

Antecedents and Mediators of Eating Bouts

Brian Wansink*
Assistant Professor
Amos Tuck School
Dartmouth College
Hanover, NH 03755

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Antecedents and Mediators of Eating Bouts

Abstract

Understanding eating bouts is of both theoretical and practical importance. Two questions are examined here: 1) What stimulates eating bouts? and 2) What influences how much food will be consumed during such a bout? The results from a survey of 178 adults suggest that eating episodes that involve 3 times as much of a particular food as that person would typically consume during that time period are considered by most people to constitute an “eating bout.” These eating bouts can be stimulated by internal cues (such as moods or cravings) or by external cues (such as the visual salience fo the food). In general, eating bouts that are stimulated by internal cues are perceived as being less reasonable, less healthy, less enjoyable, and they leave a person feeling more guilty, lonely, and depressed. Furthermore, it was found that when an eating bout is stimulated by external cues, the food’s nutritional value, versatility, and perishability will influence how much he or she eats. In contrast, when an eating bout is stimulated by internal cues, these factors will not influence how much is eaten. The educational implications of these findings are then discussed.

Dramatic increases in the consumption volume of a food are referred to as eating bouts. Such bouts involve everything from soup and oranges to cookies and ice cream, and they appear to influence the consumption patterns of nearly all households. Because of this, understanding them is of both theoretical and practical importance. To this extent, this paper addresses two questions: (1) What stimulates eating bouts? and (2) What influences how much food will be consumed during such a bout?

Irregularities in one's consumption rate of a particular food are common (Logue 1991). Some irregularities can be attributed to a particular situation or occasion (such as weddings, holidays, vacations, and dinner parties), and still others can be attributed to seasonality and availability. This paper focuses on eating bouts which occur typical, every day circumstances. In doing so, it makes three key contributions: First, it suggests theoretical and empirical distinctions between those eating bouts that are stimulated by internal cues versus those that are stimulated by external cues. Second, it identifies food-related factors -- such as nutritiousness, substitutability, price, and perishability -- that mediate the volume of food consumed during an eating bouts. Third, it presents a useful theoretical framework and provocative empirical findings that can aid in nutrition education.

After describing prior research in this area, an eating bout framework is presented and hypotheses are generated. These hypotheses are then tested with a cross-sectional questionnaire that examines the circumstances surrounding the eating bouts of 178 adults, including the antecedents and consequences of these eating bouts. The results and the implications for consumer education are then discussed.

EATING BOUTS

Eating bouts are distinguished from “binging,” in that they are not pathological in nature (Herman and Polivy 1984). That is, they do not represent a dysfunctional or habitual behavior (Logue 1991). An “eating bout” refers to a time period in which a particular food is consumed in a much greater volume than is the norm for that individual (Herman and Mack 1975). One way to objectively characterize the intensity of an eating bout is by comparing the volume of food consumed with the volume of food that individual typically consumes in a similar time period (Berry, Beatty, and Klesges 1985).

Dividing the volume of food consumed during the eating bout by the amount generally consumed during that time period provides a ratio of consumption intensity. For instance, if an eating bout involved three times the volume of food that a person would generally consume in that same time period, this ratio of consumption intensity would be 3.0. This unit-free ratio enables comparisons to be made across foods that could not be made if we only examined consumption volume (Kidder 1980). That is to say, the units of measurement between ice cream, potato chips, cake, or pizza are very different. Therefore, a unit free measure of comparison is needed. The other advantage of using this ratio is that it is sensitive to each individual’s specific consumption norms. That is, eating a pint of ice cream in one afternoon might represent a three fold increase for a light user but it may be considered typical for a heavy user.

Though a basic hunger drive can obviously initiate an eating bout (Bloch 1978; Logue 1991), the boundary model of consumption (Herman and Polivy 1984) argues that the point at which a person is hungry, and the point at which he or she is full, are both very flexible and wide-ranging (Sunday, Sanders, and Collier 1983). Unless one is physically stuffed with food, he or she can still “make room for some more,” particularly in the case of foods containing sugar (Ferber and Cabanac 1987; Berry, Beatty, and Klesges 1985; Denton 1982). As a result,

although hunger plays a significant physiological role in food consumption, there are other important non-physiological that also influence eating bouts. That is, if one had simply eaten because they were hungry, they would have not eaten to the point where they would have considered that eating episode to constitute an eating bout.

