FOOD QUALITY: RELATIVITY, CONTEXT AND CONSUMER EXPECTATIONS

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ABSTRACT

Food quality is a complex concept that is frequently measured using objective indices related to the nutritional, microbiological, or physicochemical characteristics of the food or in terms of the opinions of designated experts. However, when food quality is defined in terms of 'degree of excellence' none of these measures serve as adequate indices of food quality. The argument is presented that food quality is a consumer-based perceptual/evaluative construct that is relative to person, place and time and that is subject to the same influences of context and expectations as are other perceptual/evaluative phenomena. It is further argued that the measurement construct that comes closest to being an adequate index of food quality is that which has come to be called 'consumer acceptability.'

RELATIVITY TO THE CONSUMER

Food quality can be considered both the most well-defined and the least well-defined concept in the food industry today. The difference depends upon who is defining it and the level at which it is measured. If you were to ask any food scientist, e.g. nutritionist, food technologist, microbiologist, etc., 'What constitutes good quality in a food and how does one measure it?', the answer you get will be direct and unqualified. It will be an answer that is based on years of accumulated knowledge within the scientist's research discipline and will likely include a battery of standardized, instrumental tests to quantify food quality. Similarly, if you read a sampling of titles from papers published in such journals as Journal of Food Quality, Journal of Food Science, or Food Technology, you will be convinced that most food scientists have very clear, discipline-dependent definitions of what constitutes good nutritional quality, microbiological quality, textural quality, etc. in a food. Unfortunately, food scientists represent only a small percentage of people concerned with food quality. The remainder are consumers—the people whose definition of food quality drives the economy of the global food industry. Yet, it is precisely the consumer's definition of food quality about which we know the least and which we are most challenged to quantify.

One of the major difficulties associated with the definition and measurement of food quality is that it is a relative concept. It is relative not only to who is doing the evaluation, but to a wide range of situational and contextual factors. However, this relativity is inherent in the term quality. Webster's dictionary defines quality as 'the degree of excellence which a thing possesses.' However, the word excellence is also a relative term, defined by Webster as 'surpassing goodness.' In turn, goodness is defined as 'better than average.' Obviously, there are no absolutes in the definition of the concept of quality; neither are there any absolutes in the concept of food quality. It is a concept that is relative to person, place and time. In spite of this fact, I believe that food quality can be defined and that measures can be developed to quantify it. What is critical is that these measures are made relative to a referent that has construct validity, and of which the essential element is the consumer.

The notion that food quality must be defined and measured from the consumer's perspective can be traced to the earliest attempts to establish a scientific discipline related to food. In volume 1 of The Food Journal, published in 1870, a paper appeared by H. Clarke in which the basic proposition was put forth that food quality is a relative concept that is inappropriate for evaluation by anyone other than the average consumer of that food. Clarke wrote about a visit to a large metropolitan hospital where there had been complaints about the food:

'At length we came to the scene of discontent, and we asked for grievances. Then we confronted some, who, mutton chops in hand were forced to own that the meat was good. On being asked why they objected, they said it was on account of another patient, to whom we applied. His answer was that the meat was not of prime quality; and on being pressed, it turned out he was a journeyman butcher.'

Clarke continued his discourse on the relativity of food quality by introducing the term acceptability into the argument:
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'A gentleman who will cheerfully eat a tin of preserved meat on a sea voyage, will on shore make out some plea for its not being a prime or acceptable article. Those to whom an article is truly acceptable, are those who cannot get anything at all so good' (Clarke, 1870).

Although it was apparent to Clarke and others as early as 1870 that food quality is a relative concept, grounded in the perceptions of the average consumer and closely allied with the concept of acceptability, the field of food science ignored this proposition for nearly a hundred years. In its place developed a system for evaluating food quality based on experts' judgments. Wine tasters, tea tasters, and other 'silver palates' became the arbiters of food and beverage quality. As food science became a more rigorous discipline, this elitist notion of food quality persisted in the form of commodity grading standards and the use of highly trained inspectors. Later still, standards and inspectors were replaced by seemingly more objective, instrumental tests—measures that many of today's food scientists continue to confuse with valid measures of food quality. Of course, it is not only natural scientists who have misdirected their search for food quality. Many scientists who deal in human sensory judgments have also failed to appreciate that the essence of food quality is to be found in consumer responses, not the responses of expert, technical and/or trained sensory panelists. While the latter may be effective in judging perceptual differences from a pre-established standard of quality, they cannot serve as arbiters of what we commonly mean by the term 'food quality.'

