Might a Heavier Waitress Make You Eat More, Less, Or Differently?

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This paper investigates how consumers react differently to food recommendations made by service personnel who are heavy versus thin. Two studies show that the body type of the experimenter in a taste test study altered both the quantity (Study 1) and choices (Study 2) participants made. Study 1 showed that dieters ate more snacks when the recommender was heavy, but non-dieters ate more when she was thin. Study 2 showed that dieters chose both a healthy and an unhealthy snack more often when it was recommended to them by a heavy (vs. a thin) experimenter.

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SESSION OVERVIEW

The purpose of this proposed special session is to explore the impact that lay beliefs have on consumers’ food consumption decisions. The obesity epidemic has emerged as one of the most challenging problems of our time (Flegal et al. 2000; Mokdad et al. 2000; Ogden et al. 2006), and its prevalence and links to numerous health problems (Manson and Bassuk 2003) underscore the importance of understanding why people make poor food choices. The four papers in this session (all of which contain at least two completed studies) propose previously unexplored psychological factors that can explain why consumers choose unhealthy foods.

The first paper (by Raghunathan et al.) explores whether a specific lay belief, namely, that the healthiness of food is negatively correlated with its tastiness (i.e., the “unhealthy=tasty” intuition in Raghunathan et al. 2006), leads those who believe in this intuition to make unhealthy food choices. The second paper (by Bhattacharjee et al.) demonstrates that erroneous consumer beliefs about drugs and supplements underlie a boomerang effect of weight management drug marketing, resulting in unhealthy consumption. The third paper (by Deng et al.) shows that consumers infer the perceived weight of a food product based on the location of the product imagery featured on the packaging, with images located on the top of packaging leading consumers to believe that the product is less filling, encouraging them to eat more. The fourth paper (by McFerran et al.) examines the impact of consumers’ views of others on food consumption decisions, exploring the implications that body type of serving personnel may have for restaurateurs and consumers.

The session’s focus on the influence of lay beliefs on food consumption decisions will hopefully contribute not only to the literature on obesity and food choices, but will also appeal to a diverse range of conference attendees, including researchers with an interest in decision making, lay beliefs, and self-control. Lastly, the session theme is consistent with ACR’s support of transformative consumer research. Identifying the type of psychological causes for unhealthy food consumption discussed in this session (vs. physiological or genetic causes) is crucial, since such causes are more amenable to control through policy interventions (Loewenstein, Brennan, and Volpp 2007; Ratner et al. 2008; Vandeveer 2008).

EXTENDED ABSTRACTS

“Evil Intuitions: Why Belief in the “Unhealthy=Tasty” Intuition Leads to Unhealthy Food Choices”

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The purpose of this research is to document the role that the “unhealthy=tasty” intuition—which refers to the belief that the healthiness of food is negatively correlated with its tastiness (Raghunathan, Naylor, and Hoyer 2006)—plays in steering people’s preferences toward more (vs. less) healthy foods. There are at least three reasons why the intuition steers preferences towards unhealthy (vs. healthy) options. First, assuming that people develop their (lay) theories about the relationship between healthiness and tastiness by observing the correlation between these two dimensions in the items they typically consume, it follows that, while those with strong belief in the intuition are likely to choose among items that are healthy or tasty, those with weaker belief in it are more likely to choose among items that are healthy and tasty. This leads to a greater proportion of less healthy items in the consideration (and consumption) sets of those with stronger (vs. weaker) belief in the unhealthy=tasty intuition. Second, we propose that consumers with stronger (vs. weaker) belief in the unhealthy=tasty intuition derive greater utility from unhealthy (vs. healthy) food options since: (1) they expect the unhealthy (vs. healthy) items to taste better— in accordance with the hypothesis confirmation bias—and (2) they attach greater relative importance to tastiness (vs. healthiness) in deciding what to consume. Finally, because consumers with stronger (vs. weaker) belief in the intuition encounter more frequent and more emotionally draining tradeoffs between tastiness and healthiness, the self-regulatory resources of those with stronger belief in the intuition are more likely to be depleted when making food consumption decisions (Vohs et al. 2008), resulting in more self-control failures (i.e., consumption of unhealthy food).

