



Short communication

“Is this a meal or snack?” Situational cues that drive perceptions

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ABSTRACT

What determines whether a person perceives an eating occasion as a meal or snack? The answer may influence what and how much they eat on that occasion and over the remainder of the day. A survey of 122 participants indicated that they used food cues (such as the food quality, portion size, perceived healthfulness, and preparation time) as well as environmental cues (such as the presence of friends and family, whether one is seated, and the quality of napkins and plates) to determine if they were eating a meal rather than a snack. Implications for dieters and for health professionals are provided.

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Introduction

How do people determine whether an eating occasion – such as an afternoon reception or a visiting a fast food drive-through – qualifies as a meal or a snack? Their calorie-relevant answer could influence not only what and how much they eat, but whether they decide to eat again later that day.

An early examination of this issue was conducted by Douglas (1975). She claims a key driver in meal/snack perception is whether a “mouth-entering” utensil is used. Although this may have been more diagnostic in more traditional situations, the increased prevalence of fast food – most of which is eaten by one’s hands – blurs this meal-snack distinction. Still, people have specific mental schemas for meals and snacks (Pliner, Bell, Meiselman, Kinchla, & Martins, 2004; Pliner & Zec, 2007). For instance, when participants were asked to eat in meal-like environment (e.g., using a tablecloth), they tended to use meal-related words such as “lunch” or “dinner” – to describe their experience.

Whether a person interprets a particular eating experience – such as a late afternoon reception – as a meal or a snack could influence immediate and subsequent consumption quality and quantity (Gatenby, 1997; Longnecker, Harper, & Kim, 1997; Oltersdorf, Schlettwein-gsell, & Winkler, 1999). Research examining environmental factors influencing immediate and subsequent eating occasions is typified by Kerver, Yang, Obayashi, Bianchi, and

Song (2006). They show that people who skip a meal, but eat multiple snacks, eat more calories of less nutritious food than those only eating three meals. While snacking typically occurs in the home, workplace, or school, other situations – such as receptions and parties – can be more ambiguous. This ambiguity could influence what and how much people eat, and whether they decide to eat again later that day. Although environmental cues can influence food consumption, this study explores people’s interpretation of which situational and environmental cues lead to classifying a food as a meal or snack. Such an interpretation could influence food intake over the course of a day (Pliner & Zec, 2007; see also Pliner & Martins, 2002). For instance, if circumstances at the aforementioned reception lead a person to interpret the event as a meal (instead of a snack), they may eat more than if they had viewed it as a snack. However, they may eventually end up consuming fewer total calories across the entire day, because they will not go and eat a full dinner compared to those who coded the reception as a snack. Furthermore, given that there are substantial social and cultural norms associated with specific meal types (e.g., DeCastro, 1997), we will explore which elements might be most associated with the perception of a meal or a snack.

Methods

To initially determine the range of situation- and meal-related characteristics that might lead a person to perceive a particular food as either a snack or a meal, seven structured interviews were conducted with students and staff ranging from 19 to 58 years old. Based on research related to environmental interpretation (see Yeh & Barsalou, 2006, for a review) the interviews were structured to

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explore a wide range of cues that people may use as diagnostic when assessing eating episodes as a snack or meal.

The 22 non-duplicative cues elicited were generally grouped as being environmentally-based or as being food-based. A questionnaire was designed to ask participants to rate the extent to which each of the 22 cues (11 matched pairs) such as eating with family versus eating alone and high versus low quality of foods was associated more with a snack or with a meal (1 = snack; 9 = meal). One hundred-twenty-two college students were presented with the questionnaire and were provided class credit for completing the study. The cues were presented in two randomized orders. The study had Institutional Review Board approval, and participants were treated in accordance with American Psychological Association guidelines. Participants' informed consent was obtained upon the arrival of the interview.

Results

The average age of the 122 participants was 19.2 (18–25), their average BMI was 22.8 (15.8–40.9), and 38.5 percent were female. We conducted a series of paired samples *t*-tests to compare each participant's rating for each paired cue to determine when each of those cues would lead them to perceive an eating occasion as more of a meal or as more of a snack.

Table 1 illustrates that environmental cues had a pronounced impact on the meal–snack interpretation. Eating episodes were more likely to be viewed as meals if the person was eating with their family versus eating alone (8.04 vs. 4.04; $t(119) = 22.10$, $P < .001$) and if they were sitting versus standing (6.57 vs. 2.36; $t(120) = 17.95$, $P < .001$). In addition, a 30-min eating episode was more likely to be viewed as a meal than a 10-min eating episode (7.55 vs. 3.34; $t(120) = 20.80$, $P < .001$). Interestingly, dinnerware also provided an important cue. An eating episode was more likely to be seen as a meal if it involved ceramic versus paper plate (7.45 vs. 4.36; $t(119) = 15.24$, $P < .001$) or cloth versus paper napkins (7.94 vs. 4.60; $t(121) = 16.62$, $P < .001$).