Only during the past 20 years has the field of food science (and sensory evaluation) come to recognize that, whether taken individually or together, nutritional quality, microbiological quality, chemical stability, expert opinion, etc. are inadequate measures of what the consuming public views as food quality. Instead, we now see a refocusing of the definition of food quality in terms of consumer perception (Mrak, 1970; Steenkamp, 1986; Cardello & Maller, 1987; McNutt, 1988; Civille, 1991) and, even more directly, consumer acceptance (Weisman, 1971; Sidel et al., 1983; Fishken, 1990; O'Mahony, 1991; Cardello, 1995a). For certainly, it is not the nutrient content of food that is important to food quality. Rather, it is the perception of its nutritional value by the consumer that is important. The recent shifts in consumer opinions about the quality of such products as oat bran cereals and margarine are clear examples of this fact. Similarly, it is not the 'objectively' measured microbiological or chemical safety of food that is important to quality; rather, it is the perceived safety by the consumer that is critical. A current example is the reluctance of many consumers in the U.S. to purchase irradiation-sterilized and bioengineered foods. I view it to be a misguided notion of food quality that contends that a highly nutritious, shelf-stable and convenient product is of high quality when it is disliked by consumers, due to its taste or any other characteristic. Similarly misguided is the notion that a common table wine can be devoid of quality when it is widely purchased and heartily enjoyed by average consumers.

A DEFINITION OF FOOD QUALITY

With the above facts in mind, we can begin to formulate a working definition of food quality. One popular definition comes from a USDA Marketing Workshop Report cited by Gould (1977). It reads 'the combination of attributes or characteristics of a product that have significance in determining the degree of acceptability of the product to a user'. Although this is a reasonably satisfactory definition, it falters by placing emphasis on the 'attributes or characteristics' of the food itself, rather than on the perception or acceptability of those characteristics. For that reason, I prefer the use of a definition of sensory quality provided by Galvez and Resurreccion (1992): 'the acceptance of the perceived characteristics of a product by consumers who are the regular users of the product category or those who comprise the target market.' The extension of this definition of sensory quality to food quality requires only that the phrase 'perceived characteristics' be interpreted to include the perception of all characteristics of the food, not simply its sensory attributes, i.e. the perception of its safety, convenience, cost, value, etc. Having done so, this definition embodies three critical aspects of food quality: (1) it uses the consumer as the referent, (2) it focuses on acceptability as the key measurement construct, and (3) it connotes the relativity of judgment reflected in the qualifying concepts of 'product category' and 'target market.'

The paradigm shift to a consumer-based definition of food quality moves its measurement realm from the physical to the psychological. This shift can be problematic for those who view food quality as if it were an inherent characteristic of the food itself. One can make the analogy between the perception of food quality and the perception of an object's color. Although the surface of an object has the physical properties of reflecting specific wavelengths of light, the color perceived by the observer is also a function of the spectrum of incident light (which we may consider as part of the general context in which the object is viewed) and the observer's perceptual system (state of color adaptation, color anomalies, etc). Moreover, colors are rarely perceived singularly (except, perhaps, in certain Ganzfeld experiments). Rather, they are viewed within a situational context of adjoining objects and contiguous colors. As such, they are subject to influence by color contrast phenomena that further contribute to the perceived color, making it even more dissimilar to the
reflectance spectrum of the object itself. Just as Hunter color values taken in a laboratory cannot predict the apparent color (let alone your *preference* for the color) of an object in the real environment, instrumental measures of food cannot predict food quality. In order to *understand* food quality one must understand the psychology of food acceptance, choice and consumption. In order to *measure* food quality, one must account for the context in which food is presented and eaten, and the psychological factors that influence contextual and relative judgments.

**THE ROLE OF CONTEXT IN FOOD QUALITY**

Since there are no food-related stimulus conditions comparable to those in a visual Ganzfeld (with the possible exception of certain flow conditions in taste and odor psychophysics), it is safe to conclude that all foods are perceived within a context. This context may be established either by factors that are physically and concurrently present with the food object or by factors that are antecedent to it. [Rozin and Tuorila (1993) have referred to the former factors as 'simultaneous' while labeling the latter factors 'temporal.'] Each of these factors may also be subcategorized as being food or nonfood-related. Food-related simultaneous factors include other foods and beverages served/eaten coincidentally with the food of interest, while nonfood factors might include the social setting, ambient conditions, or other aspects of the dining environment.