THE CUES THAT STIMULATE EATING BOUTS

A distinction between internal and external cues is used to explain differences in what motivates people to eat (Schachter and Gross 1968). A series of studies was conducted in the late 1960s showed that external cues such as food visibility, the number of highly palatable food cues present, the time of day, can all cause a person to consume more food (Nisbett 1968; Schachter and Gross 1968). These studies implied a dichotomy between internal and external control of feeding (cf. Schachter, Goldman, and Gordon 1968).

In reality, there is likely to be a joint relationship between internal and external cues (Rodin 1981). That is, a person would not respond to external cues if he or she did not already have an internal predisposition (such as some degree of hunger). Nevertheless, it is important to realize that these two cues probably have very unequal effects. In a particular situation, one may dominate the other.

Reported Reasons Why Eating Bouts Occur

It is interesting to speculate as to whether consumers tend to attribute their eating bouts to internal cues or with external cues. To examine this, a small exploratory study was conducted with 33 female staff members at a northeastern college. The women were between 25 and 55 years of age and had a heterogeneous educational background. Although no questions were asked about weight, height, or bone structure, these women appeared to represent a typical cross-section of heights, weights, and bone structures for that geographical area. They were told they

would be asked a number of questions involving “home economics-related questions.” They were then asked to complete questionnaires which asked them what factors they believed stimulated one of their recent eating bouts and what stimulated an eating bout of friend or family member. The order in which they were either asked about themselves or about others was randomized.

The attributions made about these eating bouts are noted in Table 1. In general, eating bouts that were stimulated by the visual or aromatic salience of the food can be considered to be externally-stimulated, whereas eating bouts stimulated by one’s mood state, craving for the food, hunger, and so on can be considered to be internally-stimulated. It is interesting to note that they perceived internal cues to be the cause of the eating bouts of others, but they perceived their own eating bouts to be more externally-cued ($X^2 = 5.2$; $p < .05$). This suggests that while two family members can split what remains of a cake, each may attribute different reasons as to why they ate it and as to why the other person did.

Insert Table 1 About Here

Internal Cues. Internal cues represent self-generated needs in that one evokes the food to salience without the aid of any external cues, such as the presence of the food itself (Schachter 1971). Research by Kirkley, Burge, and Ammerman (1988) and Herman and Polivy (1984) suggests that when eating bouts are stimulated by internal cues, these bouts may frequently be associated with strong negative emotions (such as depression, boredom, or loneliness). This is consistent with the findings in Table 1. Other internal cues that are noted in Table 1 are ones that are not attributed to emotions, per se, but are instead attributed to a “craving” or hunger one had for the food. Past research has suggested that once a satiation point has been reached, “hunger” is not a primary motivator of consumption volume (Berry, Beatty, Klesges 1985). The data are

consistent with this, for very few individuals mentioned hunger to be the factor behind either their own eating bout (9%) or behind the eating bout of others (3%).

External Cues. External cues such as the visual or aromatic prominence of the food can also make a food salient (Schachter 1971). Although externally-cued eating bouts necessitate some degree of attraction to the target food (Rook and Hoch 1985), one issue is whether they are distinct from internally-cued eating bouts (Schachter, Goldman, and Gordon 1968; Rodin 1981). Given the frequency with which externally-cued reasons were reported in Table 1, and given the frequency which we hear attributions being made to the salience of external cues in everyday conversations, there does appear to be empirical justification for investigating it. These externally-cued eating bouts are the type that are stimulated when one walks past cookies on the table or sees half of a cake on a counter. In effect, people claim to eat this food “because it’s there.” In such cases, it seems unlikely that there is a powerful premeditated drive to consume this food; it is simply convenient and visually or aromatically salient. In effect, it is salient because of recent exposure, and not necessarily because one made a conscious attempt to actively evoke it to salience (Schachter 1971; Rook and Hoch 1985).

