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## **What Is Beautiful Tastes Good: Visual Cues, Taste, and Willingness to Pay**

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How much is the plating and presentation of a food worth? Two studies investigate two different perspectives on how visual cues bias taste evaluations and willingness to pay. In general, a “What is beautiful tastes good” perspective provides a better explanation of how visual cues bias taste evaluations of familiar, favorable foods than does the conventionally used “confirmation bias” perspective. Visual cues of plating and presentation influence taste and willingness to pay by a range of 14-121 percent. Although effort and cost is associated with plating and presentation, these results suggest it is effective both for ratings of a food’s taste and how much someone is willing to pay.

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## SPECIAL SESSION SUMMARY

# Plates, Smiley Faces and Price Tags: How Contextual Factors Bias Consumption

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### SESSION OVERVIEW

Decades of research in judgment and decision making (e.g., Tversky & Kahneman 1974; Chaiken, Liberman & Eagly 1989; Sloman 1996) has established the view that everyday behaviors are often guided by simple heuristics instead of deliberative reasoning. Although relatively effortless, simple heuristics can lead to systematic biases. While a great deal of research has focused on investigating heuristics and biases in judgments (e.g., Tversky & Kahneman 1974; Kahneman, Slovic & Tversky 1982) and choices (e.g., Huber, Payne & Puto 1982; Simonson 1989; Simonson & Tversky 1992), little attention has been given to how heuristic cues can bias consumption decisions. In a few notable exceptions, consumption behaviors have been shown to be influenced by package size (Wansink 1996), container shapes (e.g., Wansink & Ittersum 2003), and serving units (e.g., Cheema & Soman 2008).

Given the crucial role consumption plays in today's economy, health care, and its impact on the natural environment, it is critical to understand how people's consumption decisions can be swayed by different contextual factors. In this session, we present three papers that add to the emerging view that consumption behaviors are largely constructive and context-specific. The papers demonstrate how different subtle contextual cues (e.g., the plating and presentation of a food, the image of a smiling face, and prices of weight loss pills) can produce systematic impact on people's consumption behaviors across different domains (e.g., food, personal care products, and dieting and exercising programs), thus providing an opportunity to establish linkages between various research streams.

In the first paper, Payne and Wansink show that visual cues can induce a generalized "halo effect" and bias the consumption experience of food products. In particular, they show that the plating and presentation (e.g., presenting a brownie on a china plate, a napkin or a paper plate) significantly influence ratings of a food's taste and how much someone is willing to pay. Their results suggest that the heuristic-based "what is beautiful tastes good" association provides a better explanation of how favorable food-related visual cues (e.g., a china plate) bias post-consumption evaluations than does the conventionally used "confirmation bias" perspective.

The second paper by Zhu, Billeter and Inman illustrates how visual cues bias consumption in an advertising context. Their findings suggest that consumers rely on pictures rather than product descriptions in advertisements to infer product effectiveness and accordingly decide how much to consume. They demonstrate that pictures (e.g., a smiling face with great teeth) can increase perceived effectiveness of the advertised products (e.g., a whitening rinse) and concomitantly reduce usage amount of the featured products. They provide evidence that this negative impact of pictures on consumption mainly arises from heuristic processing and is attenuated by cognitive deliberation.

Finally, Bagchi and Cheema look at how contextual factors affect consumption of goal-relevant alternatives in consumer consumption context. They demonstrate that rather subtle cues (e.g., paid price for weight loss pills) can induce different efficacy perceptions about whether the goal is easy or hard and hence systematically impact consumption of goal-consistent (e.g., exercising to lose weight) vs. goal-inconsistent (e.g., avoiding rich foods) alternatives. Their results suggest that efficacy increases motivation to pursue goals when individuals focus on engaging in

goal-consistent consumption alternatives (e.g., exercising), but hurts when the focus is on avoiding goal-inconsistent consumption alternatives (e.g., dieting).

