (H2). The lexical decision task was used to verify the guilt activation. The results of this task show, as expected, that in the hedonic context, the words related to guilt are more accessible (smaller latency) than in the utilitarian context condition, in accordance with hypothesis

1 The data on the accessibility of pleasure related words and health related words were no statistical significant
3, we find no difference in the guilt-reducing motivation among participants who choose the mixed products versus the utilitarian product (guilt-avoidance motivation $= 3.23$; guilt avoidance motivation $= 2.94$; $F(1, 58)$ = .26, $p > .10$).

**Hedonic and Utilitarian Motivations for choice.** Consistent with previous research (Giner-Sorolla 2001; Zemack-Rugar et al. 2007), we find that the guilt activated by the choice of the context seems to induce a choice of the mixed product due to different motivations. In the hedonic context condition, guilt motivates participants to make a more reasoned choice; yet in the utilitarian context, they choose the mixed snack for affective reasons. Respondents who choose the mixed food rate their choice as reflecting affect in the utilitarian context (Decision Basis $= 4.70$) more than in the hedonic context (Decision Basis $= 3.73$; $F(1, 73) = 9.89, p < .05$).

In the same sense, participants choose the mixed food for their health in the hedonic context condition (health motivation $= 2.55$; health motivation $= 4.00$; $F(1, 73) = 10.98, p < .05$), but they make this choice for pleasure in the utilitarian context (pleasure motivation $= 4.19$; pleasure motivation $= 3.50$; $F(1, 73) = 5.73, p < .05$). These results are consistent with hypotheses 1 and 2, which suggest a more utilitarian motivation for the choice of the mixed product in the hedonic context and a more hedonic motivation guiding the choice of the mixed option in the utilitarian context.

Testing the mechanism leading to the choice of the mixed option. Additionally, to test the hypotheses 1 and 2, given the binary dependent variable, a logistic regression was conducted. The choice of the mixed option was coded as “1” and the choice of the others products was coded as “0”. Product terms were created by multiplying the independent variables (i.e., guilt and motivations).

We examined the effects of guilt and hedonic and utilitarian motivation on the choice of snack in each of the context (hedonic and utilitarian). The results indicate that the interaction term between guilt and health motivation was a significant predictor of choice of the mixed option in the hedonic context (B=0.87; Wald = 11.41, $p < .05$) and in the utilitarian context the hedonic motivation was a significant predictor of choice of the mixed option (B= 0.604; Wald = 5.409, $p < .05$). The utilitarian motivation was also significant but helped to predict the choice of utilitarian option (B= -0.435; Wald = 7.026, $p < .05$). These results of logistic regression allow us to confirm H1 and H2.

Amount served. Among participants who choose the mixed snack, those in the utilitarian context serve 54% more than those in the hedonic context (calories in amount served $= 317.46$; calories in amount served $= 206.16$; $F(1, 74) = 3.86, p < .05$). These results align with the prediction of the reinforcement between sequential choices (Huber et al. 2008) and therefore with hypotheses 3 and 4. When guilt is activated, the motivation for choosing the mixed food is utilitarian (in the hedonic context), people control themselves and take only a small amount. Yet, when guilt is absent, their motivation is hedonic (pleasure-seeking motivation in the utilitarian context) therefore they keep searching for pleasure and serve themselves more of the product.

**STUDY 2**

With study 2, we test hypotheses 5 and 6 regarding the role of a guilt prime (nutritional information) in moderating the effect of the context on the choice of mixed products and the amount served. The presentation of a guilt prime should influence the amount of mixed food they served by participants, such that in the utilitarian context (H5), consumers should serve themselves less to avoid guilt and the hedonic context (H6), consumers serve themselves more because guilt was reduced by the choice of the mixed option.

**METHOD**

Study 2 relies on a two-factor (context of presentation: with a utilitarian option versus with a hedonic option; guilt prime: nutritional information present versus absent) between-subjects design and the 121 undergraduate student participants were randomly assigned to a condition. The procedure, stimuli, and measures are similar to those in study 1, except that in the conditions with the guilt prime, we present nutritional information (caloric content, sugars, fat, and fiber) for both snack options available. In addition to the measures from study 1, we determine whether participants take into account the caloric content and the nutritional composition of the foods in their choice set, which serve as manipulation checks for the guilt prime. These items were averaged to form an index ($\alpha = .82$).

**RESULTS**

**Manipulation checks.** Participants exposed to nutritional information took into account the nutritional characteristics of the product when making their choice to a greater extent than did those who were not exposed to nutritional information ($M = 3.70$ versus $M = 3.00$; $F (1, 121) = 4.25; p < .05$). As we predicted, the presentation of nutrition information emphasizes the guilt associated with the choice in both contexts. Participants exposed to nutrition information declare more feelings of guilt after their choice ($M = 2.41$) than do those who received no exposure to nutritional information ($M = 2.00$; $F (1, 120) = 4.72, p < .05$) after controlling for dietary restrictions.

**Amount served.** In the hedonic context, the participants who see no nutritional information serve themselves fewer calories of mixed food ($M = 165.7$) than those in the utilitarian context ($M = 264.4$; $F(1, 31) = 6.76, p < .05$). These results are consistent with study 1. However, consumers exposed to nutritional information serve the same amount of the snack, independent of the presentation context (hedonic context = 202.7; utilitarian context = 186.2; $F(1, 33) = .19, p > .10$). Moreover, we find a decrease in the amount of mixed food served in the utilitarian condition when nutritional information appears (utilitarian context: no nutritional information = 264.4; nutritional information = 186.2; $F(1, 40) = 5.51, p < .05$). Consistent with our conceptualization, we find that presenting nutritional information attenuates the effect of the context of presentation on the amount of calories served among the participants who choose a mixed food. These results also indicate that the effect shown in study 1 is being driven by a guilt regulation. In the hedonic condition, however, the results are in expected direction (more consumption with nutritional information) but the difference is not statistically significant ($M_{without\ information} = 165.7$ versus $M_{with\ information} = 202.7$; $F(1, 24) = .80, p > .10$).