How Do Internally-cued and Externally-cued Eating Bouts Differ?

Recall that internally-cued eating bouts are frequently associated with strong negative emotions. It tends to be these emotions that increase the volume of food that is eaten past the point where it simply satisfies hunger to the point where the person considers it an eating bout. Externally-cued eating bouts do not have these powerful emotions associated with them. Although they are by no means rational or reasonable in terms of being premediated, they are likely to be perceived as more reasonable than internally-cued eating bouts simply because they have less emotion associated with them.

H₁: When an eating bout is stimulated by an internal cue, a person will perceive it as less reasonable than if it were externally-cued.

This hypothesis is important because it suggests that a person whose eating bout is stimulated by an internal cue may be less likely to take the price or nutritional value of the food into account when deciding how much of a food he or she will eat. This also has implications for one's perceptions about themselves. If internally-cued eating bouts are seen to be less reasonable than externally-cued ones, they should also generate a greater degree of guilt.

H₂: When an eating bout is stimulated by an internal cue, a person will feel more guilty about having been involved with it than if it were externally-cued.

What Influences How Much a Person Eats?

It has been suggested that the strength of a person's motivation to consume a food determines the volume of food he or she ultimately consumes (Nisbett 1968). Internally-cued eating bouts are likely to characterize this more intense level of motivation since they necessitate that the food be evoked from memory, and they frequently necessitate that the person locate and open the food (it may not be as convenient as being "on the table"). As a result, when an eating bout with a particular food is stimulated by internal cues, the related needs are likely to be so strong as to temporarily negate rational cost/benefit considerations. The volume of food consumed by a person will thus be unaffected by certain characteristics of the food. As a result,

H₃: When an eating bout has been stimulated by an internal cue, the volume of food consumed will be . . .

H_{3a}: Uncorrelated with the food's perceived nutritional value

H_{3b}: Uncorrelated with the food's perceived perishability

H_{3c}: Uncorrelated with the food's perceived substitutability

H_{3d}: Uncorrelated with the food's perceived price

In contrast, eating bouts that are externally-cued may be perceived by a person as relatively more reasonable (H₁). If this is true, a food that is perceived to be of high nutritional

value, or relatively inexpensive, perishable, or which is a convenient substitute for another foods is likely to be eaten in greater quantities than foods with opposite characteristics. As a result, we should expect . . .

H4: When an eating bout has been stimulated by an external cue, the volume of food consumed will be . . .

H4_a: Positively correlated with the food's perceived nutritional value

H4_b: Positively correlated with the food's perceived perishability

H4_c: Positively correlated with the food's perceived substitutability

H4_d: Negatively correlated with the food's perceived price

METHODOLOGY

The objectives of this study are (1) to determine how internally-cued eating bouts may be distinct from externally-cued eating bouts, and (2) to determine the extent to which the volume of food consumed during these eating bouts is altered by food-related factors such as nutritional value, perishability, substitutability, and price.

Respondents and Procedure

Respondents were recruited through seven New England Parent Teacher Associations (PTAs). Involvement in this study served as a fundraiser for these PTAs as six dollars was donated to the respective organization for each member who participated in the study. Each PTA managed their own recruitment: Notes were sent home with children and follow-up phone calls were made by selected members. In all correspondence with the parents, they were simply told that we were interested in their experiences with different home economics issues. A total of 212 respondents participated. Seventy-two percent of the respondents were between the ages of 30 and 45, 63 percent were female, and 62 percent were employed outside the home. All but three had completed high school, and 32 percent had completed college. Through visual inspection, it was determined that all but three of the respondents were within a range of what could be considered a normal weight range for their height and their frames. Although it would have been optimal to have weight, height, and body-type measures, this was not feasible.

Respondents were met in groups of 11 to 19 at the respective schools where their PTA met. They were asked to take alternate seats, and they were given a closed packet of materials containing a cover sheet of instructions and a number of consecutively-labeled booklets. The respondents were told they were going to answer a variety of questions that dealt with issues ranging from home economics issues to questions about how they spent their leisure time.