Food-related temporal factors encompass all foods and beverages recently consumed, while nonfood temporal factors subsume such variables as time of day or season of year. The important role of contextual factors in both the perception of food and its acceptance by consumers has been documented in numerous studies. Rozin and Tuorila (1993) have recently reviewed this literature and their treatment of it attests to the breadth and significance of these contextual effects on food.

As defined herein, food quality is a psychological construct. It is both perceptually based and evaluative. As such, it is subject to the same contextual effects as other perceptually based phenomena. For example, the judged quality of a fast food meal, eaten while one is out during a day of shopping with the children, will be far different than the judged quality of that same meal if served at a restaurant in a luxury hotel. Similarly, the perceived quality of a meal of poached eggs, toast, cereal and juice may be quite high when served at breakfast, but that same meal may be perceived as quite poor if served at dinner. Such contextual effects as these have been discussed by Schutz (Schutz *et al*., 1975; Schutz, 1988, 1995) within the theoretical frame-

work of ‘situational appropriateness.’ In his analysis, consumer liking (preference) for a food combines with the perceived appropriateness of the food for that situation to determine overall acceptance. In the present analysis, food quality is taken to be conceptually equivalent to consumer acceptance and is, therefore, susceptible to the influences of situational appropriateness.

Although contextual variables that are physically present with the food are more easily identified, temporal factors, especially those mediated through learning and memory, can have profound and long-lasting effects on the perception of food and food quality. In the laboratory, the most commonly studied temporal effects are those in which a test food, beverage, solution, etc. is presented within the context of two different series of contextual stimuli — one set characterized by foods or stimuli of high sensory intensity or high acceptance and the other characterized by foods or stimuli of low intensity or acceptance. The results of these studies unequivocally show that the test food/beverage is rated lower in sensory intensity (or acceptance) when presented within the high context series than when presented within the low context series (Riskey *et al*., 1979; Riskey, 1980; Lawless, 1983; McBride, 1982, 1985, 1986; Vollmecke, 1987; Connor *et al*., 1987). These results have been interpreted within the framework of range frequency theory (Parducci, 1963, 1965; Poulton, 1977, 1979), which postulates that subjects, when making their judgments, divide their psychological categories for the judged stimulus intensities into sizes that are independent of the stimulus range and that they use the response categories with equal frequency.

Examples of real life situations that parallel the conditions of the above laboratory studies occur when consumers receive a poor quality meal in a restaurant that has produced consistently high quality meals in the past, or when a national brand name product that has performed well in the past does not meet established expectations. Under these situations, the judged quality of the item/meal is likely to be far different than had that same meal been purchased in a restaurant where the food was of less consistent quality or had that same supermarket item been sold under a lower quality, generic brand label. Clearly, past experience with the food item or its source can have an important influence on the consumer’s judgment of the quality of that food.

In both the laboratory studies and real-life examples cited above, the observed effects can be appropriately ascribed to temporal contextual influences, because they result from previous, direct exposure to that food, to similar foods, or to the food source. However, there is another class of contextual influences that is similar, but that results from mere exposure to information about the food. Such information might be factual, e.g. price or nutrition content, but may also be opinion or hearsay about the sensory and other quality aspects of
the food. Such information-mediated influences are best placed under a separate rubric of contextual influence, which, for the purpose here, I will term ‘ideational.’

Both actual experience with foods and ideational information about foods can create beliefs about the likely or expected quality/acceptability of foods. In certain cases, these beliefs can become deep-rooted, even though no direct exposure to the food may have occurred. Under these circumstances, the belief can well be considered a form of food stereotype (Cardello, 1995b). Moreover, beliefs about the expected quality or acceptability of foods, whether based in fact or in social, media or advertising fiction, can have direct effects on the perceived attributes, acceptance, and consumption of the food (Cardello & Sawyer, 1992; Cardello, 1994, 1995b; Helleman et al., 1995).