We conducted four studies to test these predictions. The first study used a combination of two data sources: (1) scanner panel choice data from a grocery chain and (2) data gathered from a survey that was mailed to a subset of the panelists. Results showed that, as belief in the intuition increased, the proportion of unhealthy (vs. healthy) purchases in two popular categories—ice cream and beer—increased, \( t_{\text{ice cream}}=2.03; p<.04 \) and \( t_{\text{beer}}=2.69; p<.01 \). Thus, consumers with stronger belief in the unhealthy=tasty intuition exhibited a higher propensity to purchase less (vs. more) healthy food—a finding that is consistent with the idea that those with stronger (vs. weaker) belief in the intuition are less likely to consider (and hence consume) more (vs. less) healthy food. Results from the second study showed that the same snack—M&Ms—are: (1) enjoyed more and (2) consumed in larger quantities by participants with stronger (vs. weaker) belief in the unhealthy=tasty intuition when the snack is perceived to be more (vs. less) unhealthy (through labels identifying the candy as either regular plain M&Ms or new, “low fat” M&Ms). This finding indicates that those with stronger (vs. weaker) belief in the intuition derive greater utility from less (vs. more) healthy options.

Study 3 was designed to assess whether the self-control resources of those with stronger (vs. weaker) belief in the unhealthy=tasty intuition are depleted to a greater extent when contemplating the consumption of healthy food, leading, thereby, to a greater propensity to consume less (vs. more) healthy food on a future consumption occasion. Participants were first asked to imagine consuming a certain set of healthy dinners over the course of the next five evenings. Then, participants indicated the extent to which the consumption of the healthy meals would deplete their self-control resources and how likely they would be to consume, for the next day, each of a set of unhealthy and healthy options (e.g., pizza, broccoli, etc.). Finally, participants indicated the extent of their belief in the unhealthy=tasty intuition. Consistent with our expectations, participants who more strongly believed in the unhealthy=tasty intuition reported a greater preference for the less healthy food, \( t_{\text{unhealthy}}=2.31; p<.05 \). Further, participants who expressed greater belief in the intuition reported greater depletion of self-control, \( t_{\text{unhealthy}}=2.46; p<.05 \). Finally, consistent
with our expectation that depletion of self-control resources enhances preference for unhealthy food, we found that the more depleted one’s self-control resources, the higher the preference for less healthy options, $\beta=.73$, t(1, 129)=3.51, p<.01. When both belief in the unhealthy=tasty intuition and depletion of self-control were jointly used as predictors of preference for the unhealthy food, only the latter was significant, $\beta=.76$, t(1, 129)=2.68, p<.01, and the effect of belief in the intuition was reduced to non-significance, t<1, indicating that the depletion of self-control resources fully mediates the relationship between belief in the intuition and the propensity to consume unhealthy food. Finally, results from Study 4—a real-world survey in which participants reported the extent of their belief in the unhealthy=tasty intuition and also provided their heights and weights—indicated that belief in the intuition was positively related to BMI, $\beta=.33$, F(1, 382)=3.09, p=.08.

“License to Lapse: The Effects of Weight Management Product Marketing on a Healthy Lifestyle”

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Even as obesity rates have risen dramatically in recent years (Ogden et al. 2006), consumers have been trying increasingly harder to maintain a healthy lifestyle; the coincidence of these trends has been dubbed the “American obesity paradox” (Heini and Weinsier 1997). Given these developments, the demand for safe and effective weight management solutions has intensified, and an assortment of weight management and fat-fighting products has proliferated. Though such weight management solutions appeal to many consumers, recent research suggests that there may be unintended consequences of the marketing of these products that actually undermine consumers’ intentions to engage in a healthy lifestyle. Hence, marketing of such products may unwittingly exacerbate risky decision making and reduce, rather than improve, consumer welfare.

Consistent with the notion that consumers adaptively cope with perceived risk in the environment (e.g., Floyd, Prentice-Dunn, and Rogers 2000), recent research suggests that remedy messages undermine risk avoidance and increase risky behavioral intentions, particularly for those consumers most at risk. Specifically, problem status (or the relative attractiveness of the problem domain) moderates the effects of remedy marketing messages (Bolton, Cohen, and Bloom 2006). Recent evidence suggests that two psychological mechanisms drive this boomerang effect. First, drug marketing reduces consumer perceptions of health risk and lessens the perceived importance of complementary health-protective behaviors, so consumers are less motivated to engage in these healthy behaviors. Second, drugs are associated with poor health, reducing consumers’ perceptions of their own health and their self-efficacy, and thereby diminishing their perceived ability to engage in complementary behaviors (Bolton, Reed, Volpp, and Armstrong 2008). Lacking both motivation and perceived ability to undertake health-supportive behaviors, consumers are unlikely to do so, leading to less healthy lifestyle intentions and a reduction in consumer welfare. Interestingly, this pattern does not hold for supplements: unlike drugs, supplements are not associated with poor health and are perceived as just one aspect of an overall health-protective regimen.