Each respondent was then instructed to turn to the booklet containing the questionnaire about their consumption habits. Upon opening the 19 page booklet, they read the following:

Many of us go through short periods of time when we eat a particular food more frequently than we usually do. We are interested in getting a better understanding of a recent experience which you had after going on such an eating bout for a particular food. Think carefully about your experience for a few moments and then answer the questions on the next page. If you cannot recall the last time you went on such an eating bout, please continue to the next booklet.

What initially prompted you to start eating this food more frequently than you normally do?

Respondents were given a full page in which to answer these questions. Following this, they were asked the kind of food they ate, how much they ate, and how many times they normally ate this food in this time period (Kirkley, Burge, and Ammerman 1988).

Measures

Respondents were then asked to respond on a 9-point semantic differential scale (1 = bad; 9 = good) as to whether they thought eating this food during this particular occasion was bad--good; foolish--wise; unreasonable--reasonable; appropriate -- inappropriate (Rook 1987). The correlation matrix of these four variables provided a Cronbach's alpha (.941) that was high enough to merit this measure of attitude to be analyzed as the average of the four scale items (Nunnally 1967). Measuring food on these dimensions is consistent with past survey research on foods (Stemple and Wesley 1988; Kidder 1980; Gormally, Black, Daston, and Rardin 1982). This construct will simply be referred to as "reasonableness" in subsequent discussions.

Following these attitude measures, respondents were asked specific statements about their beliefs about different characteristics of the food (such as its nutritional value, its substitutability with other products, its perishability, and its price), about circumstances surrounding the eating bout (such as the accessibility of the food and its inventory level), and about feelings they associated with the eating bout. All of these questions involved a specific statement that the respondent answered by circling the appropriate response on a 9-point Likert

scale (1= strongly disagree; 9 = strongly agree). Last, basic demographic measures were taken regarding their family size, age, and education. It took most people approximately 35 minutes to complete this 19-page booklet.

Although questions related to height, weight, and bone structure were included in the pilot study, they were not permitted in the main study. It was believed, however, that heights and weights would be normally distributed across the respondents and would not provide a systematic sampling concern. This group did not appear atypical for what would be expected from this population.

RESULTS

Overview

Out of the 212 respondents, 41 percent reported that their eating bout involved a sweet food, 29 percent reported their eating bout involved a salty food, and 16 percent reported eating a dairy-related food (typically ice cream). The remaining 14 percent of respondents mentioned a variety of foods from casseroles to fruit.

The average consumption volume involved in these eating bouts was 3.1 times their typical daily consumption volume for that food. This figure is important because it represents a self-defined benchmark as to what an individual believes constitutes an eating bout. This ratio ranged from 2.3 to 4.0, and did not vary systematically across the different food types.

These questionnaires were coded by two judges ($\alpha = .87$) to determine whether an eating bout had been internally-cued or externally-cued. Consistent with the descriptions of internal and external cues given earlier in the paper (see also Table 1), 27 percent of the eating bouts were coded as being externally-cued and 65 percent as internally-cued. Six disagreements were resolved through discussion with one of the authors. The remaining eight percent of the questionnaires noted situation motivations (such as “It was my son’s birthday”) and were eliminated from further analysis along with 17 questionnaires which had not been fully

completed. Three, for instance, had noted that they had not been involved in an eating bout. The remainder of the analyses were conducted on the 178 fully-completed questionnaires. There were no differences in the the types of foods that were eaten during these two bouts.

How Do Internally-cued and Externally-cued Eating Bouts Differ?

It was stated in H₁₋₂ that internally-cued eating bouts would be perceived as less reasonable than externally-cued eating bouts and would generate a greater degree of guilt. These were both confirmed in Table 2. Respondents having internally-cued eating bouts perceived their eating of the foods as being less reasonable than those whose eating bouts were externally-cued. The significance of these differences was confirmed when an ANOVA¹ was conducted on ratings of whether the respondents considered that eating the food was “Unreasonable” ($F_{1,177} = 4.5, p < .05$). These respondents were also likely to feel more guilty after this eating bout ($F_{1,177} = 4.4, p < .05$). These differences were consistent across the four different categories of food (salty foods, sweet foods, dairy-related foods, and other).

