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The Interactive Effect of Cultural Symbols and Human Values on Taste Evaluation

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We suggest that consumers assess the taste of a food or beverage by comparing the human values symbolized by the product to their human value priorities. When there is value-symbol congruency, they experience a better taste and aroma and develop a more favorable attitude and behavior intention; incongruence has the opposite effect. Participants in two taste tests were told the correct identity of a product or misinformed. Participants who endorsed the values symbolized by the product (that they thought they were tasting) evaluated the product more favorably. The implications for marketing strategy, self-congruity theory, and the assimilation effect are discussed.

One's impression of the tastiness of a food or beverage could be an objective assessment. The chemical properties of the product could stimulate taste receptors in the mouth, resulting in taste perception. One then evaluates that taste perception (i.e., does it taste good?). However, a diverse body of research, including studies on memory, priming, stereotyping, and judgment/decision making, reveals that people tend to assimilate judgments in line with existing knowledge (Bargh 1982; Herr 1986; Macrae, Stangor, and Milne 1994; Srull 1981), that is, that people's prior beliefs about an object color their subsequent judgments. This assimilation effect also manifests in taste evaluations. For instance, in an experiment by Nevid (1981), participants preferred the taste of Perrier over Old Fashioned Seltzer when the two options were labeled; when the products were offered without labels, participants did not show a preference. Similarly, Wardle and Solomons (1994) found that participants gave the same food a higher rating in terms of taste when told it was high in fat as opposed to low fat.

Presumably, the assimilation effect occurs because people have knowledge structures or schemas (e.g., that Perrier tastes good or healthy foods taste bad; Raghunathan, Naylor, and Hoyer 2006) that are activated by information such as a brand name or nutritional content, leading to perceptions of taste that are consistent with these schemas. However, the results of studies on the effects of such information on taste evaluation have been mixed, with some showing a negative effect (e.g., foods labeled "healthy" taste bad), others a positive effect (e.g., foods labeled "healthy" taste good), and still others no effect at all (Kahkonen, Tuorila, and Lawless 1997; Schutz and Lorenz 1976; Stubenitsky et al. 1998; Westcombe and Wardle 1997). Moreover, the effect is not consistent across demographic groups and other individual difference variables (Aaron, Evans, and Mela 1995; Kahkonen and Tuorila 1999; Prescott and Young 2002; Shepherd et al. 1991). Collectively, these findings indicate that the mechanism driving the effect is complex.

Here we suggest that the assimilation effect in taste evaluation stems from the fusion of individual-level and cultural-level processes (see fig. 1). Cultural activities assign symbolic meaning to foods and beverages, which individuals within that culture interpret and evaluate. In particular, a person compares the human values symbolized by a food or beverage to his or her own values and self-concept. When there is value-symbol congruency, one experiences a favorable taste and aroma; incongruence leads to a perception of poor taste. For instance, if members of a cultural group interpret Gatorade as symbolizing the human value "A Sense of Achievement," then people who personally value a sense of achievement would perceive that Gatorade tastes good

