



Demonstrations of the influence of the eating environment on food acceptance

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In two independent demonstrations, pre-prepared food was served in different environments: first, identical prepared meals were served in both a training restaurant and in a student cafeteria; second, a prepared main dish was served in a food science laboratory class, and as part of an entire meal in two student cafeterias and in a training restaurant. In the training restaurants and in the student cafeterias, people selected and paid for their meals. The acceptability ratings of the food served varied across the three different environments in the following order: restaurant > laboratory > cafeteria. Differences in acceptance were attributed to contextual effects and the expectations they produce, actual product differences, and a number of possible covariates. Ratings of sensory attributes tended to mirror the acceptability effects. The difficulty of comparing contexts within actual food service systems is discussed.

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Introduction

The environment in which food is selected and consumed is an important factor in its acceptability, choice and consumption. Environment or context is identified as a factor in models of food choice and acceptance (Bell & Meiselman, 1995; Gains, 1994; Rozin, 1996; Shepherd & Sparks, 1994), but environment *per se* has been the study of very few published research reports. An exception to this was the research conducted on mechanisms of obesity in the 1960s–1970s. This research included studies conducted in natural eating environments (Levitz, 1975; Meyers *et al.*, 1980; Stunkard & Kaplan, 1977; Stunkard & Mazer, 1978), but the majority of studies were conducted in the laboratory (Nisbett, 1972; Schachter & Rodin, 1974). More recently, the social and physical variables which contribute to environmental effects have been the subject of increased attention (Bell & Meiselman, 1995; Marriott, 1995; Meiselman, 1996; Mennel *et al.*, 1992; Rozin & Tuorila, 1993).

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The impact of environment is interesting both methodologically and theoretically. Methodologically it affects the way we test food products and conduct research. Although it is a widely held opinion in consumer research that products should be tested in the environments in which they will be used, few food products are tested in the actual environment in which the food is normally selected and consumed. Most food testing is conducted in laboratories, but controlled experiments can pose problems in predicting whether consumers will actually choose or consume the product in real-life situations (Helleman & Tuorila, 1991; Meiselman, 1992). The issue of context is also interesting from a theoretical standpoint. While models of food choice behavior include context, there is no consistent organization of contextual variables or effects. The discussion within this paper should add to achieving a consistent organization and language for contextual effects. By context (or environment or situation), I refer to all of the variables in a particular eating occasion. For example, the context of a first-class restaurant includes a particular level of food quality and service, as well as levels of price, decor and the type of customers one would expect to find in such establishments. By location, physical characteristics of the eating environment are meant. For example, in first-class restaurants the

location would be characterized by physical characteristics of size, space, color, noise, light, brightness, etc.

Conceptually, there are two different ways of demonstrating context effects, and these involve the basic units of the eater, the food, and the location. Ideally, in an experiment one would hold two of these constant and vary the third. However, this is very difficult in practice because the eater and the location tend to co-vary. That is, different people tend to eat in different locations. People who eat in factory cafeterias or student cafeterias do not tend to eat in first-class restaurants. Therefore, it is not easy to feed the same people the same food in different locations. The purpose of the studies reported here is the direct comparison of the acceptability of the same food in different contexts, by holding the food constant and varying the context.

In the first demonstration, the same food was served and rated in both a training restaurant and a student dining center at Bournemouth University, U.K. In the second demonstration, data on the same foods were collected in three different types of eating environments at East Carolina University, U.S.A.: food science laboratory classes, a student training restaurant, and campus student dining centers. The two studies used different foods and different settings; they were entirely independent studies. We believe that the effects observed despite these differences are due to the robustness of contextual influences.

The basic hypotheses were as follows: (1) the same food served in different settings would result in reliably different ratings; and (2) the ratings would produce

a consistent rank order of the settings in terms of acceptability.

Method

Bournemouth University, U.K.

The same pre-prepared foods were used in two locations, a training restaurant called The Grill Room, and the student refectory or cafeteria. The similarities and differences between the settings, the customers and the foods are shown in Table 1. Subjects were recruited at the meal by being asked to fill out questionnaires on the food that they had freely selected. They were told that we were conducting a food survey, and they appeared to accept that simple explanation. It was decided that it would not be possible to ask personal questions about age, height, weight, etc., because these were typical customers in businesses and they would not expect such questions. Foods were selected by Bournemouth University staff for their suitability for the British diet and for their suitability to both testing settings. The products were fully-cooked institutional-sized tinned (canned) foods prepared for use by the U.S. military. The following foods were offered: main dishes—beef and green pepper stew, and beef casserole, starches—diced potato and boiled rice, desserts—chocolate mousse and apple dessert. Other food options were available for diners in both locations, hence, we were dependent on the customer selecting

Table 1. Characteristics of the different settings used in the two studies

	Bournemouth University		East Carolina University		
	Grill room	Refectory	Training rest	Food science lab	Cafeterias
<i>Setting and Service</i>					
Style of service	Restaurant	Cafeteria	Restaurant	Laboratory	Cafeteria
Waiter/self service	Waiter	Self service	Waiter	Laboratory	Self service
Level of formality	White table cloth/ carpeting	Bare table	Table cloth/ carpeting	Bare table	Bare table
Pay for food	Cash	Cash	Cash	No	Cash or meal card
Located at University	Yes	Yes	Yes	Yes	Yes
Regular meal time	Yes	Yes	Yes	No	Yes
Food stations	None	Multiple	None	None	Multiple
<i>Customers</i>					
Students	No	Yes	No	Yes	Yes
Local middle-aged Population	Yes	No	Yes	No	No
Recruited for survey at the meal	Yes	Yes	Yes	No	Yes
Number	18	32	18	89	112
<i>Foods</i>					
Is there day to day menu change?	Yes	Yes	Yes	No	Yes
Is there daily menu choice?	Yes	Yes	No	No	Yes
Did customers have a choice?	Yes	Yes	No	No	Yes
Aware of menu before meal	No	No	Yes	No	No

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