Taken together, the three papers (all in advanced stages) in this session examine the largely underexplored relationship between contextual factors and consumption and present a consistent picture suggesting that consumption decisions are largely constructive, context-specific, and are often determined by heuristic cues rather than deliberate thoughts and stable preferences. As the session integrates diverse research, it is expected to appeal to a broad audience, including those interested in consumption, decision-making, information processing, judgment biases, advertising and goals.

### EXTENDED ABSTRACTS

#### **"What is Beautiful Tastes Good: Visual Cues, Taste, and Willingness to Pay"**

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The plating and presentation of a food, much like the attractiveness of a person, could induce a generalized halo for it. For example, if a food is presented on an attractive plate with an attractive presentation, one might assume this food to have other related positive characteristics. Once this assumption is made, favorable assessments of the food may be generated before it is even consumed (Mela, 1999). The assumption of a direct association between favorable food-related visual cues (plating and presentation), perceived taste, and "willingness to pay" is the basis for a proposed "what is beautiful tastes good" perspective of food ratings.

In contrast to the "what is beautiful tastes good" perspective, it may be that the plating and presentation of a food may create a belief about how much one is willing to pay for it that typically would be confirmed (rather than disconfirmed) through its perceived taste ("confirmation bias" perspective) (Wason, 1960). For example, if a food is presented on an attractive plate with an attractive presentation, a restaurant patron may assume that the food is "good" or high quality and initially believe that they would be willing to pay more for it. Once this belief is made, patrons will be biased in their search for positive taste evidence that confirms, rather than disconfirms, their initial belief of their willingness to pay more for it.

Where these two perspectives differ is the importance given to such taste evaluations. The confirmation bias perspective assumes the taste of a food must first be confirmed before one will be willing to pay more for it. In contrast, the "What is beautiful tastes good" perspective assumes that "there is enough information" in the plating and presentation of the food to affect not only perceived taste, but also how much one is willing to pay for it. We suggest that visual cues of plating and presentation provide enough information to influence one's willingness to pay, which is minimally influenced by an actual taste experience.

Study 1 involved 119 students (68.1% female; 19.1 years old) who were regular diners in a cafeteria. While still seated, each participant was shown a salad, sandwich, and brownie, which were all presented in one of three presentation styles (on a paper plate, on a glass plate, or on a glass plate with a garnish of parsley). Both the

presentation order of the foods and its presentation style were systematically rotated. After seeing each food, participants were asked to fill out a brief questionnaire which included the question, "If this was a new menu addition in the cafeteria, what is the most you would pay for this food?"

There was a notable increase in how much people would pay for a food item based on its presentation for the sandwich [ $F(2, 226)=28.81, p<.001$ ], the brownie [ $F(2, 225)=6.69, p=.002$ ], and to a lesser extent, the salad [ $F(2, 223)=2.86, p=.059$ ]. All possible post-hoc contrasts for sandwich were significant (all  $p's<.01$ ) while—for the brownie—significant differences were found between the presentation of it on a paper plate versus glass plate with garnish ( $p=.001$ ) and between its presentation on a glass plate and a glass plate with garnish ( $p=.029$ ). No significant differences were found for the salad. No explicit measures were taken to check for the participants' evaluation of the appearance of the food in Study 1. The subsequent study evaluates the appearance of food as a function of its presentation and also includes an actual consumption experience.

One hundred seventy-five cafeteria diners (72% female; 26.2 years old) participated in this study. They were asked if they would like to sample a free brownie. A brownie was then presented to the seated participants in one of three ways: on a napkin, on a paper plate, or on a china plate. After consuming the brownie, participants were given a questionnaire, which assessed their perception of the brownie's taste and how much they were willing to pay for it.

