



Contents lists available at ScienceDirect

Appetite

journal homepage: www.elsevier.com/locate/appet

Pleasure as an ally of healthy eating? Contrasting visceral and Epicurean eating pleasure and their association with portion size preferences and wellbeing

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ARTICLE INFO

Article history:

Received 9 January 2015

Received in revised form

2 June 2015

Accepted 18 August 2015

Available online xxx

Keywords:

Portion size

Food reward

Food choices

Pleasure

Wellbeing

ABSTRACT

Research on overeating and self-regulation has associated eating pleasure with short-term visceral impulses triggered by hunger, external cues, or internal emotional urges. Drawing on research on the social and cultural dimensions of eating, we contrast this approach with what we call “Epicurean” eating pleasure, which is the enduring pleasure derived from the aesthetic appreciation of the sensory and symbolic value of the food. To contrast both approaches, we develop and test a scale measuring Epicurean eating pleasure tendencies and show that they are distinct from the tendency to experience visceral pleasure (measured using the external eating and emotional eating scales). We find that Epicurean eating pleasure is more prevalent among women than men but is independent of age, income and education. Unlike visceral eating pleasure tendencies, Epicurean eating tendencies are associated with a preference for smaller food portions and higher wellbeing, and not associated with higher BMI. Overall, we argue that the moralizing approach equating the pleasure of eating with ‘low-level’ visceral urges should give way to a more holistic approach which recognizes the positive role of Epicurean eating pleasure in healthy eating and wellbeing.

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1. Introduction

Different streams of research on food and eating have adopted contrasting conceptualizations of eating pleasure. Research aiming to understand overeating and self-regulation failures has taken a negative view of eating pleasure, equating it with the satisfaction of visceral impulses triggered by the environment or by negative emotions (e.g. Loewenstein, 1996; van Strien, Frijters, Bergers, & Defares, 1986). Simultaneously, research on the social and cultural dimensions of eating has taken a more positive view of eating pleasure by focusing on the “Epicurean” aesthetic facets of eating (e.g. Johnston & Baumann, 2007; Rozin, Fischler, Imada, Sarubin, & Wrzesniewski, 1999).

Drawing on existing classifications of pleasures (Alba & Williams, 2013; Annas, 1987; Brillat-Savarin, 1841; Dube & Le Bel, 2003; Duncker, 1941; Korsmeyer, 1999; Rozin, 1999), we contrast

the “visceral” vs. “Epicurean” perspectives, among the many related concepts (e.g., “sensuous” vs. “cognitive” pleasure). We define visceral eating pleasure as the short-lived hedonic relief created by the satisfaction of eating impulses. Visceral eating pleasure is the by-product of relieving a visceral urge, often beyond eaters’ volitional control, and it can be summarized by its valence (pleasant or unpleasant) regardless of the rich aesthetic experience of eating (e.g. Dube & Le Bel, 2003; Loewenstein, 1996).

In contrast, we define Epicurean eating pleasure as the enduring pleasure derived from the aesthetic appreciation of the sensory and symbolic value of the food. This kind of pleasure is unrelated to impulses and within people’s volition, it can be pursued as an end in itself (i.e. it is not the by-product of relieving an urge), and it cannot be summarized by its valence because it is intrinsically linked to differentiated aesthetic, sensory and symbolic eating experiences (e.g. Hirschman & Holbrook, 1982; Rozin, 1999). Further, whereas the “visceral” view assumes that eating pleasure is the enemy of healthy eating and must be controlled or suppressed to avoid overeating – even at the expense of wellbeing – the Epicurean view holds that eating pleasure goes hand in hand with

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moderation and wellbeing.

In order to better conceptualize the differences between Epicurean and visceral eating pleasures, we develop and test a scale of Epicurean eating pleasure tendencies and contrast it with visceral eating pleasure tendencies, captured by the “external eating” and “emotional eating” subscales of the Dutch Eating Behavior Questionnaire (van Strien et al., 1986). We then compare the association of the Epicurean and visceral eating pleasure scales with two related eating traits, restrained eating (van Strien et al., 1986) and health worries (Rozin et al., 1999), as well as with key demographic variables (BMI, gender, age, education, and income). Finally, we study the association between Epicurean and visceral eating pleasure tendencies, portion size preferences and wellbeing. To achieve this goal, we develop another new instrument which measures the preference for large portion sizes.

We find that Epicurean tendencies are associated with a preference for smaller portions and with greater wellbeing, whereas external eating and emotional eating are associated with a preference for larger portions, higher BMI, and lower wellbeing. Further, Epicurean tendencies are found to be orthogonal to health worries or restrained eating tendencies, which promote moderation in portion preference but are associated with lower wellbeing.