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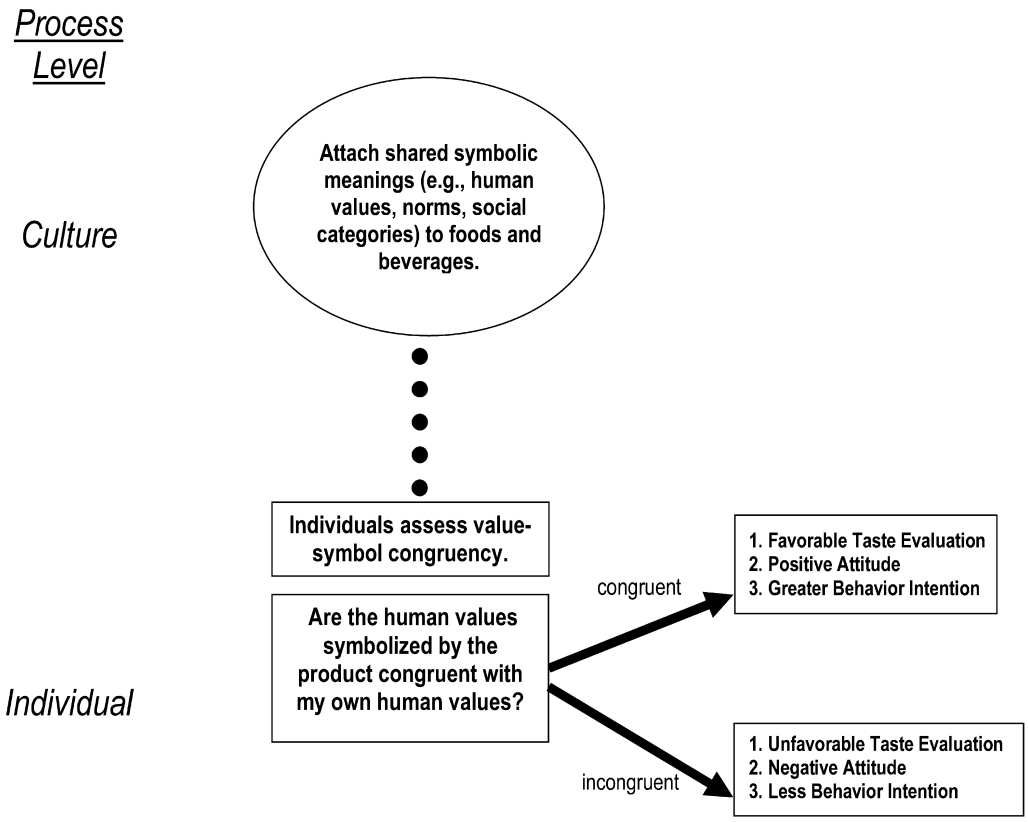
FIGURE 1

THE PROPOSED VALUE-SYMBOL CONGRUITY PROCESS OF TASTE EVALUATION, ATTITUDE, AND BEHAVIOR INTENTION



(and have a favorable attitude and purchase intention), whereas those who reject a sense of achievement would experience the opposite effects.

Thus, we propose that consumers' taste evaluations are influenced by cultural symbols ascribed to a food or beverage, but that the specific effect (i.e., positive or negative) depends on human value priorities. In this way, the framework considers not only cross-cultural differences in food habits and taste preferences, and how these persist over time, but also differences among individuals and social change. Moreover, it recognizes that everyday, ordinary consumption experiences shape, and are shaped by, one's identity. We are not suggesting that objective taste does not play a role, just that taste is also influenced by a subjective process. As elaborated below, our predictions flow from self-congruity theory (Sirgy 1982) and the belief that consumers probably evaluate symbolic meaning using a category-based judgment (Holbrook and Moore 1981; Keaveney and Hunt 1992; McCracken 1988), which is known to facilitate the assimilation effect and schematic processing (Geers and Lassiter 1999; Hoch and Ha 1986; Sujan and Dekleva 1987). We report an experiment showing that value-symbol congruity leads to a more favorable taste evaluation, attitude, and purchase intention. Among other implications, the framework implies that the positioning of a brand (in terms of image) may influence marketing success as much as a product's objective taste, because the image affects how consumers experience the taste.

LEARNING, CULTURE, AND TASTE EVALUATIONS

Consumers often say that the taste of a food or beverage is the decisive factor in their product choice (Clark 1998; Glanz et al. 1998). Taste evaluations are based partly but not entirely on biological or innate preferences for particular tastes or flavors (Germov and Williams 1999). For instance, research of neonates' facial expressions suggests an innate preference for sweet sensations and reflexive aversions or rejection of bitter and sour tastes (Lipsitt and Behl 1990). Taste perception may also be influenced by past experiences (Eertmans, Baeyens, and Van den Bergh 2001; Matlin 1983). Humans learn the relationship between a food and the consequences of its consumption. Positive sensory experiences result in positive food attitudes, thereby increasing consumption (Letarte, Dube, and Troche 1997). Conversely, negative sensory experiences have the opposite effect. Negative physiological responses, such as nausea, also act as a

strong negative conditioning agent in the formation of negative food attitudes, explaining the effect of taste aversion.

However, individual preferences are not independent of culture (Fieldhouse 1995; Rozin 1996). If innate taste preferences were the sole driving force behind food choice, then few would persevere with unpleasant tastes such as coffee, beer, or chili peppers (Germov and Williams 1999; Matlin 1983). Rather, foods and beverages are experienced in a sociocultural context. For instance, the first time a person experiences the taste of beer, it would likely taste unpleasantly bitter. However, consuming alcohol at restaurants, pubs, nightclubs, and parties is generally considered a social experience, which provides positive reinforcement of the taste of beer itself (Germov and Williams 1999). In this way, a preference for beer is acquired through repetition that is driven socially and culturally rather than biologically.