A manipulation check showed plating and presentation improved appearance ratings of the brownie,  $F(2, 172)=39.87, p<.001$ . All possible post-hoc contrasts for appearance were significant and in the anticipated direction (all  $p's<.01$ ). An increase in the perceived taste of the brownie as a function of plating and presentation was also found [ $5.22, 5.61, \text{ and } 6.16; F(2, 172)=13.9, p<.001$ ]. This result supports the idea that the plating and presentation of a food can influence subsequent taste. Post-hoc analyses indicated that the significant differences were found for "taste" between presentation of a brownie on a napkin and glass plate ( $p<.001$ ) and also between a brownie presented on a paper plate and glass plate ( $p<.01$ ).

To test whether plating and presentation significantly affected "willingness to pay" after controlling for taste, we conducted a Sobel test (see Baron & Kenny, 1986). This test specifically assesses whether the relationship between plating and presentation and "willingness to pay" can be accounted for by perceived taste. If the relationship is significantly reduced, the relationship is said to be accounted for by taste. The Sobel test resulted in nonsignificance (Sobel Test=1.6,  $p=.11$ ). Improvements in plating and presentation influenced how much a person indicated they would be willing to pay. Improving plating and presentation in Study 1 led participants to indicate they would pay the equivalent of 22.6% more for a brownie, 14.5% more for a salad, and 60.6% more for a sandwich. In Study 2, participants given the attractively presented plate after eating their lunch were willing to pay 139.6% more for it (\$0.53 vs. \$1.27). It appears that a person's evaluation of willingness to pay for a food can be better explained by a person's initial impression of the appearance of the food than by their subsequent taste of it.

#### **"Can Pictures in Advertisements Curb Consumption?"**

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Marketers often use pictures in advertisements with the hope and conviction that they would produce a positive impact on consumer preferences. Accordingly, the effect of pictures on adver-

tising has been studied extensively by marketing researchers. Pictures have been shown to have a positive impact on advertising effectiveness, by enhancing consumer's recall of brand name (e.g., Lutz and Lutz 1977), facilitating retrieval of attribute information (e.g., Houston et al. 1987) and forming favorable attitudes towards the brand and advertisement (e.g., Mitchell 1986). However, whether the positive effect of pictures on advertising effectiveness leads to higher consumption volume remains an uninvestigated and intriguing question that has both theoretical and practical marketing implications.

The purpose of this paper is to systematically investigate the impact of pictures in advertisements on consumption. Building on an emerging stream of research showing that consumption behaviors are often guided by simple heuristics rather than deliberative thinking (e.g., Wansink 1996; Wansink and Ittersum 2003; Cheema and Soman 2008), we suggest that consumers use pictures in advertisements to simplify their consumption decision. Particularly, we suggest that the impact of pictures on consumption is mediated by perceived product effectiveness. That is, consumers infer effectiveness of the advertised product from pictures presented in the advertisement. In deciding how much of a product to consume, people rely on their perceptions of product effectiveness as an indicator for what amount is required. Because a more effective product often requires a smaller amount to accomplish the same objective, we propose that pictures that increase perceived effectiveness of the advertised products will reduce usage amount at a single occasion. As this effect mainly arises from heuristic processing, we predict that cognitive deliberation will attenuate the negative impact of pictures on consumption. Further, we predict that other marketing variables, such as brand names, can also serve as heuristic cues for inferring product effectiveness and consequently generate a similar systematic impact on consumption.

Study 1 is designed to demonstrate the proposed main effect. In particular, we study whether adding the picture of a smiling face with great teeth to an otherwise text-only rinse advertisement reduces consumption volume at a single occasion. Subjects were shown an ad for a new teeth whitening rinse, either with or without a smiling face, and then asked to estimate how much rinse they would use at one time. We found that adding the image of a smiling face with great teeth reduced the estimated consumption rate of the advertised rinse by 42.35%.

Study 2 investigates whether the negative impact of pictures on consumption occurs primarily due to heuristic processing and is attenuated by cognitive deliberation. We directly manipulate cognitive deliberation by asking half of the subjects to rate the importance of each product description presented in the advertisement (Wilson & Schooler, 1991), before estimating the consumption volume. As expected, without rationalization manipulation, subjects indicated less rinse needed for a single occasion when the image of a smiling face was added to the otherwise text-only rinse ad; in support of the proposed heuristic account, we find that the negative impact of the picture on consumption decreased in the rationalization conditions.

