When Food Advertising Triggers Salivation: the Role of Positive Affectivity on Appetitive Craving and Eating Intentions

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People with high scores on positive affectivity responded with stronger levels of salivation, appetitive craving and eating intentions when exposed to vivid advertising appeals for pizza. For restrained dieters, compared to non-dieters, the salivation response to vivid cues was highest for those scoring high in positive affectivity.

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EXTENDED ABSTRACT

Exposure to the sight or smell of foods often activates a non-conscious increase in salivation in anticipation of the pleasure of eating (Jansen et al., 2010). Since salivation is a non-conscious and involuntary physiological response, it provides a more accurate estimate of hedonic ‘wanting’ than paper and pencil self-reports which may be influenced by self-presentation concerns of respondents (Berridge et al. 2010; Krishna et al. 2014). Our results indicate: (1) that salivary response varies across individuals because of differences in personality traits associated with affect intensity (Larsen et al., 1996); (2) the influence of affect intensity (AI) on salivation, appetitive craving and purchase intention is moderated by two consumption-relevant variables: a) the vividness of the advertising appeal, and b) whether people are dieters or non-dieters.

Contribution. This study explores for the first time the possibility that people high in positive affectivity, a sub-factor of the affect intensity personality construct (Larsen and Diener 1987), will respond to vivid food cues in advertising appeals with more salivation than their low PA counterparts. We test whether dieting status (restrained vs. unrestrained eaters) moderates the relationship between positive affectivity and responses to vivid food cues. Dependent measures are: a) salivation responses, b) appetitive craving, and c) behavioral intentions (number of desired slices to eat).

When people are exposed to a pleasure laden stimulus, high PA people engage in fantasy elaboration by imagining and visualizing consumption experiences. We contribute to the literature by testing the role of Positive Affectivity (PA) as a more efficient measure of the impact of affect intensity on craving, salivation and behavioral intentions. Bagozzi (1994) noted that when personality constructs are multidimensional like the AIM (Larsen and Diener 1987), the use of specific sub-dimensions of the scale may be more interpretable than the use of the total scale which is longer and more cumbersome. Positive affectivity assesses the degree to which individuals experience intense positive feelings (e.g. “When I feel happy, it is a strong type of exuberance”). This is more appropriate for identifying people who are focused on anticipating or seeking pleasurable experiences.

Positive Affectivity and Food Craving. Food cravings are cue-elicited expectations that are stimulated by the anticipation of the oro-sensory pleasures (e.g. sweetness, texture) to be enjoyed from food consumption (Cepeda-Benito et al. 2000). High PA people with strong positive affectivity scores are more likely to seek out pleasurable experiences such as the anticipation of food enjoyment and this sensory process encourages appetitive craving (Belk et al. 2003; Pelchat et al. 2004).

Positive Affectivity and salivation. Positive affectivity respondents seem more likely to experience food craving which in turn may stimulate salivation (Nederkoorn & Jansen, 2002). Exposure to the sight or smell of food can stimulate higher levels of craving and salivation responses. Thus, if high PA people experience more cravings in response to vivid food stimuli, then they should also be likely to show an increase in their salivation response.

Positive Affectivity, Dieting Status, and Salivation. Dieters are restrained eaters who suppress the physiological urges to eat in order to avoid weight gain (Fedoroff, Polivy and Herman 2003). Chronic dieters tend to have heightened salivary responsiveness to food stimuli (Brunstrom et al. 2004). Furthermore, this physiological response to food is often strongly correlated with the extent to which restrained eaters are emotionally connected to food (Scott et al. 2008). Since affect intensity represents the strength of the emotional response to daily situations in life, restrained eaters (dieters) with high positive affectivity will salivate more when exposed to vivid food cues. Because restrained dieters tend to use cognitive suppression to control food intake (Nederkoorn and Jansen 2002), we predict that high PA dieters may actually report milder eating intentions after exposure to the more vivid advertising appeal.

Method

Design and Procedure. We examined the joint effects of dieting status (dieting or not), positive affectivity, and vivid versus pallid food cues in predicting appetitive craving, salivation and behavioral intentions. The vivid version featured a full color image of a pizza slice, with delicious red and green pepper toppings, and a generous coating of golden mozzarella cheese oozing off the slice. The pallid version featured a black and white picture of the same pizza. In order to ensure that participants would be sufficiently responsive to the food ads, they were asked to refrain from eating or drinking at least two hours before coming to the lab.

All participants were first shown a control image (a local paper store) via a survey website. This was to assess individual differences in salivation without a food stimulus. Dental rolls were first weighed dry with a high-precision food scale (0.01 g gradations). They were then placed in participants’ mouths for 2 minutes while viewing the image to assess salivation responses to it. Dental rolls were then weighed a second time. The salivation response was calculated as the difference between the pre and post-image dental roll weight. Appetitive craving was measured with three items (α=.86): “I have a strong desire to eat a Sorzano pizza”; “The advertisements made my mouth water for Sorzano pizza”; “The advertisements made me have strong cravings for a Sorzano pizza” (1=Strongly Disagree; 7=Strongly Agree). Eating-related behavioral intentions were assessed by asking: “How many slices would you want to eat if you could have a large Sorzano pizza right now?”

Discussion

The data showed a significant 3-way interaction effect for Dieting/Not Dieting X Vividness of the Ad X PA (positive affectivity). For Dieters, the salivation response to vivid advertising cues is strongest for those scoring high in Positive Affectivity. For Non-Dieters who were exposed to pallid food images, levels of positive affectivity were not related to the number of desired slices. Yet, when Non-Dieters were exposed to vivid food images, those high in PA wanted to eat more pizza slices. In contrast, although dieters salivate more in response to vivid food cues, especially if they are high in PA, they self-report being unaffected by these cues. This points to the value of using physiological assessments like salivation to gain more accurate data in situations where respondents are likely to protect their true feelings. Nevertheless, this is the first study to demonstrate a direct link between individual differences in personality traits and salivation responses.

Future research is needed to clarify the conditions under which high PA restrained eaters suppress their appetitive urges in light of recent neuroscience research indicating that when sensory pleasure...
for food is stimulated by exposure to food stimuli, this process can activate within the human brain a very powerful “go” system that can lead to excessive eating bouts that may be difficult to ‘turn off’ (Berridge et al. 2010). The unanswered question is: If exposure to appetizing food can trigger increased salivation which may lead to overeating, how can marketing and public policy strategists determine the profile of these consumers in terms of their personality traits and demographic characteristics?

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