THE ROLE OF EXPECTATIONS

In recent studies in our laboratory, both the expected quality and expected acceptability of foods served in common foodservice facilities were examined (Cardello et al., 1995; Cardello, 1995b). These studies have shown that consumer expectations of the quality and acceptability of foods vary systematically, according to the expected foodservice setting. Not surprisingly, the highest quality/acceptability is expected from foods served at home. This is followed, in order, by foods served in family restaurants, foods served in fast food restaurants, public school food, military food, hospital food, and airline food. In addition, whether or not the individual has first-hand experience with these foodservice settings has little influence on the ratings of expected quality or acceptability. Rather, it appears that where direct experience is lacking, the level of expected quality/acceptability is determined on the basis of information previously obtained through mass media communications or other informational sources. Moreover, if one directly manipulates the level of expected acceptability (or other expected sensory characteristics) of a product and measures its effect on actual perception and/or acceptability of that food when eaten, systematic effects of the expectations will be observed (Cardello & Sawyer, 1992; Cardello, 1994, 1995b).

As examples of the above phenomenon, if one leads consumers to believe that they will consume a coffee with either standard bitterness or with no bitterness, they will rate coffee that is expected to have standard bitterness as being more bitter than the same coffee when it is expected to have no bitterness (Olson & Dover, 1976). Similarly, if one leads subjects to expect either a well liked brand of cola beverage or a less well-liked one, they will rate the cola as more acceptable under the former set of expectations than under the latter (Cardello & Sawyer, 1992). Lastly, if one leads subjects to expect either a fat-free product or a regular-fat product, this belief will establish differential levels of expected acceptability, which will in turn, affect rated acceptance of the products (Tuorila et al., 1994). These and a variety of other findings in the literature on expectations have supported an ‘assimilation model’ of the effect of disconfirmed expectations. That is, ratings of the sensory and hedonic properties of food are influenced in the direction of the level of expectation (Sherif & Hovland, 1961; Olshavsky & Miller, 1972; Oliver, 1977; Bearden & Teal, 1983, Helleman et al., 1995). However, such assimilation effects are not universal, and contrast or other effects can be observed under certain situations (Cardello & Sawyer, 1992; Zellner, pers. commun., 1999). In fact, the classic contrast studies described earlier have been recently analyzed in terms of subject expectations (Cardello et al., 1995b). Results have shown that the high context series creates a higher pre-exposure expectation (sensory or hedonic) for the test food than does the low context series. This finding raises the issue of whether changing expectations may play a synergistic role with range-frequency effects in accounting for the results of these studies.

Clearly, expectations play an important role in the consumer’s judgment of food. What is currently needed is a better definition of the specific conditions that lead to either contrast or assimilation effects. As for the role of consumer expectations in food quality, one prominent industry researcher has captured it by defining quality as ‘consistent conformance to consumer expectations’ (Civille, 1991).

MEASURING FOOD QUALITY

Contextual effects and expectations are only two examples of the many factors that can affect judgments of food and food quality. Numerous others fall into either the category of physiological influences (e.g., hunger and satiety, sensory adaptation level) or cultural and ethnic influences. However, it is clear that food quality, when defined in terms of consumer perception and acceptance, must be measured using the tools and instruments of psychology, psychometrics, psychophysics, and consumer behavior. It is important that the judgments be relative to person, place and time; that they be sensitive to contextual influences that operate concurrently to the food occasion, that operate across time, or that are ideational in nature; and that the judgments incorporate the effects of consumer expectations on the product. If a potential measure of food quality is not sensitive to all of these factors, then the measure is not a good index of what consumers perceive and, therefore, is unlikely to be a good index of what we mean by food quality.

Considering all of the available indices, I propose that food quality be treated and measured in the same
way as the construct that we have come to call consumer acceptance, because, of the measurement constructs available to us today, consumer judgments of acceptability or liking come closest to meeting the criteria spelled out above. Moreover, from an empirical standpoint, consumer judgments of acceptability have repeatedly been shown to correlate highly with consumer judgments of the quality of food (Pilgrim & Peryam, 1958; Stone et al., 1991; Cardello, 1995b). Although some researchers may argue that choice or consumption are better indices than acceptability judgments, I view consumer choice as a secondary phenomenon to that of acceptability and one that can be directly related back to acceptability judgments (Hirsch, et al., 1995). Consumption, on the other hand, succumbs too readily to control by hunger and satiety. These factors can easily override perceived food quality as an influence on the amount of food consumed.