Study 3 demonstrates the proposed main effect in an actual consumption scenario. We presented subjects with the actual teeth whitening rinse featured in the advertisement and asked them to pour the amount of rinse they would use into a plastic cup provided by the experimenter. Our results indicate that adding the image of a smiling face reduced actual usage amount of the advertised new teeth whitening rinse by 26.54%. The results of Study 3 also provide further support for the proposed heuristic processing account by showing that pictures mainly influenced the consumption rate of

individuals whose need for cognitive thinking was low, rather than individuals who had a higher natural tendency to engage in deliberative processing.

Study 4 investigates the boundaries for the proposed negative impact of pictures on consumption. We choose three different pictures found in actual advertisements of existing insect repellents, that is, a plant, a live bug and a crossed-out bug, to create advertisements for a new herbal insect repellent. Consistent with previous findings, the addition of a picture that enhanced judgment of product effectiveness (a crossed-out bug) led subjects to use less of the advertised product (insect repellent). Additionally, we find that pictures that generated worse effectiveness judgment (a live bug) and did not directly influence perceived effectiveness (a plant), led an increase and no difference respectively in consumption. The data confirmed the significant mediating role of perceived product effectiveness in the relationship between pictures and consumption. Study 5 extends the impact of pictures on consumption to brand names in another product category, toilet bowl cleaner. We find that the brand name "BalanceClean" as compared "BalanceGreen" led to increased effectiveness judgment about the featured toilet bowl cleaner and consequently decreased consumption volume.

The present research offers implications for marketing practitioners. Contrary to the common belief that pictures in advertisements generate positive influences on consumer demand, we show that pictures, particularly those images that increase perceived effectiveness of the advertised products, can inadvertently decrease sales volume due to reduced usage amount at a single occasion and lengthened repurchase cycle. Our results also indicate that pictures that decrease perceived product effectiveness can in fact increase consumption, implying that choosing pictures or brand names that do not enhance perceived effectiveness for new products and brand extensions may be a viable marketing strategy.

### "The Ironic Effect of Efficacy on Consumer Consumption"

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Literature on goal-pursuit reveals that self-efficacy perceptions enhance effort and persistence of individuals pursuing a goal (Bandura 1977). Individuals also exert more effort when pursuing easy-to-achieve (vs. hard-to-achieve) goals and when the likelihood of reaching the goal is higher (Naylor and Ilgen 1984). However, other research suggests that when goals conflict (Shiv and Fedorikhin 1999), individuals sometimes decrease their effort towards one goal and focus on a competing goal. Koo and Fishbach (2008) label this as balancing and suggest that, when provided with information on how much effort remains to achieve a goal, individuals who are uncertain about their commitment towards the focal goal shift efforts to a competing goal, while those who are certain highlight the focal goal. Related research suggests that remedial products, such as a patch to quit smoking, increases incidence of smoking among existing smokers (Bolton, Cohen, and Bloom 2006). Thus, it is not evident how increased efficacy (effectiveness) influences goal-pursuit in the presence of competing goals.

We focus on situations where multiple competing goals exist, specifically in the context of losing weight. In this context, individuals try to manage goals of eating tasty (and often unhealthy) foods with a weight-loss goal, which requires exercising and dieting (avoiding rich foods). We argue that the type of action considered (engaging in goal-consistent action vs. avoiding goal-inconsistent action) will moderate the effect of efficacy on goal-

pursuit. Specifically, when considering engaging in goal-consistent actions (exercising), increased efficacy will enhance goal-pursuit. However, when considering avoiding goal-inconsistent actions (dieting), increased efficacy will decrease goal-pursuit.