Thus, one's evaluation of the taste of a food or beverage stems from both an objective process (in which the inherent properties of the item stimulate taste receptors and engender a positive or negative sensory experience) and a subjective process (in which society creates a particular impression of the product, to which individuals then react). This subjective process is not yet fully understood.

PRODUCT CHOICE AND VALUE-SYMBOL CONGRUITY

One way to illuminate the subjective process involved in taste evaluation is to consider how food and beverages might be symbolic objects (Levy 1981). Symbolic objects comprise culturally shared, abstract beliefs, which refer to entities in the culturally constituted world (Dittmar 1992; Gusfield and Michalowicz 1984; Kilbourne 1991; Levy 1959; McCracken 1988). For instance, Firth (1973) suggested that the symbolic meaning of an action or object consists of subjective, abstract beliefs about a cultural entity; these beliefs are typically complex and go beyond simple observations of physical form. In a study by Belk (1978), participants made similar inferences about people who used certain products, and Szalay and Deese (1978) reported that consumers, when asked to consider a specific item, recorded similar thoughts about that item; both studies support the notion that symbolic meaning is culturally shared (although not all products have shared symbolic meanings; e.g., Elliott 1994; Hirschman 1980; Swartz 1983).

Self-congruity theory suggests that consumers choose products with symbolic meanings that are congruent with their self-concept (Sirgy 1982), a claim supported by numerous studies (Ericksen 1996; Litvin and Kar 2004; Sirgy 1985). Self-congruity theory belongs to a broader class of cognitive-consistency theories (Festinger 1957; Heider 1946), which suggest that people strive for consistency in their beliefs and behaviors because inconsistency produces feelings of unpleasantness and tension. Self-congruity theory assumes that product choice results from the self-concept, and not the other way around. However, consumer researchers implementing symbolic-interactionism theory (Mead 1934) have suggested that using a product can indeed influence the self-concept, via self-reflexivity or imaging how other people interpret users of a specific product (Kleine, Kleine, and Kernan 1993; Solomon 1983). This alternative view may better explain individual preferences for certain foods and beverages, in particular, general food and drink categories (e.g., steak, hamburger, fruit) and brands that are well established and popular (e.g., Coke). Such goods not only have shared cultural associations, but by persevering in a culture for decades, their symbolic meanings are also likely used by society to shape societal roles. For example, parents giving a boy (but not a girl) a steak are teaching children about masculine and feminine social roles.

We noted that symbolic meanings refer to entities in the culturally constituted world, but they refer to social categories (e.g., gender, nationality, etc.) and cultural principles (e.g., norms, human values, etc.) in particular (McCracken 1988). The human value content of symbolic meaning is relevant here. Aaker, Benet-Martinez, and Garolera (2001, 492) suggest that the symbols and "the meaning embedded in brands can serve to represent and institutionalize the values and beliefs of a culture." Further, Verkuyten (1995) maintains that imperceptible entities (e.g., values), when represented by symbols, can be experienced in material form. He argues that human values "are concretized so that the perceivable object (the symbolic form) embodies these abstract notions (symbolic content) and gets a symbolic meaning" (Verkuyten 1995, 270). Put another way, symbols tend to be evaluated based on their human value content (Cobb and Elder 1972; Firth 1973; Gusfield and Michalowicz 1984; Sears, Huddy, and Schaffer 1986). Besides locating human values in an object's symbolic meaning, people differ in the human values that are important to them (Feather 1975; Kahle 1983; Rokeach 1973; Schwartz 1994). Rokeach (1973) suggested that human values are guiding principles in one's life, tied to the self-concept, and a focal point around which other, less important, beliefs are organized.

Thus, consumers likely react to a product's symbolic meaning; a product that symbolizes a human value that they endorse may result in a more positive attitude toward that product, and a greater likelihood of purchasing it, whereas a product that symbolizes a value that they reject results in an unfavorable attitude and a lower probability of purchase. For instance, if a shared cultural association of the Nike brand is the human value "Self-Direction" (i.e., setting one's own goals), then we suggest that consumer preference and intention to buy Nike products is determined, in part, by how much that consumer personally values self-direction. Indeed, Allen and Ng (1999) found that the human values of consumers who had indicated that the symbolic meaning of a product was important to them had a direct influence on their final product choice. In addition, Allen (2002) found that experimentally manipulating the human value content of a product's symbolic meaning led participants to change their product attitudes (i.e., those who endorsed the value

became favorable, whereas those who rejected the value became negative).