1.1. Visceral eating pleasure

Although it has older roots, the notion of visceral eating pleasure can be traced to early work on the “physiology of taste” by 19th century French essayist Brillat-Savarin (1841). Brillat-Savarin defined the “pleasure of eating” as a peculiar sensation directed toward the satisfaction of hunger, a bodily necessity, not to be confused with the “pleasures of the table” (discussed in more detail below). In his seminal work on the physiology of eating, Cabanac (1971) used the same conceptualization of eating pleasure, consistent with the focus of early work in the field, especially in animal research, which relied on a homeostatic model of eating (Cabanac, 1971, 1985; Herman & Polivy, 2005; Rozin, 1999). In this model, the pleasantness (or anticipated pleasantness) of food increases when one is hungry and decreases when one is satiated.

In today's society of plentiful and cheap food, eating behaviors are no longer determined by hunger and satiety, except in the rare cases when one has fasted or cannot physically eat more (Herman & Polivy, 1983; Wansink & Chandon, 2014). More importantly, the current obesity epidemic has shown that homeostasis alone cannot explain eating behaviors (Stroebe, Papies, & Aarts, 2008). In the field of behavioral decision-making, Loewenstein (1996) introduced the notion of “visceral factors” to understand how pleasure could lead to self-regulation failures such as overeating. These visceral factors encompass physiological needs (such as hunger) but also psychological drives (such as emotions and cravings). Visceral factors are manifested by a direct, usually negative, hedonic sensation (e.g. the aversive response to hunger or cravings), which increases desires and is followed by a short-lived sensation of pleasure when the visceral drive is satisfied (Duncker, 1941; Loewenstein, 1996). More specifically in the domain of food, van Strien et al. (1986) propose two broad categories of non-homeostatic visceral factors that can trigger eating for pleasure: external food sensory cues (leading to “external eating”) and internal emotions (leading to “emotional eating”).

External eating is triggered by the rewarding sensory properties of the ever more palatable foods marketed today (Stroebe, Van Koningsbruggen, Papies, & Aarts, 2013). Food companies have developed expertise in finding the best combination of sugar, salt and fat to make food most palatable and rewarding, regardless of its satiating properties (Naleid et al., 2008). Many studies have demonstrated that the mere sight, smell or taste of a pleasant food

can trigger visceral urges to eat (and the pleasure that accompanies the satisfaction of such urges) even in the absence of hunger (Fedoroff, Polivy, & Herman, 1997; Rogers & Hill, 1989). Neuro-imagery studies have even shown that the mere exposure to pleasant food stimuli can activate the pleasure and reward centers of the brain, leading to experienced or anticipated pleasure (Berridge, 2009; Plassmann, O'Doherty, & Rangel, 2010).

Like external factors, emotions can also trigger visceral eating urges, leading to the anticipation of pleasure and the reward that goes with satisfying such urges. Bruch (1964) argues that people eat in response to negative emotions because of a confusion between internal arousal states and hunger. Other theories suggest that people, especially restrained eaters, actively seek pleasurable foods as a way of regulating negative emotions (for a review, Macht, 2008). For example, people eat more popcorn and M&M's when watching a sad movie, and more healthy raisins when watching a happy movie (Garg, Wansink, & Inman, 2007). Other studies have shown that threatening people's identity and ego increases consumption of indulgent foods (Baumeister, Heatherton, & Tice, 1993; Lambird & Mann, 2006). For example, people eat more treats after being socially rejected (Baumeister, DeWall, Ciarocco, & Twenge, 2005) or negatively stereotyped (Inzlicht & Kang, 2010). Similarly, football fans eat more indulgent foods after the narrow and unexpected defeat of their favorite football team (Cornil & Chandon, 2013).

Whether eating pleasure stems from the satisfaction of hunger or of urges triggered by food cues or emotions, a common aspect of visceral eating pleasure is that it can be reduced to its valence, that is, to a summary evaluation of how good it feels to eat. Research focusing on visceral eating pleasure adopts, to use Dube and Le Bel (2003)'s terminology, a “unitary” perspective whereby pleasure is not qualified or differentiated by the subjective quality of the food (e.g., its taste, its preparation, its origin) or by the whole eating experience (e.g., companionship, food rituals). Although people vary in what they consider comfort food (Wansink, Cheney, & Chan, 2003), some preferring sweet and other savory foods (Drewnowski, 1995), “visceral eating pleasure” is unitary in the sense that only counts the pleasurable relief from disagreeable sensations of hunger or cravings (Duncker, 1941; Loewenstein, 1996). More generally, this unitary perspective assumes that, as long as the valence is the same, the pleasure from eating can be substituted by the pleasure derived from any other hedonic or comforting experience. For instance, interventions based on humor and laughter have been suggested to curb emotional eating (Bast & Berry, 2014). Similarly, people exposed to pleasant food stimuli can satisfy their need for a reward by eating a hedonic food, but equally satisfy this need in non-food domains, such as making unplanned purchases of hedonic goods, getting a massage or receiving money (Briers, Pandelaere, Dewitte, & Warlop, 2006; Li, 2008; Wadhwa, Shiv, & Nowlis, 2008).