We expect that elaborating on goal-consistent actions will increase goal commitment. Higher efficacy will make the desirable goal easier to achieve and will enhance goal-pursuit. In contrast, elaborating on goal-inconsistent actions will decrease commitment towards the focal goal. In this context, making the focal goal easier to achieve (through increased efficacy) may encourage balancing. We demonstrate these effects in two studies.

In study 1, participants learn that they are trying to lose weight by exercising and by dieting. We measured participants' willingness to persist in actions to achieve this goal. We manipulated the type of action between subjects. Half the participants were asked how likely they were to continue working out, while the rest indicated how likely they were to continue on a diet. Participants also responded to a seven-item efficacy scale. We classified each participant as being low, medium, or high in efficacy related to the action asked. Thus, the study was a 2 (action: avoiding goal-inconsistent actions versus persisting in goal-consistent option) x 3 (efficacy: low, medium, high) mixed between-subjects design.

An ANOVA with likelihood of goal-pursuit as the dependent measure and type of action and efficacy as the predictors elicited a significant action x efficacy interaction,  $F(2, 146)=3.82, p<.05$ . Among participants considering the goal-consistent action (exercise), high- (vs. low-) efficacy led to greater likelihood of goal-pursuit ( $M$  high-efficacy=6.55 vs.  $M$  low-efficacy=5.38). Moderate-efficacy people were also more likely to pursue their goal ( $M$  moderate-efficacy=6.21) than low-efficacy people. There was no significant difference between moderate and high-efficacy participants considering the goal-consistent action.

In contrast, among participants considering avoidance of the goal-inconsistent option (diet), high-efficacy participants were significantly less likely to pursue the goal than moderate-efficacy participants ( $M$  high-efficacy=5.36 vs.  $M$  moderate-efficacy=6.28). However, consistent with a beneficial effect of efficacy, moderate-efficacy participants were more likely to pursue their goal than were the low-efficacy participants, ( $M$  moderate-efficacy=6.28 vs.  $M$  low-efficacy=5.00). While high-efficacy participants were directionally more likely to pursue their goal than low-efficacy participants, this difference was not significant. Thus, moderate levels of efficacy increase goal pursuit, while high levels of efficacy decrease goal-pursuit when the individual focuses on goal-inconsistent options. Using a continuous measure of efficacy, with a squared term for the non-linear effect, also led to similar results. In study 2, we replicate these results by manipulating perceptions of efficacy.

The scenario indicated that participants were trying to lose weight and that the university was providing free weight loss pills to help. We manipulate perceived efficacy by indicating whether the university paid full price for these pills or not. Research suggests that full-priced drugs are perceived to be more efficacious (Shiv, Carmon, and Ariely 2005). Participants then responded to likelihood of pursuing their weight-loss goal. We also manipulated type of action between subjects as in study 1. Thus, the study was a 2 (action: avoiding goal-inconsistent actions versus persisting in goal-consistent option) x 2 (efficacy: low, high) full factorial between-subjects design.

An ANOVA with likelihood of goal-pursuit as the dependent measure and type of action and efficacy as the predictors elicited the predicted action x efficacy interaction,  $F(1, 136)=17.52, p<.0001$ . Among people considering the goal-consistent action, those in the

high-efficacy condition are more likely to pursue the goal (M high-efficacy=6.23 vs. M low-efficacy=5.40). In contrast, among people considering the goal-inconsistent action, increased efficacy decreased likelihood of goal-pursuit (M high-efficacy=5.11 vs. M low-efficacy=5.80). These results were consistent with those from study 1.

Thus, efficacy increases goal-pursuit when individuals elaborate on goal-consistent actions, but hinders goal-pursuit when individuals focus on goal-inconsistent actions. We believe this process occurs because elaboration of goal-inconsistent actions decreases individuals' commitment towards the goal and licenses the individual to focus on goal-inconsistent actions (Fishbach and Dhar 2005). We also discuss theoretical and managerial implications and suggest future extensions.

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