Insert Table 2 About Here

Table 2 indicates there are other important differences between internally- and externally-cued eating bouts. Eating bouts that are categorized as internally-cued were not only perceived as less reasonable, but when compared to externally-cued eating bouts they were also perceived to be less healthy ($F_{1,177} = 4.6, p < .05$), less enjoyable ($F_{1,177} = 3.6, p < .05$), and they often involved larger volumes of food ($F_{1,177} = 5.1, p < .05$). These differences existed even though the foods eaten during internally-cued eating bouts eaten during the two types of bouts were identical.

It is also worth noting that after being involved in an internally-cued eating bout, not only did people feel relatively more guilty but they also felt relatively more lonely ($F_{1,177} = 3.7, p < .05$) and

¹ A series of ANOVAS were conducted across a number of key dependent variables, and demographic data and product-type dummy variables were included as covariates. Because these variables proved to be insignificant as covariates, they were not included in subsequent analyses (Winer, 1971).

more depressed ($F_{1,177} = 3.5, p < .05$). In addition, they also rated these foods as memorable of their childhood ($F_{1,177} = 3.4, p < .05$) and as similar to the foods they liked as a child ($F_{1,177} = 3.6, p < .05$).

What Influences How Much a Person Eats?

In H_{2a-d} it was hypothesized that when an eating bout is stimulated by an internal cue, perceptions of the food's nutritional value, perishability, substitutability, and price will not influence how much a food a person eats. The results in Table 3 partially support these hypotheses. Three of these four variables were uncorrelated with how much food was eaten. The exception is one measure of the food's nutritional value ("The food is less fattening") which was statistically significant at the .05 level ($r = -.26$). A second measure of nutritional value ("The food is nutritious"), however, was statistically insignificant.

In contrast to this, it was hypothesized in H_{3a-d} that the volume of food eaten during externally cued eating bouts would be positively related with that food's perceived nutritional value, its perishability, and its substitutability, and negatively related with its price. This hypothesis was generally supported. People ate more of the foods they viewed as either nutritional, perishable, or substitutable ($p < .01$). As shown in Table 3, the correlation between nutritional value and consumption volume averaged .42 (.41 and .44), the correlation between perishability and consumption volume averaged .32 (.26 and .39), and the correlation between substitutable and consumption volume averaged .61 (.70 and .51). It is likely that this correlation with perishability would have been even higher if not for the fact that these foods tended, in general, to not be very perishable, thus restricting the variance.

Insert Table 3 About Here

The perceived price of the food was not significantly correlated [$r = -.34$ and $-.37$; $p > .10$] with one's consumption volume. This may be because the price of food is relatively inexpensive, or it may be because the decision-buying process and the usage process are very distinct. Consumer behavior research suggests that considerations of price tend to be isolated to the purchase occasion, but not to usage occasions (Blattberg and Neslin 1990; Monroe 1983). That is, price may have an impact on one's choice of a nonperishable item at the grocery store -- but it may be forgotten or ignored as a sunk cost once the food has been purchased and has sat in the cupboard for a period of time.

DISCUSSION AND IMPLICATIONS

What Stimulates Eating Bouts and Influences the Amount Consumed?

Broadly speaking, eating bouts are stimulated by external cues (such as visual or olfactory salience) and by internal cues (such as moods, boredom, or hunger). In essence, the food becomes salient because it is either seen or smelled, or because it is evoked from memory. Although it is not argued that these two cues are mutually exclusive or they they always operate distinctly, they are associated with important differences. Eating bouts that are categorized as internally-cued are perceived as being less reasonable, less healthy, less enjoyable, and they often involved larger volumes of food. Following these eating bouts, people reported that they felt guilty, lonely, and depressed. Do internally-cued eating bouts directly lead to these feelings? The answer is unclear since these feelings probably existed prior to the eating bout. What is important to realize is that feelings were not eliminated by the eating bout. That is, if the bout was intended to eliminate these feelings, it was not successful.