TASTE EVALUATION AND VALUE-SYMBOL CONGRUITY

In the present study, we suggest that the value-symbol congruity process not only shapes product attitude and intention to purchase but also affects one's impression of the product's taste and aroma (see fig. 1). Consumers consider (consciously or otherwise) the cultural symbols and associations of a food or beverage. If the product symbolizes a human value that they personally support, the congruency leads to a favorable evaluation of the product's taste, a positive attitude toward the product, and a stronger intent to purchase it. On the other hand, if the human value symbolized by a product is rejected by a consumer, s/he will have the opposite reaction. Admittedly, this conceptual framework is only a general trend. The beliefs and behaviors of people may waiver over time, and ideals and actions may often be in conflict (LaPiere 1934). In addition, nonpsychosocial factors may also help shape food choice, such as climate and transportation infrastructure, which affect availability of certain foods (Fieldhouse 1995). Nonetheless, we maintain that an interaction between symbolic meaning and human values affects consumer taste evaluation and product choice.

Other evidence supports our rationale. For instance, when consumers assimilate their experience of a product with prior knowledge, their cognitive processing is general and holistic, whereas when they contrast the product experience with prior knowledge, their processing is at the attribute level and more analytically based (Geers and Lassiter 1999; Hoch and Ha 1986; Sujan and Dekleva 1987). General, holistic processing also typifies how symbolic meaning is evaluated, because symbols tend to be located on the product whole (e.g., brand name, product class or category; Holbrook and Moore 1981; Keaveney and Hunt 1992; McCracken 1988). Symbols are tied to a specific configuration of tangible attributes, resulting in the instantaneous evaluation of the product whole. In particular, the evaluation of symbolic meaning is likely characterized by what Fiske and Pavelchak (1986) describe as a category-based affective response, which is a Gestalt-like, holistic judgment in which the stimulus is compared to an exemplar, and if the two match, the affect associated with the exemplar category schema is automatically transferred to the stimulus. Consequently, when consumers employ a category-based judgment to evaluate the symbolic meaning of a product, they likely assimilate (rather than contrast) the product with prior experience. Hence, if a person endorses a human value symbolized by a product (i.e., the affect of the category schema regarding that product's symbolic meaning is positive), s/he would assimilate and experience a favorable taste, and vice versa.

Further, Wansink, van Ittersum, and Painter (2005) found that when an item on a restaurant menu was described using evocative terms (e.g., succulent), diners reported that the food tasted better than when evocative terms were not used. The authors speculated that diners reported that food tasted better because the evocative terms focused their attention on the hedonic aspects of the food. However, the design of that study was limited in that, in most cases, the "evocative condition" included both evocative terms (e.g., succulent, tender) and cultural symbols and associations (e.g., Traditional, Italian, Home-style, and Grandma's). Thus, their study does not rule out our suggestion that taste evaluations stem from cultural symbols.

Finally, the direction of influence (i.e., positive or negative effect) of nutritional information on taste evaluation varies by nation (Mialon et al. 2002), and taste evaluations within a nation also vary, according to "value segments" (Kihlberg and Risvik 2007). Several studies have also shown that brand information can influence taste evaluations (Allison and Uhl 1964; Makens 1965; Nevid 1981). While all of the above-mentioned authors speculated that cultural processes involving brand names or product categories could potentially shape taste evaluations, they did not delineate what these cultural processes may comprise or how individuals within a culture may engage them. Although not investigating taste evaluations, Overby, Gardial, and Woodruff (2004) found a cross-cultural difference in the content and valence of the (perceived) human value consequences of wine, which supports our view that cultural processes ascribe value-infused symbolic meaning to foods and beverages. However, we contend that, at the same time, individuals within the culture vary in their attitudes and taste evaluations as they compare the human values symbolized by the product to their own human values.

THE PRESENT EXPERIMENT

We performed an experiment to test the idea that taste evaluation stems from, in part, a subjective process in which cultural activities assign symbolic meanings to products that individuals then evaluate (by appraising the extent to which the human values symbolized by the product are consistent with the values they personally support). Value-symbol congruity leads to a favorable evaluation of the product's taste and aroma, a positive attitude toward the product, and a stronger intent to purchase it; incongruence leads to the opposite. Although this decision-making model is a simplification of the individual-level and culture-level processes that shape taste evaluation, it provides testable hypotheses.