To summarize, visceral eating pleasure can be defined as the short-lived hedonic relief created by the satisfaction of eating impulses. Although hunger, external cues, and internal emotions, can all create visceral eating pleasure, given the relatively lower importance of hunger in today's rich societies, visceral eating tendencies are mostly driven by external food cues (external eating) or negative internal emotions (emotional eating). Finally, visceral eating has three important characteristics: (1) it is beyond eaters' volitional control, (2) it is the by-product of the satisfaction of an urge and it is therefore not an end in itself, and (3) it is a unitary phenomenon which can be summarized by its valence.

1.2. Epicurean eating pleasure

A long tradition in psychology and in philosophy suggests that there is a dichotomy (or at least a continuum) of pleasures: from visceral pleasures described earlier (also called “lower-order”, “sensuous”, “bodily” or “animal”) to what we call the “Epicurean” pleasures (also called “aesthetic”, “higher-order”, “refined”, “cognitive”, “reflected”, or “civilized”) (Alba & Williams, 2013; Annas, 1987; Brillat-Savarin, 1841; Dube & Le Bel, 2003; Duncker, 1941; Kormsmeier, 1999; Rozin, 1999). As we explain later in more details, we use the term “Epicurean” because it avoids the value or moral judgments associated with the other terms (e.g., “higher order”) and because it reflects the idea that this type of eating pleasure, unlike visceral eating, can be associated with eating in moderation. When applied to food, Epicurean pertains to both the evaluation of the sensory aspect of eating (e.g. the sensory experience of “gourmet” cuisine) and to the evaluation of its meaning (e.g. the cultural and symbolic associations with the food, where and how it was made).

In contrast to visceral pleasure, Epicurean pleasure cannot be captured simply by its valence in the sense that it cannot be separated from the differentiated facets of food experiences (Dube & Le Bel, 2003; Duncker, 1941; Rozin, 1999). For example, whereas the unitary view of pleasure would argue that a chocolate lava cake and a Chinese snow-skin mooncake are equivalent inasmuch as they equally relieve visceral eating drives, these two desserts involve extremely different Epicurean eating pleasures because they create contrasting sensory and symbolic experiences.

It was the Greek philosopher Epicurus who first distinguished between the “pleasures of the body” and the “pleasures of the mind” which are attained through a conscious, higher-order, process. This true Epicurean pleasure is not an automatic response to bodily urges; it is an end in itself. And by maximizing it, people achieve happiness (Annas, 1987). In his famous letter to Menoeceus, Epicurus described pleasure as “our first and kindred good, the starting point of every choice and of every aversion, and to it we always come back”. Somewhat confusingly, Epicurus also argued that the greatest pleasure comes from the absence of pain and trouble, not from the unbridled pursuit of indulgence. Here, we use the modern interpretation of Epicureanism as “involving the appreciation of fine food and drink” (Epicurean, n.d.), but it is important to stress that a common tenet of both the original and modern interpretation of Epicurean principles is that the pleasure of the mind is driven by moderation and introspection over bodily impulses (Brunschwig & Nussbaum, 1993).

The philosophical and moral conceptualization of taste and of gustatory pleasure has evolved since antiquity. Traditionally, philosophers considered the “bodily” senses of taste and smell as inferior, animal and impoverished (i.e., visceral) in comparison to the cognitive senses of vision and hearing. Kormsmeier (2009) reminds us that Aristotle despised the gustative pleasures pursued by ‘brutes’ and argued that beauty can only be apprehended by vision and hearing. In the 19th century, along with the development of culinary arts and the practice of “eating out” for pleasure (Warde & Martens, 2000), philosophical thinking started to consider taste as a cognitive sense that can be educated and refined, and to recognize that flavors are not just objects of simple, bounded sensations but have social and cultural meanings (Kormsmeier, 1999). For instance, Brillat-Savarin (1841) argued that, although both humans and animals sought the “pleasure of eating” to relieve their hunger, only humans could enjoy the “pleasures of the table”, which he defined as “a reflected sensation, originating in various facts, places, things and persons” and independent of hunger and appetites. As summarized by Kass (1994): “We eat as if we don’t have to, we

exploit an animal necessity, as a ballerina exploits gravity,” and in this way “an activity that is inherently ugly is beautified by graceful deed and tactful speech (...). An activity that deforms and dissolves living forms is given formality of its own by the work of the human intellect”.

Hence eating, and the kind of pleasure derived from it, can be an expression of civilization. For example, eating is a cultural ritual used in almost every religious or secular celebration to comment on the sacred or to solidify group affiliation (Mintz & Du Bois, 2002). Epicurean eating is also reflected in the refined pleasures of gastronomy and culinary cultures (Johnston & Baumann, 2007; Mennell, 1996). In sociology, Bourdieu (1984) interprets Epicurean eating pleasure as a “dominant aesthetic”, i.e. a form of taste acquired by people with higher cultural capital who have learned to appreciate French haute cuisine. The contemporary sociology of eating (Johnston & Baumann, 2007) has shown that any cuisine can create Epicurean eating pleasure as long as it focuses on authenticity (e.g. culinary reinterpretations of family meals and street foods, organic foods, fair trade food, “slow food”, etc.) or identity (e.g. ethnic cuisines). This democratization of Epicurean food enjoyment can be seen in the increasing popularity of food guides, magazines, blogs, websites, and television shows (Johnston & Baumann, 2014).