Not only are these cues related to different attitudes and consumption volumes, they are also related to whether food-related factors will influence how much a person eats. If the eating bout is internally-cued, the volume of food a person eats tends to be unrelated to the nutritional

value, price, substitutability, or perishability of the food. In contrast, if an eating bout is externally-cued, a person is more likely to take these factors into account . . . with the exception of price. Although a food's price had no impact on consumption volume of externally-cued eating bouts, this is not surprising. Prices can influence one's choice in the grocery store, but they have less of an impact on decision making once the food has been purchased and is in the kitchen.

It is interesting to note that people tended to characterize the consumption of a food as an "eating bout" when it involved approximately three times (3.1) as much of that food as they usually consume. This may prove to be a useful benchmark for future research in this area.

Limitations and Future Research Opportunities

These studies provide insights that help us better understand some of the factors that influence eating bouts. An appropriate starting point for this research was to build a model of eating bouts that accounts for the circumstances under which they are stimulated. Although the model presented here incorporates both internal and external cues, the goal of this research was not to examine the relationship between these two cues. These two sets of cues may operate independently, interactively, or in serial. Regardless of the exact relationship, these findings indicate these two different cues each have dramatically different associations.

Eating bout intensity has been defined here as a ratio of the volume of food consumed in a particular time period divided by the typical volume of that food that the person consumes in that time period. How large must this ratio be before it qualifies as an eating bout? Defining a value for this ratio would not only be food-specific, but it would also be dependent on one's consumption variance of that food. In this study, the average ratio -- across all types of foods -- was 3.1. At this evolutionary stage in eating bout research, it is best if we provide broad parameters for eating bouts, and let these bouts be self-defined by the respondents whom we examine. We must, however, be aware of the limitations associated with self-report measures.

A field study in which variables such as external cue salience were manipulated (instead of measured) would be valuable. Nevertheless, identifying “internal cues” will still be difficult, and may still necessitate self-reports.

It is interesting to speculate whether certain individuals have a tendency to be drawn to either internally-cued or externally-cued bouts. In the future, measures of weight, height, and body type might be useful in helping determine if these factors can explain the intensity of these bouts. In addition, various psychological characteristics have recently been associated with compulsiveness (O’Guinn and Faber 1990), and these characteristics might help identify the types of people who are predisposed to being influenced by either internal or external cues. Furthermore, the responsiveness to external cues could involve one’s responsiveness salience that has been generated through a conversation, a recipe, or an advertisement. These different forms of external stimuli can be the focus of laboratory studies which can examine the degree to which they influence consumption across different psychological profiles of consumers.

IMPLICATIONS FOR EDUCATION

No presumption is made in this paper as to whether eating bouts are good or bad -- too much depends on the food and on the person. It is clear, however, that when one feels depressed after an eating bout and claims not to have enjoyed the food (see Table 2), an education program may help them either manage their expectations or modify their behavior. This becomes even more important when we realize such bouts tend to involve over 3 times one’s typical consumption of that food.

The first step to helping consumers manage their eating bouts is to promote an awareness of those specific factors which can stimulate eating bouts. People need to be made aware that eating bouts can simply be stimulated by the visual salience of a food. To minimize externally-stimulated eating bouts, consumers should be encouraged to make food less available and less

visually salient. In other words, keeping a food on the table or counter, or in the front of the refrigerator or freezer all by guarantees that it will not remain there for long. Furthermore, people must realize that a food will also be highly salient to them depending on how recently it was eaten (Baker, Hutchinson, Moore, and Nedungadi 1986). This is true regardless of whether the food sits on the counter or is buried in the freezer.

To minimize internally-stimulated eating bouts, such as those stimulated by moods and cravings, it is important to inform consumers about the consequences of such eating bouts. Not only are they likely to enjoy the food less, but they are also likely to feel guilty for eating it, and they are likely to eat a relatively large volume of it. Realizing that such bouts do nothing to eliminate one's feelings of loneliness or depression may help a person avoid them. Furthermore, it is also important that people realize that once these eating bouts begin, they do not appear to be guided by reason and they often continue until that product is depleted from inventory. Although it seems obvious that, "If it's not around, you won't eat it," the obviousness of this solution does not compromise its 100 percent effectiveness.