In my view, food quality is a human perceptual/evaluative construct, subject to the same influences of context, expectations, etc., as are other perceptual/evaluative phenomena. Under most practical circumstances, it can be directly equated with the construct of acceptability. However, in those situations where the individual consciously evaluates the product characteristics, as in comparison shopping, it might more appropriately be referred to as reasoned acceptance, to differentiate it from a purely sensory-based affective response [see Mandler (1982) on the role of cognition in affect]. To be valid, food quality must be judged by consumers of the product. This requires careful market segmentation to identify current and potential consumers in the market category. Qualitative data (e.g. to identify product characteristics essential to perceived product quality) and quantitative data (e.g. to compare products under development to other products in the category) must be obtained from these consumers early in product design and development. In fact, one of the major shifts in product development created by going to a consumer-based definition of food quality is the greater use of consumer data early in the development cycle to define product quality. This stands in contrast to many current industrial approaches, where consumer data are utilized late in the development cycle, e.g. during market test phases, after product quality parameters have already been decided upon by in-house developers/experts.

Lastly, as a consumer-based perceptual/evaluative construct, the primary level of measurement for food quality must be at the level of the individual consumer. It must be phenomenological and introspective. However, this does not reduce the study of food quality to the level of complete subjectivity. If one compares the study of food quality to the study of sensory experiences like those of sweetness and bitterness, which are private phenomenological events, it is quickly realized that the scientific study of these processes occurs teliness and in an objective manner through the use of standard psychophysical methods and the measurement of the verbal behavior of subjects. To deny the utility of a consumer-based definition of food quality on the grounds that subjective experience cannot be quantified is to deny validity to all sensory and psychophysical methods. The concept of food quality is intrinsically entwined in the psychological processes of the perceiving consumer. It is here that the measurement challenge lies. It is here that the quintessential element of food quality lies.

REFERENCES


**COMMENTARIES**

Cardello’s paper argues convincingly for defining food quality from the viewpoint of consumer perception, and points out nicely the consequences this has, especially in terms of the context-dependence of food quality. I agree with most of the points raised. One point that remains to be clarified is the distinction between context and expectations. Since he defines context very broadly, including previous experience with a product and information received about the product, his definition of ‘context’ seems to encompass expectations. This could be remedied easily.

My major point of disagreement with Cardello refers to the very last paragraph of his text, where he mentions some implications for the measurement of food quality. He argues that food quality is a case of ‘reasoned acceptance’, and that measurement therefore must be introspective and phenomenological (of the Claude Fischler type?). I do not see how this follows from the arguments set forth in the text. Perception of food quality, like any other perceptual task, can be subject to automatization due to high levels of experience. In this case, food quality perception will still be context-dependent in the way described by Cardello, but will be less consciously reasoned and less available to introspection. And while phenomenological research always can lead to new insights and is an important brick in a research programme, I do not see how the context-
specificity of food quality perception would rule out quantitative research. Such research would have to abandon the ideal of coming up with a general measure of food quality and adopt a contingency approach instead: which elements have which impact on food quality under which circumstances.

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Cardello (1995) elegantly documents the shift to consumer-based ‘definitions’ of food quality and the increasing attention to the context of perception and acceptance of a foodstuff that this shift has forced. Unfortunately, though, his conclusions suffer from a long-standing misconception about the fundamentals of psychological investigation and measurement, shared with many scientists outside psychology and indeed some psychologists in older traditions of psychophysics and psychometrics. As a result his recommendations for measuring food quality are impractical and even self-contradictory.

The misconception is that perception and quality are ‘introspective’ and ‘private phenomenological events’. On this view, rating (for example) how sweet, bitter or acceptable samples of grapefruit juice are provides estimates of subjective sensory or affective magnitudes. This grossly overextends the data. Merely one independent variable and one dependent variable cannot be adequate logically to distinguish the intensities of taste sensations or thrills of pleasure from other possibilities without those conscious experiences, such as an acceptance reaction controlled subconsciously by the receptor stimulation patterns from the drink or acceptance judgments determined by meanings of the words used in the descriptive ratings (Booth, 1991). Indeed, when food-quality ratings are used in more adequate experimental designs, they are often better predicted by descriptive judgements or by the material or ideational stimuli that the analytical ratings describe than they are by any deeper relationship that might represent sensation or affect (Freeman et al., 1993).