The experiment involved taste tests of pairs of products that have objectively similar tastes but different symbolic meanings. We gave half the participants the first product in the pair and the other half the second product. Further, half of the participants were accurately informed about the identity of the product they taste tested and the other half were misinformed (thus, an Informed Product A vs. Informed Product B, by Actual Product A vs. Actual Product B design). We predicted that when there was little actual sensory difference between two products, taste evaluations would be influenced by the proposed subjective process. Thus, participants who support the human values symbolized by the

product (that the experimenter claims they are tasting) would report that the product tastes better, regardless of whether it was the product the experimenter had described. We predicted that equivalent effects on product attitude and intent to purchase would also be found.

We wanted to assess the proposed value-symbol congruity process for both a food and a beverage. Further, we needed two foods (and two beverages) that had different symbolic meanings but tasted similar enough to be able to deceive participants about what they were in fact tasting. Here, we describe the approach we used to select these products.

The Social Power Symbolism of Beef Sausage Roll versus a Vegetarian Alternative

Individuals differ in how much they seek to control or dominate people and resources. Schwartz (1994) suggests that people who seek these outcomes as lifelong goals endorse a set of human values, termed *social power*, which include values such as seeking authority, wealth, social recognition, and preserving one's public image. The social power domain has consistently emerged in cross-cultural studies of values, and people who support social power values exhibit related behaviors, such as pressuring others to go along with their preferences and opinions (Bardi and Schwartz 2003).

Thus, we selected meat for the food taste test because a consensus exists among sociologists and anthropologists that meat symbolizes social power and related values (i.e., inequality; Adams 1990; Fiddes 1991; Heisley 1990; Twigg 1983). Fruits, vegetables, and grains symbolize the opposite of red meat (i.e., social equality and rejection of power). Using a sample randomly selected from Australian telephone books, Allen and Ng (2003) found that red meat symbolized inequality more than the other food groups, and consumption of red meat was more strongly correlated with social power values than other value domains. Further, Lea and Worsley (2001) found that heavy meat eaters endorsed social power more than vegetarians. Meat is the central, preeminent food in Western culture (Douglas 1973). Moreover, heavy meat eaters claim that they eat so much meat because it tastes good (Lea and Worsley 2003; Santos and Booth 1996), and thus it would be worthwhile to examine if this impression stems from the objective properties of the food or the cultural meanings it embodies.

Given that the human values that vegetables and grains symbolize are the opposite of what red meat symbolizes, the food category that might best resemble red meat in taste but have a symbolism in direct opposition, is a vegetarian alternative to meat products (e.g., vegetarian hotdogs, sausages, burgers). To determine which vegetarian alternative most resembles meat, we performed a pilot study involving 19 volunteers (3 male, 16 female undergraduate students) willing to eat meat and without any food allergies. Each participant ate three types of leading, grain-based meat substitutes (Sanitarium® Nutmeat Sauce, Sanitarium® Vegetarian Sausage Roll Mix in Canola® Puff Pastry, and Longalife® Vegetarian Hotdog in a bread roll). After consuming each product, participants rated the following items: flavorsome, pleasant aroma, tasty, tastes like meat, smells like meat, and looks like meat. Then participants were asked whether or not each food was real meat (yes or no). According to the results, the nutmeat sauce was perceived as looking more like meat than the vegetarian sausage roll and hotdog ($M = 6.2$ vs. 5.7 and 5.0), but the vegetarian sausage tasted more like meat than the nutmeat sauce and hotdog ($M = 5.0$ vs. 4.7 and 4.5), and the vegetarian sausage roll smelled more like meat than the nutmeat sauce and hotdog ($M = 5.1$ vs. 3.9 and 4.8). In addition, 69% of the participants believed that the vegetarian sausage roll was in fact meat, compared to 37% for the nutmeat sauce and 37% for the hotdog.

These results indicated that the Sanitarium® Vegetarian Sausage Roll Mix in Canola® Puff Pastry was believable and credible as a meat product, and thus it was selected for the main study. As the other product in the taste test, we selected a beef sausage roll (Mrs. Quick Premium brand). In the main study, the two foods (Mrs. Quick Premium beef sausage roll and the Sanitarium® Vegetarian Sausage Roll) were presented to participants without brand names, simply described as a "beef sausage roll" or a "vegetarian alternative roll."