Until recently, behavioral research on eating, particularly the experimental kind conducted by consumer researchers and social psychologists, had mostly studied eating behavior in relation to impulses and self-regulation failures, leading to a focus on visceral pleasures. Alba and Williams (2013) explain it by the difficulty of capturing the differentiated facets of Epicurean pleasure in traditional experimental paradigms, compared to the simplicity of measuring the valence of visceral pleasure. Yet, early conceptualizations of pleasure in consumer behavior research adhered to the differentiated view of pleasure (Hirschman & Holbrook, 1982; Holbrook & Hirschman, 1982). Further, recent studies have examined how aesthetic factors contribute to the pleasure of eating (for reviews, see Krishna, 2012; Krishna & Schwarz, 2014; Spence, 2013). For example, studies have shown that color and presentation can increase the pleasure of eating by improving its aesthetic value (Hoyer & Stokburger-Sauer, 2012; Zellner, Loss, Zearfoss, & Remolina, 2014). Providing rich multisensory information about a food (as opposed to information about taste only) increases eating enjoyment (Elder & Krishna, 2010; Zampini & Spence, 2010). Information that gives meaning to the food (e.g., its country of origin or preparation) also influences the overall enjoyment of the eating experience, and not just its retrospective evaluation (Hoegg & Alba, 2007; Lee, Frederick, & Ariely, 2006; Wansink, Payne, & North, 2007). Epicurean pleasure can also be derived from eating rituals. Asking people to follow some simple rituals, such as how to unwrap a chocolate bar, improves the pleasantness of the eating experience (Vohs, Wang, Gino, & Norton, 2013). Similarly, mindful eating (paying attention to sensory and emotional responses when eating) improves the experienced and remembered enjoyment from eating while reducing impulsive eating (Hong, Lishner, Han, & Huss, 2011; Quoidbach, Berry, Hansenne, & Mikolajczak, 2010; Stroebe et al., 2013).

To summarize, Epicurean eating pleasure can be defined as the pleasure derived from the aesthetic appreciation of the sensory and symbolic value of the food. In contrast to visceral eating pleasure, Epicurean eating pleasure is (1) largely within people’s volition, (2) an end in itself (not the by-product of satisfying an urge) and (3) a differentiated phenomenon which cannot be summarized by its valence.

1.3. Pleasure, portion size preferences, and wellbeing

Both types of visceral pleasure tendencies, external eating and emotional eating, have been conceptualized as measurable personality dispositions and linked to obesity and overeating (Schachter & Rodin, 1974; van Strien et al., 1986). Likewise, incidental exposure to external sensory cues and negative internal emotions have been found to increase calorie intake (e.g. Cornil & Chandon, 2013; Fedoroff et al., 1997; Garg et al., 2007). As a consequence, visceral eating pleasures are typically perceived as an obstacle to healthy eating (particularly eating in moderation). For this reason, behavioral research in self-control which has tended to equate pleasure with its visceral type, has portrayed eating pleasure goals as incompatible with health goals (Belei, Geyskens, Goukens, Ramanathan, & Lemmink, 2012; Raghunathan, Naylor, & Hoyer, 2006; Shiv & Fedorikhin, 1999). For example, it recommends that people increase their self-control and make healthier choice by removing food cues from their environment (Stroebe et al., 2013), by regulating food-related emotions (Evers, Stok, & de Ridder, 2010; Giuliani, Calcott, & Berkman, 2013), or by satiating their desire to eat (Larson, Redden, & Elder, 2014; Morewedge, Huh, & Vosgerau, 2010). Although these recommendations can be effective in the short term, they have been criticized on the ground that they increase eating anxiety (Coveney, 2006) and reduce eating enjoyment and food wellbeing (Block et al., 2011).

In contrast, a few studies have suggested that Epicurean eating pleasure can promote moderation without negatively impacting eating enjoyment and food wellbeing. As Epicurus wrote in the *Letter to Menoecus*, “A wise person does not simply choose the largest amount of food but the most pleasing food” because, he argued, the greatest pleasure comes from moderation. This hypothesis has been validated by research showing that happiness and psychological wellbeing depend less on the accumulation of undifferentiated pleasures than on the ability to savor distinct pleasurable experiences, particularly the smallest, most mundane ones (Dunn, Gilbert, & Wilson, 2011; Jose, Lim, & Bryant, 2012; Quoidbach & Dunn, 2013; Quoidbach et al., 2010).

Cross-cultural studies also support the idea that Epicurean pleasure can be an ally of eating moderation. Portion sizes and obesity rates are both lower in cultures which strongly value the aesthetics and cultural dimensions of eating, like France and Japan (Rozin, 2005; Rozin, Kabnick, Pete, Fischler, & Shields, 2003; Rozin, Remick, & Fischler, 2011; Rozin et al., 1999). For example, Wansink, Payne, and Chandon (2007) observed that, in these Epicurean pleasure-oriented cultures, people pay less attention to external signs of satiation (such as stopping to eat when the plate is empty or when the television program is finished).