SUMMARY

Although eating bouts are self-defined and vary across individuals, it is interesting to note that people tended to characterize the consumption of a food as an "eating bout" when it involved approximately three times as much of that food as they usually consume. Furthermore, it was found that eating bouts that are characterized as being internally-cued exhibit important differences from those that are externally-cued. Even though they involve identical foods, internally-cued eating bouts are perceived as being less reasonable, less healthy, less nutritious, and less enjoyable. They also leave a person feeling more guilty, more lonely, and more depressed. This also has an impact on the volume of food one eats. If a person is internally motivated to consume a food, the food's price, nutritional value, substitutability, and

perishability have no effect on how much will be eaten. Perceptions of these factors only influence how much one eats when the food is externally-cued.

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TABLE 1:
Reported Reasons for Why an Eating Bout Occurs

<u>Reported Reason</u>	<u>Number (and %) of Sample Mentioning Reason (of 33):</u>	
	<u>Speculation about Others</u>	<u>Self-Report of Oneself</u>
<u>Internal Cues</u>		
Affect (i.e., Love the food, had a craving for it, tastes great, etc.)	22 (67%)	19 (58%)
Mood (i.e., Depressed, lonely, anxious, angry, etc.)	19 (58%)	8 (24%)
Hungry (i.e., Starving, had not eaten)	3 (9%)	1(3%)
<u>External Cues</u>		
Salience/Convenience (i.e., It was around/sitting out, wanted to finish it up, it was convenient, etc.)	16 (48%)	11 (33%)
Fresh smell	1 (3%)	3 (9%)
<u>Miscellaneous Cues</u>		
Situational	7 (21%)	0 (0%)

* Note that respondents were able to mention more than one reason. Most individuals did mention multiple reasons when speculating about others, but they frequently mentioned only one reason when reporting about their own behavior.

(i.e., Birthday, guests, holiday)

TABLE 2:**How Internally-cued and Externally-cued Eating Bouts Differ**

Variable	EATING BOUTS		
	Internally-Cued (n=131)	Externally-Cued (n=47)	
<u>Consumption Intensity</u> (Volume consumed)÷(Typical volume consumed)	3.4	>*	2.1
<u>Perceptions of the Eating Bout</u>			
“Eating the food was reasonable” ¹	4.5	<*	5.6
“Eating the food was healthy”	4.4	<*	5.4
<u>Perceptions of the Food</u>			
“The food is nutritious”	3.3	<*	4.9
“I enjoyed the food”	3.9	<*	5.7
<u>Self-perceptions Following the Eating Bout</u>			
“I felt guilty after eating the food”	5.7	>*	4.2
“I felt lonely after eating the food”	4.9	>*	2.8
“I felt depressed after eating the food”	4.4	>*	2.9
<u>Food-related Associations</u>			
“The food reminded me of my childhood”	5.2	>*	3.3
“The food reminded me of foods I liked as a child”	5.0	>*	3.4

¹ Information about the characteristics of the product or the situation in which it was consumed were measured on a 9-point Likert scale (1= Strongly Disagree; 9 = Strongly Agree).

* p < .05.

TABLE 3:

**Product-Moment Correlations Between
Food Perceptions and Consumption Volume**

FOOD PERCEPTIONS	CORRELATIONS			
	AGGREGATE (n= 178)	Internally-Cued Eating Bouts Only (n=131)	Externally-Cued Eating Bouts Only (n=47)	
<u>Perceived Perishability</u>				
It becomes stale quickly	-.06		-.17	.26*
It loses flavor once opened		.10	-.19	
	.39**			
<u>Perceived Substitutability</u>				
I can eat it instead of other foods	.12	.11		.70**
I can eat it in a variety of situations	.18		.22	.51**
<u>Perceived Price</u>				
I never considered the price	-.05		-.21	-.37
Didn't matter how much I paid	-.04		-.16	-.34
<u>Perceived Nutritional value</u>				
The food is nutritious	-.05		-.24	.41**
The food is less fattening	-.04		-.26*	.44**

* p < .05

** p < .01