A consumer’s recognition of a food’s or drink’s quality is an objective quantitative performance of discrimination and identification. The appropriate level of the sugars, the ‘sweet’ rating or the phenomenological sweetness for a grapefruit juice to start a certain dinner menu for a consumer should therefore be calculated from the discriminative functions that relate the acceptability ratings to the test-juice compositions, the ‘sweet’ scores and the relationship between scores and compositions. The same can be done for the bitters, the ‘bitter’ scores and the ‘bitter’-bitters relation and then the taste interactions in grapefruit quality diagnosis (Freeman et al., 1993).

As I pointed out at the First Pangborn Memorial Symposium, such multidimensional discrimination scaling provides a quantitative theory of context. Even an unmeasured context can be treated as a further (complex) dimension integrated with the dimension(s) being varied in the test food situation. Acceptability then is the square root of the sum of the squares of the distances from ideal of (each of) the varied features(s) and the (complex) dimension of a constant or randomly varying context. For example, something less than ideal in the context chops off the top of the acceptability triangle (Booth, 1986) or, more precisely, creates the rounded peak of the surface of a cone at a perpendicular section away from the apex (Booth, 1993). A science of food quality becomes possible when we measure the sizes of the effects of contextual and focal factors and the ways in which they interact with each other to determine real-life acceptance.

A food is the food it is in the food-service setting; the setting does not modulate quality. The food’s quality is how observable features of the food and context influence different customers’ behaviour in such situations. Product, image and functionality cannot be separated in theory and therefore cannot be split between technical (natural science) R & D and (social science) marketing research. The scientific psychology of food quality should not be walled into the ghetto of exploratory research and trade publications, because it relates directly to the sharp end of brand management and product development. The subjectivist approach of running statistics on acceptance ratings can be ruinous for practical purposes because of the indirectness of estimation of both the production and marketing stimuli and the purchasing and eating behaviour of consumers.

The Introspectionist Fallacy also permeates the biopsychology of hunger/satiety and the social psychology of reasons for choice. As a result of sharing this assumption by many in those research areas, Cardello (1995) takes the extraordinary stance of rejecting what consumers actually accept to buy or to eat as a primary measure of acceptability in favour of ‘acceptability judgements’. This is doubly self-contradictory: the state of the consumer’s body is part of the context that Cardello is arguing we should be measuring and indeed has long been proved to combine with sensory factors in effects on hedonic ratings and food choices (Booth et al., 1994); reasoning is part of the ‘ideational’ context that earlier in the paper Cardello has emphasised we must include. This stance is also doubly fallacious. First, if what consumers buy or eat is influenced by what’s in the stomach or by what’s being reasoned, then why shouldn’t some subjective experience of quality be affected at least as much, especially if the testing of sensory factors is decently contextualised as Cardello correctly argues it should be? Secondly, psychologists assume that the state of the gut must affect intake and attitude psychologists assume that they must be measuring rational causes of food choice; yet these are introspective presumptions, derived merely from the

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meanings of words: when real-life food acceptance habits are studied, they turn out to be quite hard to influence substantially either by hunger and satiety signals or by reasons not dependent on sensory factors (Booth, 1994).

It is also confusing to treat previous learning as a context or memories and expectations as modulators of acceptability. The interactions among attributes of a test food and its context in the mind of the consumer have been structured by past experience of similar eating or purchasing situations (Booth, 1991). This is, the perception and acceptance of a food is normally a learned performance: 'preference is recognition' (Booth et al., 1994). This means that the memory is in the perception; the expectation is the ideal or norm with respect to which all quality judgments and food-choice acts are made (Booth, 1986, 1987). It also means that situational appropriateness is not a modulator of acceptability either. 'Social' factors are cognitively integrated with sensory and somatic factors in ways that need to be measured. Changes in preference and even in supposedly sensory scores between unbranded and branded tests have long been known. Just looking for directions and statistical significances of effects of expectations, appropriateness and other contextual factors on quality ratings will not improve our theoretical understanding or our ability to make practical predictions. We need to identify the mechanisms by which brand images and contexts of use have their effects in order to estimate the consequences for consumer choice.

It follows that food quality cannot be directly equated with the construct of acceptance' alone. Rather, food quality is the objectively estimated overall effect of the material ('sensory' and somatic) and symbolic ('ideational') attributes of the food and the situation on its actual or symbolic acceptance, as that integrated effect varies among consumers and common situations of use (Booth, this issue).

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