One of the reasons why Epicurean eating pleasure can lead to portion size moderation is that it leads to more mindful food decisions and it improves awareness of sensory-specific satiation. Because of sensory-specific satiation, there is no “accumulation” of pleasure with each bite. Instead, sensory pleasure peaks at the first bite and declines with each additional bite (Rolls, Rolls, Rowe, & Sweeney, 1981). As pleasure does not “accumulate”, over-indulging in large quantities of hedonic foods can in fact decrease overall pleasure (Garbinsky, Morewedge, & Shiv, 2014). In a series of experiments conducted by Cornil and Chandon (2015), people who vividly imagined the multisensory pleasure of eating (the taste, the smell, the texture in mouth of hedonic foods) were better able to expect eating enjoyment to peak with smaller portions and to decline with larger portions. They found that multisensory imagery made people choose a smaller portion of a chocolate cake while anticipating more pleasure (compared to a control group).

2. Study

2.1. Overview

The objective of the study is to refine our understanding of the concept of Epicurean eating pleasure and how it differs from visceral eating pleasure. We develop and test a scale of people's tendency to experience and value Epicurean eating pleasure, compare Epicurean and visceral eating pleasure tendencies (measured using the established scales of external eating and emotional eating), and examine the association of these scales with portion size preferences (measured via a new scale), subjective wellbeing, and other important eating traits such as restrained eating and health worries. We also examine the role of BMI and demographic differences in gender, age, education and income.

Drawing on existing research reviewed earlier, we posit that Epicurean eating tendencies will be associated with a preference for smaller food portions, while visceral eating tendencies will be associated with a preference for larger portions. We expect Epicurean tendencies to be independent of restrained eating tendencies or health worries and to be associated with higher wellbeing.

2.2. Scale development and pre-testing

We started with a pool of 29 items for Epicurean tendencies and 22 items measuring portion size preferences. All these items are affirmations about the self, measured on Likert scales anchored from 1 (totally disagree) to 7 (totally agree). We wrote the self-affirmation items of the Epicurean scale to reflect the different dimensions of food aesthetics: the judgment of value of food sensations (e.g. “More than other people, I value the look, the smell, the taste, the texture in mouth of foods”) and the judgment of value of food as a symbol (e.g. “There is a lot of beauty in food”, “Cooking is a major form of art, similar to music or painting”). For the portion size preference scale, we chose affirmations that directly measure individual preferences for supersizing (e.g. “One regular serving of food never seems to be enough to satisfy me”) as well as opinions about the food environment such as “Portion sizes in family restaurants have grown too large” (reverse coded).

We presented the pool of questions to seven judges to assess the comprehension of the items and their feedback to reduce the list to 23 items for the Epicurean scale and 18 for the supersizing preference scale. These judges were administrative staff of a European university and were fluent in the language of the survey (average age: 45, 86% female). We then examined the item reliability in a pre-study, for which we recruited 265 adult Americans via ads posted on an online marketplace (Amazon Mechanical Turk), chosen for its wide demographic diversity and general representativeness of the US population, except for a slight overrepresentation of women and younger and more educated people (Paolacci, Chandler, & Ipeirotis, 2010). More importantly, dozens of studies have shown that people recruited on Amazon Mechanical Turk provide remarkable response consistency over time, but also truthfulness when providing self-report information (Paolacci & Chandler, 2014). This initial survey lasted approximately seven minutes and the respondents were paid \$0.80. We analyzed the results using exploratory factor analyses and selected the ten best items for the Epicurean tendencies scale and for the supersizing preference scale.

2.3. Method

For the main study, we recruited 250 adult Americans via another ad on Amazon Mechanical Turk. This study lasted approximately 10 min and the respondents were paid \$0.90. We

made sure that they had not participated in the pre-study and verified that they were living in the United States by checking their IP addresses. We randomized the order in which the items of each scale were presented and asked the participants to complete the following scales in that order.

We started with the two new scales measuring Epicurean eating pleasure tendencies and preferences for supersizing. We then administered the 10-item external eating subscale of the Dutch Eating Behavior Questionnaire (DEBQ, van Strien et al., 1986), which measures responsiveness to external food cues such as sight and smell, regardless of the internal state of hunger or satiety (e.g. “If you see or smell something delicious, do you have a desire to eat it?”). We then administered the 13-item emotional eating subscale of the DEBQ questionnaire, which measures eating in response to negative emotions (e.g. “Do you have a desire to eat when you are approaching something unpleasant to happen?”, “Do you get the desire to eat when you are anxious, worried, or tense?”). Finally, we administered the 10-item restrained eating subscale of the DEBQ questionnaire, which measures dieting tendencies or attempts to reduce calorie intake (e.g. “Do you try to eat less at meal times than you would like to eat?”, “Do you watch exactly what you eat?”).