Given that previous research found that meat symbolizes social power and related values (i.e., inequality) and that fruits, vegetables, and grains symbolize the rejection of power (Adams 1990; Allen and Ng 2003; Fiddes 1991; Heisley 1990; Lea and Worsley 2001; Twigg 1983), we surmised that the beef sausage roll symbolizes the endorsement of social power values (as it is made from red meat), and the vegetarian alternative roll symbolizes the rejection of social power (being made from cereals/grains and vegetables). To confirm this, we performed another pilot study involving 59 undergraduate students and university staff members (males = 27, females = 32). A common technique employed in market research to measure the image of a product is to ask participants to describe the values, traits, and characteristics of the typical product user (Belk, Bahn, and Mayer 1982; Grubb and Hupp 1968; Levy 1959; Rudmin 1991). Hence, participants were given the ingredients of both the sausage roll and the vegetarian alternative roll and then asked to indicate to what to extent they agreed or disagreed that people who prefer each product endorse social power (using a 7-point Likert scale and Schwartz's [1994] definition of the social power value). As predicted, the beef sausage roll more strongly symbolized social power than did the vegetarian alternative ($M = 3.7$ vs. 3.2), ($F(1, 58) = 7.4$, $p < .01$). In short, the pilot studies showed that the beef sausage roll and the vegetarian alternative roll differ in social power symbolism and that the vegetarian alternative roll tastes like meat.

The Symbolism of Cola Soft Drink Brands

We chose cola soft drinks for the beverage taste test, due to their penetration of the market. Published studies of the

symbolism of soft drink brands are sparse. Thus, to identify two brands of cola with different symbolic meanings but a reasonably similar taste, we performed a pilot study with 19 male and 15 female undergraduate business students. The pilot study involved two parts. First, we held a blind taste test of four brands of cola: Coke, Pepsi, LA Ice (a midrange brand), and Woolworth Homebrand (a low-cost store brand). Participants rated the drinks on the following items: sweet, sour, salty, and bitter. No differences among brands were found. Then the participants were asked to guess the brand names of the four soft drinks they had tasted. LA Ice/Woolworth was the most frequently confused pair (11 times participants thought LA Ice was Woolworth, and 4 times participants thought Woolworth was LA Ice), and Woolworth/Pepsi was the next most frequently confused pair (which were mistaken for each other a total of 15 times).

Next, to measure the symbolic meanings of the brands, we presented the pilot study participants with a list of 17 human values (drawn from Schwartz's [1994] Value Scale) and asked them to indicate how much they thought that people who like each brand of soft drink endorse that human value (on a 7-point Likert scale). Coke and Pepsi had similar human value symbolic meanings, Woolworth was often at the lower end of the scale, and LA Ice was generally between the two extremes. The values for which Coke and Pepsi were rated the most highly, and LA Ice and Woolworth the lowest, were exciting life ($M = 5.7$, 5.4, 3.5, and 2.4; $F(3, 29) = 30.8$, $p < .001$), enjoying life ($M = 6.0$, 5.8, 3.8, and 3.0; $F(3, 29) = 22.1$, $p < .001$), social power ($M = 5.7$, 5.5, 3.3, and 2.4; $F(3, 29) = 25.6$, $p < .001$), and social recognition ($M = 5.9$, 5.5, 3.4, and 2.3; $F(3, 29) = 27.7$, $p < .001$).

The pilot study's findings about Coke's and Pepsi's symbolic meanings may make sense in light of these products' long-running campaigns emphasizing a life of excitement and enjoyment, with slogans such as Coke's "Can't beat the feeling," "Life is good," and "Coke adds life," and Pepsi's "The joy of cola" and "Pepsi's got your taste for life." Some of their campaigns also emphasized a social-recognition element, such as Coke's 1950s slogans "Sign of good taste" and "Refreshment that the whole world prefers." On the other hand, the Woolworth Homebrand cola is a low-cost store brand that does use hedonism or self-expression themes in advertising and promotion. Further, the packaging of the Woolworth Homebrand cola is plain, and plain packaging usually does not convey or symbolize excitement (Hine 1995). Instead, Woolworth Homebrand cola's positioning strategy seems largely centered on its low price, which may signify to consumers that it lacks prestige and status and hence explain why pilot study participants perceived low social recognition and power symbolism.