The general nature of the foods being served also impacted the meal–snack interpretation. Eating episodes were more likely to be viewed as meals if the food was high versus low quantity (7.32 vs. 3.05; $t(119) = 18.17$, $P < .001$) and in large versus small portions (7.62 vs. 3.21; $t(120) = 16.81$, $P < .001$). Furthermore, general quality of the food was also important. An eating episode was more likely to be seen as a meal if it involved high versus low quality (7.46 vs. 3.13; $t(119) = 22.07$, $P < .001$). Because we did not assess how participants defined the quality of the food, we assumed that quality generally means how well the food is prepared. Indeed, consistent with this assumption, eating episodes were more likely to be viewed as meals if the foods were prepared versus packaged

(6.72 vs. 3.69; $t(121) = 13.18$, $P < .001$), and expensive versus cheap (7.66 vs. 3.62; $t(118) = 19.52$, $P < .001$).

Furthermore, healthy foods versus unhealthy foods were more likely to be viewed as meals (6.17 vs. 3.59; $t(121) = 9.31$, $P < .001$). Although we did not assess how participants defined healthy foods, we used the literature to generally note that healthy foods involve vegetables and fruits whereas unhealthy foods involve more caloric foods such as pizza and hamburgers (e.g., Oakes, 2003; Oakes & Slotterback, 2001, 2002). Vegetables were viewed as more meal-related than starches (7.02 vs. 5.74; $t(120) = 7.42$, $P < .001$), but meat was viewed as even more meal-related than vegetables (7.38 vs. 7.02; $t(119) = 2.55$, $P = .012$).

Last, in addition to exploring situation- and meal-related cues, exploratory questions were also asked regarding how moods might play a role in determining the meal–snack assessment. Happiness was more likely to be perceived as meal (5.68) than boredom (5.68 vs. 3.12) or impulsiveness (2.80), $t(121) = 11.61$, $P < .001$, and $t(121) = 14.09$, $P < .001$, respectively.

Discussion

There are several environmental and food cues that influence whether people perceive a particular food or eating occasion as a snack or a meal related. For environmental cues, eating with family is the strongest indicator of a meal, whereas standing was the strongest indicator of a snack. Across all variables, the environmental profile of a meal would involve eating with family for 30 min while sitting, using ceramic plates, and cloth napkins. In contrast, the profile of a snack would involve eating alone for 10 min while standing, using paper plates and napkins.

For food cues, quality food was most strongly associated with a meal, whereas low quality food was most strongly associated with snack perceptions. Across all of the examined variables, the food profile of a meal would include large portions of expensive high quality food that is prepared and healthy. In contrast, the food profile of a snack would be inexpensive, low quality food in small portions that was packaged and unhealthy.

Whether a person perceives an eating occasion as a meal or a snack may influence what and how much one eats, and whether they decide to eat later (Pliner & Zec, 2007). Changing the cues associated with an eating occasion could thereby have several implications for dieters, health professionals, and even caterers. For example, serving a food off a ceramic plate with cloth napkin could lead a person to code a light snack as a meal, thereby, reducing the likelihood of a later meal.

The present study is limited in that we did not measure the actual food intake of participants as a function of the meal–snack assessment. Additionally, we did not assess mediating factors that

Table 1
Cues that drive perceptions of meals vs. snacks^a.

	Meal-related perception (SD)	Snack-related perception (SD)	<i>t</i> -Value (<i>P</i> -value)
Environmental cues			
Eating with family vs. eating alone	8.04 (1.10)	4.04 (1.56)	22.10 (<.001)
Cloth vs. paper napkins	7.94 (1.41)	4.60 (1.98)	16.62 (<.001)
30 min vs. 10 min	7.55 (1.31)	3.34 (1.81)	20.80 (<.001)
Ceramic vs. paper plates	7.45 (1.61)	4.36 (1.54)	15.24 (<.001)
Sitting vs. standing	6.57 (2.21)	2.36 (1.32)	17.95 (<.001)
Food cues			
Expensive vs. inexpensive food	7.66 (1.37)	3.62 (1.67)	19.52 (<.001)
Large vs. small portion	7.62 (1.73)	3.21 (1.78)	16.81 (<.001)
High vs. low quality	7.46 (1.20)	3.13 (1.39)	22.07 (<.001)
High vs. low quantity	7.32 (1.50)	3.05 (1.45)	18.17 (<.001)
Prepared vs. packaged food	6.72 (1.98)	3.69 (1.74)	13.18 (<.001)
Healthy vs. unhealthy food	6.17 (1.97)	3.59 (1.78)	9.31 (<.001)

^a 1 = snack; 9 = meals.

could influence the assessment. For example, we did not examine how a wide variety of food might lead to a meal perception because meals generally involve more than one dish whereas snacks typically involve only one type of food. Similarly, we did not examine if participants were more likely to perceive hot foods as meal-related because meal is often served at hot temperature whereas snacks are served at cold temperature.

Given that obesity is one of the most important public health issues (Hedley et al., 2004), an improved understanding on how we perceive food as a meal or a snack can be key in helping obese people eat less and more healthfully. This study identifies cues that can be investigated in more detail by researchers, and which can be used by health professionals, health-conscious hosts, parents, and dieters to possibly modify how much one eats during a potentially ambiguous dining situation.

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