To measure health worries we used the 3-item scale developed by Rozin et al. (1999), which comprises items such as “I rarely think about the long-term effects of my diet on health” (reverse-coded item). We measured general wellbeing with the short version of the Oxford Happiness Questionnaire (Hills & Argyle, 2002), which comprises eight items such as “I am well satisfied about everything in my life” or “I feel that life is very rewarding”. Finally, we asked the participants to indicate their age, gender, income, highest diploma, and weight and height (to compute their body mass index).

2.4. Construct validity

We first conducted an exploratory factor analysis of the 20 items of the two new scales (Epicurean and Portion size) to determine their factor structure. A principal component analysis (PCA) found two factors with eigenvalues superior to one. Seven items measuring Epicurean tendencies loaded on the first factor and six items measuring supersizing preferences loaded on the second factor. Interestingly, the seven items of the Epicurean scale loaded a single factor, although they reflected different dimensions of food aesthetics (i.e. food sensations and food meaning). This indicates that people who experience and value the sensory aspects of Epicurean eating pleasure also value their cultural meaning, suggesting that Epicurean eating is a unidimensional construct. The remaining three items of the Epicurean pleasure scale and four items of the portion size preference scale failed to load on any of the two factors (loadings inferior to 0.50) and had low item–total correlations. We eliminated these items, resulting in a 7-item Epicurean eating pleasure tendencies scale, and a 6-item supersizing preference scale (see Table 1).

We conducted another PCA on the 13 retained items. This PCA yielded two factors with eigenvalues superior to 1. As shown in Table 1, all the items loaded on the correct factor and their loading were all superior or equal to 0.5. Cronbach's alpha was 0.86 for Epicurean tendencies scale, and 0.75 for the preference for supersizing scale.

To examine whether Epicurean eating tendencies are distinct from visceral eating tendencies, we conducted a confirmatory factor analysis with the seven-item Epicurean Eating scale shown in Table 1, the 10-item External Eating Scale, and the 13-item Emotional Eating scale. We estimated a model with the three correlated constructs via maximum likelihood using Amos 19.0 (Arbuckle, 2010). The goodness of fit scores were within the

customary range ($\chi^2(59) = 5110$, RMR = 0.09, GFI = 0.79, AIC = 5228, BIC = 5436). The correlation between the latent Epicurean eating scale and the external and emotional eating scales was only 0.30 and 0.14, respectively. In contrast, the correlation between external and emotional eating was 0.63. To estimate the discriminant validity of the Epicurean eating tendency scale, we conducted another confirmatory factor analysis assuming that all the items were indicators of a single latent variable. As expected, the fit of this model was considerably worse ($\chi^2(56) = 6012$, RMR = 0.25, GFI = 0.57, AIC = 6124, BIC = 6321). The reduction in fit was statistically significant ($\chi^2(53) = 902$, $p < 0.001$).

Table 2 provides demographic data about the sample of respondents and shows how demographic variables relate to the key constructs in the study. Gender was the only demographic variable significantly associated with the Epicurean eating tendencies scale, with women scoring higher than men ($p < 0.04$). Epicurean eating tendencies were equally distributed across age, income, education, and BMI levels. In contrast, external and emotional eating increased with BMI. Compared to Epicurean eating tendencies, visceral eating tendencies were more strongly influenced by income, but less strongly by education. Finally, preference for supersizing was stronger for men ($p < 0.001$) and marginally lower among respondents with a lower level of education ($p = 0.08$).

2.5. Predictive validity

The results reported thus far show that Epicurean eating tendencies are distinct from visceral eating tendencies (external and emotional eating). We now compare the associations between these constructs and the key variables of interest: preference for large food portions and wellbeing. We also examine their relationship with health worries and restrained eating, two key eating traits in the literature. To achieve this objective we estimated a structural equation model with seven latent variables using AMOS 19.0 (Arbuckle, 2010). Table 3 provides the correlations between the seven latent constructs and the p -values. We obtained similar results when estimating a structural equation model treating preference for supersizing and wellbeing as two dependent variables.

As expected, Epicurean eating tendencies were negatively correlated with supersizing preferences, indicating that people who score high on epicurean eating prefer smaller food portions. In contrast, preferences for supersizing were strongly correlated with external eating and positively correlated with emotional eating, indicating that visceral pleasure eating tends to be associated with a preference for larger food portions. Finally, both restrained eaters and people who worry about their health tended to prefer smaller food portions.

The expected contrast between Epicurean and visceral eating tendencies was also found when looking at wellbeing, which was significantly positively correlated with Epicurean eating tendencies but strongly negatively correlated with both external and emotional eating. In addition, wellbeing was negatively correlated with supersizing preferences and negatively correlated with restrained eating.

3. Discussion

In our view, the “visceral” perspective on eating pleasure which highlights its impulsive and negative characteristics should be complemented by a more comprehensive and positive “Epicurean” perspective. Whereas the visceral perspective views eating pleasure as the consequence of impulses driven by external and emotional factors and which can be summarized by its valence, the Epicurean perspective highlights the rich aesthetic (i.e. sensory and

Table 1
Exploratory factor analysis results.