Building on prior research, we present a series of five studies conducted across samples of university students and field samples of adults from a daycare center and members of a fitness club. To examine the role of weight management product marketing, we focus on consumer beliefs that guide the processing of such messages and underlie corresponding behavior (c.f. Chandon and Wansink 2007; Raghunathan, Naylor, and Hoyer 2006). Results can be summarized as follows: (1) Actual consumption of high-fat foods increases with a single exposure to weight management drug versus supplement marketing messages, particularly for those participants who are hungriest, and thus most attracted to the problem domain; (2) Healthy behavioral intentions decrease when participants imagine taking a weight management drug versus supplement, particularly for those participants who suffer from body image issues and have a problematic relationship with this domain of unhealthy behaviors; (3) As theorized, the boomerang effect of weight management drug marketing on healthy behavioral intentions is mediated by decreased motivation and a perceived decrease in ability to engage in health protective behaviors; (4) Evidence from two field samples of real consumers with a range of knowledge levels suggests that erroneous consumer beliefs about drugs and supplements underlie the boomerang effect of weight management drug marketing. While the boomerang is partially mitigated by more accurate knowledge, only the highest levels of knowledge (reflecting specialized medical training or expertise) are sufficient to eliminate it completely.

Our findings make several notable contributions. To our knowledge, the present research is the first to demonstrate the boomerang effect of drug marketing on actual behavior and the first to demonstrate a boomerang arising from a single exposure to a drug marketing message. Our research also indicates that the boomerang effect can be influenced by both transient visceral factors (e.g., hunger) and relatively stable individual differences (e.g., body image), suggesting that it is not just certain “types” of consumers that are susceptible. Together, these results provide initial evidence that while drug marketing can influence mindful, intentional consumer behavior, it can also impact consumer behavior in relatively mindless eating contexts, highlighting the power and robustness of the boomerang phenomenon. Moreover, the present research provides evidence for the underlying role of erroneous consumer beliefs, suggesting that lay theories regarding weight management products lead consumers to reduce healthy lifestyle behaviors in response to weight management marketing. Finally, the present research investigates the role of consumer knowledge across a range of consumer samples. Only highly specialized medical training appears to mitigate the erroneous beliefs underlying the boomerang, suggesting that the beliefs held by most consumers are not “normative.” Even otherwise well-educated consumers are susceptible, supporting the robustness of the phenomenon.

“Using the Product Image “Location Effect” to Help Consumers Control Eating Patterns”

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Recently, consumer researchers have shown that marketing attempts designed to help consumers control their eating habits can cause boomerang effects. For example Mandel et. al (2008) showed that consumers who were self-identified as “restrained eaters” tended to eat more from smaller, portion controlled packages than from larger packages because consumers experienced a lapse in judgment due to the conflict inherent in experiencing high caloric food packaged as diet food. Pieters et.al (2008) found similar behavior, although they hypothesized that the problem was due to a lack of self-regulation on the part of the consumers because of the perceived regulation the packaging provided. This latter explanation mirrors the “Subway effect” identified by Chandon and Wansink...
Consistent with these previous findings, we hypothesize that consumers who eat by cognitive “rules,” as opposed to consumers who eat as a function of hunger desires, are more likely to overeat when they believe that their responsibility for watching calories has been deliberately taken care of by the marketer, for example through portion controlled sizes, “100 calorie bags,” or healthy eating claims. However, if the marketer can cue the desirability of smaller portions through a perceptual, automatic route rather than through a deliberate claim, the marketer may be more successful at controlling overeating.

Deng and Kahn (2009) showed that when product images are placed at the top of a package, the product seems lighter than when product images are placed at the bottom of a package. In this research, we extend this result to show that the perceived weight of the product as a function of image location on the package can extend to consumers’ perceptions of how filling and satisfying in terms of taste that the food product will seem. Further we show that this perceptual conclusion is an intuitive process, as opposed to a rule-based analytic process. Thus, we hypothesize that although deliberate, highly cognitive marketing tactics to help consumers control eating may backfire, that boomerang effect will be mitigated if the product imagery can be used to automatically cue that the product is more filling and more tasty, and hence eating less will be satisfactory.

We have conducted several experiments to test this theory. In one computer-based experiment, we show participants large bags of cookies or smaller, portion controlled size bags of cookies labeled “100 calorie” portions. We also vary whether the image of the product is at the top of the package (the light location) or at the bottom of the package (the heavy location), and we tell the participants to indicate how filling the cookies look and how many they want to eat. We also measure whether the participants use cognitive rules to control eating or not. We find that all of the consumers think that cookies in “100 calorie” packs will be less filling than those in unmarked packs (p<.001), supporting past results. However, for restricted eaters this effect of “100 calorie” packaging making cookies appear less filling goes away when the product image is in the heavy location, whereas non-restricted eaters continue to see the “100 calorie” packages as less filling when the product image is in the heavy location or light location (interaction p<.05). When asked how many cookies they would like to eat, none of the packaging effects affected the quantity of cookies chosen for unrestricted eaters, but the restricted eaters indicated wanting a cookie and a half more when the product image was in the light location as opposed to the heavy location (p<.05).