The presentation of nutritional information also influences the amount of mixed food served across conditions. Our analysis of the group of participants choosing the mixed food reveals that the effect observed in study 1 was reversed ($F(1, 40) = 4.63, p < .05$).

**GENERAL DISCUSSION**

This research examines consumers’ choice and consumption of mixed foods and the impact of the context (i.e., choice-set composition) and the presence of nutritional information on those choices. Prior research mainly studies consumers’ reactions and behavior with regard to pure hedonic or utilitarian options; we instead focus on mixed options (i.e., a hedonic product that contains one or more utilitarian attributes).

Based on previous research (Giner-Sorolla 2001; Wansink and Chandon 2006), we claim that the mixed product can serve as a guilt reducing option but only in some situations. We suggest that depending on the choice-set composition, guilt can be activated or
not and consequently determine the goal to be fulfilled (utilitarian related to health or hedonic related to pleasure, respectively). Additionally, as nutritional information can change the perception of a food product as well as intentions and consumption (Bui et al. 2008; Burton et al. 2006; Garg et al. 2007; Howlett et al. 2009; Kozup et al. 2003; Wansink and Chandon 2006), we suppose that the presence of nutritional information can activate guilt and reverse the choice-set composition effect described earlier. Through two studies (using real food choices) we demonstrate the role of guilt activation for the choice, and consumption of mixed products.

In study 1, we provide evidence that the context can activate guilt and this emotion influences both the motivation for the choice and the amount consumed of the mixed option. The hedonic context activates guilt and, in order to regulate this emotion, the choice of the mixed option is guided by a utilitarian motivation (i.e., health). Moreover, as a mean to reduce guilt, participants serve themselves a smaller amount of the mixed product. However, in a utilitarian context, we demonstrate that no guilt is activated and the choice and consumption of the mixed option are guided by hedonic motives. Additionally, our results show that these context effects are moderated by the presentation of nutritional information (study 2). More specifically, we found that, in the utilitarian context, consumers reduce their consumption of mixed option when nutritional information appears. This information primes guilt and leads to a reduction of the amount of mixed food consumed in the utilitarian context, reversing the overconsumption observed in study 1.

The results of these studies are consistent with the prediction that environmental stimuli (in that case, the choice-set composition) can activate the emotional system and motivational system that will consequently guide behavioral responses. In that sense, our results complement previous research (such as Fishbach et al. 2003; Wilcox et al. 2009) by putting forward the mediating role of emotion activation (i.e., guilt activation) when people are exposed to temptation. Specifically, the activation of guilt determines the goal to be pursued (hedonic or utilitarian). We empirically demonstrate an alternative path to the one suggested originally by Fishbach et al. (2003); the temptation can, in fact, activate guilt and this emotion will then determine the goal to be pursued. Our findings complement the research by Zemack-Rugar and colleagues (2007) by showing that the activated guilt influence the goals and these goals will then determine the consumers’ decisions. Additionally, in our studies we employed different ways to activate guilt that are closer to real-world situations and could actually have an influence in decision making in the everyday consumer environment. We show that choice-set composition and nutritional information can activate guilt; previous research used instead more artificial ways to prime it (e.g., participants were subliminally primed with guilty emotion adjectives).

IMPLICATIONS AND FUTURE RESEARCH

Our findings have important practical implications not only for brand managers but also for policy makers and consumers. For managers, our results indicate that positioning the mixed foods using a guilt-reducing argument can “speak to consumers.” In fact, as Fabrigar and Petty (1999) show, persuasive arguments have to match the bases of the attitude toward the product. So, the usual health claims may not be enough to catch consumers; the emotional dimension also needs to be addressed. Moreover, our results help food manufacturers and retail store managers regarding display decisions. Our conclusions indicate that the mixed products sales could be increased by placing them in store shelves surrounded by utilitarian products rather than hedonic product, despite the risks of overconsumption. Moreover, our conclusions have also important implications for policy makers and consumers assisting them in the context of obesity prevention. Previous research (Geyseks et al. 2007; Wansink and Chandon 2006) alerted to the fact that these mixed options could lead de facto to overconsumption. Our findings shed light on the circumstances in which consumers are more vulnerable to overconsumption indicating that placing mixed foods next to hedonic foods might be a good strategy for regulating their consumption. Likewise, our studies show that nutritional information may help consumers control their consumption of this kind of product when it appears in a utilitarian context.

Finally, this research suggests several further questions that additional research could address. First, we investigate the role of guilt activation in the context of choice related to mixed food products. As recent research shows (Keinan, Kivetz, and Netzer 2009), it also would be interesting to test and replicate these results with other mixed products (e.g., luxury clothes made with organic cotton). Second, in our studies the mixed products we used where hedonic product to which utilitarian attributes were added and removed (e.g., light cookies rich in cereals). Further research should explore consumers' reactions to and behavior toward different kinds of mixed products. An important question is whether there is difference between adding a utilitarian attribute (e.g., rich in calcium or fiber) versus removing a hedonic feature (e.g., fat or sugar free)? Similarly, we did not address in this research the fact that these products can have different degrees of “mixity” (more or less hedonic / utilitarian) and it could be relevant to explore the role of guilt in the decision process regarding these different types of mixed products. Third, it would be interesting to test the persistence of the context effects we find in this research and the guilt activation explanation using a more complex choice set (for instance, Sela et al. 2009).

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