Factor	F1	F2
Epicurean eating tendency		
If I try, I can clearly and easily imagine the taste of many dishes.	0.77	0.19
My friends say that I am a foodie.	0.74	0.03
Cooking is a major form of art, similar to music or painting.	0.74	0.08
I like to discuss the taste of food with my friends	0.71	0.18
There is a lot of beauty in food	0.70	0.16
I can easily find the words to describe the taste of many foods.	0.70	0.16
More than other people, I value the look, the smell, the taste, the texture in mouth of foods.	0.68	0.28
Preference for supersizing		
I often wish I had the option to choose smaller portions in restaurants (R).	−0.28	0.71
Portion sizes in family restaurants have grown too large (R).	−0.21	0.69
One regular serving of food never seems to be enough to satisfy me.	−0.13	0.66
It is important that the quantity of food on my plate matches the price I am paying.	−0.12	0.63
Even when hungry, I prefer a smaller meal with intense flavors over a larger meal with less intense flavors (R).	−0.40	0.56
A meal consisting entirely of small dishes is less enjoyable.	−0.23	0.49

Note. Items marked by "R" were reverse scored in the analysis. The factor analysis was a principal-components analysis (PCA) using eigenvalues greater than 1 as the extraction method.

Table 2
Descriptive statistics and association with key constructs.

	N	Epicurean eating ^a	Supersizing preference ^a	External eating ^b	Emotional eating ^b
Full sample	251	4.70 ± 1.10	3.80 ± 1.05	3.26 ± 0.64	2.45 ± 0.90
Sex					
Men	99	4.53 ± 1.05	4.33 ± 0.87	3.23 ± 0.59	2.35 ± 0.88
Women	152	4.81 ± 1.57	3.46 ± 1.02	3.28 ± 0.67	2.52 ± 0.91
<i>p</i>		0.04	<0.001	0.47	0.13
Household Income					
<\$30 K	72	4.65 ± 1.02	3.97 ± 1.03	3.21 ± 0.66	2.63 ± 0.95
\$30 K–\$60 K	88	4.68 ± 1.07	3.77 ± 1.08	3.17 ± 0.62	2.32 ± 0.86
>\$60 K	81	4.81 ± 1.16	3.72 ± 1.05	3.43 ± 0.62	2.49 ± 0.90
<i>p</i>		0.61	0.31	0.02	0.10
Education					
No college degree	100	4.53 ± 1.11	3.99 ± 1.02	3.19 ± 0.66	2.34 ± 0.89
Some college	40	4.91 ± 1.05	3.68 ± 0.98	3.39 ± 0.52	2.57 ± 0.92
College or higher	111	4.78 ± 1.09	3.68 ± 1.08	3.29 ± 0.66	2.51 ± 0.9
<i>p</i>		0.11	0.08	0.22	0.27
Age					
<25	68	4.73 ± 1.22	3.99 ± 0.89	3.21 ± 0.73	2.32 ± 0.88
26–35	102	4.71 ± 1.02	3.79 ± 1.12	3.33 ± 0.63	2.57 ± 0.93
36–49	46	4.77 ± 1.09	3.65 ± 1.07	3.26 ± 0.53	2.39 ± 0.79
>50	35	4.52 ± 1.10	3.70 ± 1.09	3.19 ± 0.62	2.46 ± 0.97
<i>p</i>		0.75	0.34	0.56	0.33
Body Mass					
Normal weight	109	4.57 ± 1.16	3.76 ± 1.06	3.04 ± 0.59	2.06 ± 0.75
Overweight	70	4.90 ± 1.00	3.75 ± 0.92	3.42 ± 0.60	2.60 ± 0.75
Obese	69	4.69 ± 1.10	3.94 ± 1.15	3.45 ± 0.66	2.94 ± 1.00
<i>p</i>		0.13	0.45	<0.001	<0.001

Note: Values are means ± SD. Labeled means in a column without a common letter differ ($p < 0.05$; Post-hoc tests with a Bonferroni correction).

^a Measured on a 1–7 scale.

^b Measured on a 1–5 scale. P-Values based on ANOVAs.

symbolic) facets of eating pleasure, the role of individual volition in acquiring and refining this pleasure, and the importance of taking into account the source and not just the valence of these pleasures.

After reviewing studies supporting the Epicurean perspective on eating pleasure, we have focused on two particularly important aspects in which the visceral and Epicurean perspectives yield

Table 3
Correlation between latent constructs and P-values.