In another experiment we asked participants to look at cookie packages and to taste the cookies from that package where we had manipulated whether the cookie image was on the top or bottom of the package. We further manipulated load to test whether the product image effect was automatic or cognitive. The interaction between cognitive resource and product image location was significant (p<.05). When participants did not have the cognitive resources to process the cue, the location effect occurred. Cookies from the package using the heavy location tasted more satisfying than did cookies from the package using the light location. However, when participants had sufficient cognitive resources, this effect disappeared. These results show that when participants are processing the packaging automatically they are likely to eat less when the product is in the heavy location than when in the light location. We are in the process of running several other experiments to further test and replicate these findings.

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Consumers make over 200 food choices per day (Wansink 2006), and thus it is important to understand the antecedents to unhealthy food choices. However, little research in marketing has examined context effects influencing how consumers make the food choices they do. For instance, what if a heavy waitress recommended an indulgent choice or something very healthy? Would her weight influence your choice? Might her weight cause you to eat more food or less than if she was thin? Past research has shown that consumption decisions are influenced by those who are physically present. In a food context, studies have found that social influence can have either a facilitating or attenuating effect on consumption, depending on the context (see Herman, Roth, and Polivy 2003 for an excellent review). They argue that food choice is influenced by a desire to convey a certain impression or adhere to social norms (Leary and Kowalski 1990; Roth et al. 2001). Although, Herman et al. (2003) argue that making a good impression usually means eating less, other research has found that people may eat more, rather than less in the presence of another person (e.g. Conger, Conger, Costanzo, Wright and Matter 1990). Another line of research has examined the impact of obesity on consumption. Priming people with overweight images has been shown to lead to an increase in quantity consumed (Campbell and Mohr 2008).

The above lines of research have focused either on how much others eat or on the social influence of obesity, but little research has examined the influence of the two jointly. In social influence work more generally, the effects of the social “other” have been shown to be moderated by whether the person is a member of an aspirational or dissociative group (Escalas and Bettman 2005; White and Dahl 2005, 2008). Since thin models are seen as an ideal standard in North American society (Durkin and Paxton 2002) and obesity is a stigma that most wish to avoid (Johnson 2002), the body type of others should interact with their food choice (indulgent vs. moderate) in forming evaluations of them. Specifically, Campbell and Mohr (2008) found that overweight (vs. thinner) images led consumers to believe they would eat less food, and thus it would be reasonable to predict that a thinner server would lead to greater consumption and be a more persuasive recommender of a food choice. However, we also argue that there may be another factor at play in determining how social others impact food consumption. Research has shown that dieters often do not make the same food choices as non-dieters (Federoff, Herman, and Polivy 1997; Polivy and Herman 2002). Specifically, studies have shown that dieters sometimes exhibit a backfire effect, eating more when small food is placed in small packages (Scott, Nowlis, Mandel, and Morales 2008) or eating more (rather than less) following a “preload” of calories (e.g. Knight and Boland 1989; Polivy 1976). We propose, based on recent research on reference groups (Berger and Heath 2007; 2008; Berger and Rand 2008; White and Dahl, 2008) and dieting (Scott, Nowlis, Mandel, and Morales 2008), that consumers should react differently in a food choice context to obese versus thin servers.

Using a professionally-constructed obesity prosthesis, an identical confederate portrayed both a thin and a heavy experimenter in identical clothes. Study 1 was a one factor design (obese vs. thin experimenter) plus a measured variable capturing participants’ dieting orientation and was conducted as a taste test. The experimenter (wearing the prosthesis or not) told participants they must choose only one of two sweet snacks (bite size cookies or glazed
rice cakes) to evaluate, but that they could eat as much of their choice as they wished. She then recommended the chocolate cookies to participants. Results showed that while participants’ snack choice did not vary as a function of the confederate’s body type, their consumption quantity did. An interaction effect (treating dieting orientation as a continuous variable) showed dieters ate more snacks when the recommender was heavy, but non-dieters ate more when she was thin.

Study 2 used a sample consisting only of dieters, and the procedures were the same as Study 1, but we directly manipulated the snack the experimenter recommended by including a healthy choice in a 2(obese vs. thin experimenter) x 2(recommends cookies or carrot sticks) between subjects design. Results of a logistic regression showed a significant interaction effect: when cookies were recommended, dieters chose cookies more often when the experimenter was heavy (vs. thin), but when carrots were recommended, they selected cookies with a greater frequency when she was thin (vs. heavy). Dieters followed the recommendation of the heavy server more, choosing both the healthy and the unhealthy snack more often when it was recommended to them by a heavy (vs. a thin) experimenter. These two studies point to the implications that body type of serving personnel may have for restaurateurs and consumers.