	Epicurean eating		Supersizing preference		External eating		Emotional eating		Restrained eating		Health worries		Wellbeing	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>P</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
Supersizing preference	−0.14	0.03												
External eating	0.25	<0.001	0.21	<0.001										
Emotional eating	0.13	0.04	0.15	0.02	0.59	<0.001								
Restrained eating	0.06	0.31	−0.15	0.02	0.13	0.04	0.22	<0.001						
Health worries	0.1	0.1	−0.25	<0.001	−0.05	>.5	−0.09	0.15	0.49	<0.001				
Wellbeing	0.19	<0.01	−0.13	0.04	−0.18	<0.01	−0.35	<0.001	−0.14	0.02	0.13	0.04		
BMI	−0.01	>0.9	0.13	0.05	0.23	<0.001	0.38	<0.001	0.12	0.06	−0.06	0.31	−0.33	<0.001

opposite predictions: portion size preferences and overall well-being. Prior research has documented the negative effects of visceral pleasure (e.g., external eating and emotional eating) on overeating (e.g. van Strien et al., 1986) and overall wellbeing (e.g. Coveney, 2006; Stroebe et al., 2013). Drawing on research on mindful eating, we argue that Epicurean eating pleasure should be associated with eating moderation and increased wellbeing (e.g. Papies, Barsalou, & Custers, 2012; Quoidbach et al., 2010; Rozin, 2005).

We have developed a new scale measuring the individual tendency to value Epicurean eating pleasures and tested its validity compared to the established external eating and emotional eating DEBQ sub-scales, which we used as measures of visceral eating tendencies. Unlike visceral eating tendencies, we found Epicurean eating to be unrelated to BMI, income and diplomas, but associated with gender (being more prevalent among women). This suggests that, contrary to prior hypotheses (Bourdieu, 1984), money and education are not necessary to be an Epicurean.

Our key result is that preferences for large food portions are negatively associated with Epicurean eating tendencies but positively associated with visceral eating tendencies. Another important result is that Epicurean eating tendencies (unlike external or emotional eating) are positively associated with psychological wellbeing. Although restrained eating and tendencies to worry about health are also associated with preferences for smaller portions (just like Epicurean tendencies), these constructs are independent of Epicurean tendencies. Restrained eating also has the disadvantage of being negatively correlated with wellbeing.

3.1. Implications for future research

Our study underlines the pitfalls of the ‘moralization’ of pleasure in food research (Askegaard et al., 2014), a tendency that existed well before obesity started to become a major public health issue. Historical analyses of the moral and philosophical perspectives on food and taste (Coveney, 2006; Korsmeyer, 1999) remind us that the pleasure of eating has been associated with bodily intemperance and gluttony since antiquity. This focus on the visceral aspect of eating pleasures gave rise to the belief that eating moderation must be externally imposed on our pleasure-seeking bodies through strict moral guidelines about what is “right” and “wrong” to eat. In line with this tradition, contemporary behavioral research has tended to focus on how to tame pleasure-seeking, overlooking the notion that food pleasure has aesthetic layers that have an appeal beyond mere bodily sensations (Askegaard et al., 2014). In contrast, the Epicurean perspective suggests that pleasure may in fact facilitate moderation and wellbeing. For this reason some researchers advocate a paradigm shift from “food as health” to “food as wellbeing”, and call for research to give a more holistic and positive role to taking pleasure in food (Block et al., 2011).

One fruitful area for future research would be to re-examine the issues of food neophobia and picky eating from the perspective of Epicurean eating pleasure (as opposed to a purely visceral eating perspective), especially among children. Much research has scrutinized the role of parental practices, social influence and personality traits, and has shown that parental pressure to consume novel food may result in its rejection by children (Dovey, Staples, Gibson, & Halford, 2008). This literature tends to view eating pleasure as a major obstacle to the adoption of novel foods because it focuses on visceral dimensions (the rejection of novel and unrewarding tastes). In contrast, the Epicurean perspective suggests that focusing on the aesthetic dimensions of eating (e.g., by highlighting the novel aspect of the multisensory experience beyond just the taste valence or the rituals and symbols associated with the food), could be an effective approach. In fact, the adoption in Western

cuisine of hot chili pepper, unsweetened dark chocolate, or tofu shows that viscerally aversive or even irritant foods can become pleasurable once people have learned to appreciate their aesthetic qualities (Rozin, 1999). In practice, teaching children how to identify and discriminate between different tastes can be an efficient way to fight food neophobia (Reverdy, Chesnel, Schlich, Köster, & Lange, 2008). More subtle solutions include increasing the visual appeal of novel or healthy foods (Zellner et al., 2014). In Japan, for example, bento lunchboxes are made up of multiple foods aesthetically arranged (known as *kawaii*) with deep symbolic meaning (Allison, 1991), reflecting the Epicurean perspective.

Obviously, culture is a strong determinant of people's natural tendency to appreciate the aesthetic facets of food pleasure. For instance, France's gastronomic culture has a long history that systematically and socially values the pursuit of culinary creativity, which continues to influence even everyday eating practices (Ferguson, 1998). However, cultures are not immutable, and future research should compare Epicurean eating tendencies across cultures, and further investigate socioeconomic differences.

To conclude, eating pleasure needs not be the enemy of healthy eating. Self-regulation and appeals to health, which decrease Epicurean eating pleasure and wellbeing, are not the only ways to promote moderation. We need to continue to shift the paradigm of behavioral food research from “food as health” to “food as wellbeing” (Askegaard et al., 2014; Block et al., 2011).

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