In any case, the pilot study showed that Pepsi and Woolworth Homebrand cola taste the most similar yet have symbolic meanings that are the most different, and hence these were selected for the main study (presented to participants as "Pepsi" or "Woolworth Homebrand cola").

METHOD

Design

We used a 2 (Informed Product A vs. Informed Product B) × 2 (Actual Product A vs. Actual Product B) × human value endorsement design, with a two-level within-subjects variable (a food taste test and a beverage taste test). For the food taste test, participants were informed that the product was a "beef sausage roll" or a "vegetarian alternative roll," and for the beverage taste test, they were informed that the product was "Pepsi" or "Woolworth Homebrand cola." Of course, the actual product given to each participant, and whether he or she was told the correct identity or misinformed, were randomly chosen. Also, as reported, our pilot studies and/or previous research has shown that a beef sausage roll symbolized the endorsement of social power values; a vegetarian alternative symbolized the rejection of social power values; Pepsi symbolized the endorsement of a life of excitement, enjoying life, social power, and social recognition; and Woolworth Homebrand cola symbolized the rejection of these four values. Thus, we measured how much participants supported each of the above-mentioned values using Schwartz's (1994) Value Scale.

Participants

A total of 160 volunteers (students and staff members of a university in a large Australian city) were recruited via advertisements on notice boards and requests at lectures. Only people without food allergies and who were willing to taste meat and soft drinks were accepted into the study. The sample was 57% male and 43% female, 17–60 years old (median = 22), and had a median education of completing the last year of high school.

Questionnaire

Besides demographic characteristics, the questionnaire measured the following.

Human Values. Measured with Schwartz's (1994) Value Scale, which consists of 56 values (e.g., loyal, ambitious, pleasure, social order, national security) representing core domains such as universalism, benevolence, conformity, tradition, security, power, achievement, hedonism, stimulation, and self-direction. All values were followed by a short explanatory phrase and were rated on a 9-point scale of importance as a guiding principle in one's life (i.e., −1, "Opposed to My Values," to 8, "Of Supreme Importance").

Taste Evaluation. Measured separately for food and drink, using the same eight items (good taste, pleasant taste, great taste, good aroma, pleasant aroma, great aroma, flavorsome, great flavor) rated on a 7-point Likert scale (1, "Strongly Disagree," to 7, "Strongly Agree"). An evaluation score was calculated for each participant as the mean of the eight items for both the soft drinks (Cronbach's alpha = .95) and the food (Cronbach's alpha = .96).

Attitude and Purchase Intention. Measured separately for food and drink, with six items (I like this product, I intend to buy this product, I will buy this product in the future, I prefer this product over other ones I have had, I would purchase this product over the other brands, It is likely that I will buy this product the next time I am at the supermarket) rated on a 7-point Likert scale as described above. A mean score was calculated for each participant for both the food (Cronbach's alpha = .92), and the drinks (Cronbach's alpha = .96). Because attitude and behavior intention are closely linked (Ajzen 1985), for simplicity we combined these two factors into the same measure.

Current Food Group and Soft Drink Consumption. Participants reported the number of servings they consumed in the previous three days of the following: meat, dairy products, fish, fruits, vegetables, cereals, Pepsi, Coke, Woolworth Homebrand cola, and LA Ice cola. Coke, LA Ice, dairy products, fruits, and fish were included to help disguise the focus of the study.

Social Desirability Bias. Using a 7-point Likert scale, participants completed eight items from the Crowne and Marlow (1960) Social Desirability Scale (Cronbach's alpha = .75).

Manipulation Checks. At the end of the questionnaire, participants were asked if they believed that the soft drink they had tasted was the brand the experimenter stated (Yes or No); this was repeated for the food.

Procedure

Participants were reminded of the exclusion criteria (no food allergies and must be willing to taste meat and soft drinks) before the commencement of the study. Participants first completed the values survey, Social Desirability Scale, and current consumption items, and then the food taste test began. Half of the participants were told that they were about to taste a beef sausage roll and the other half were told that they were about to taste a vegetarian alternative roll. Neither group was given the brand names of the food, but they were provided an ingredient list. The experimenter randomly chose what each participant was told s/he was receiving and what was actually given. The food item was presented on a paper plate, along with a serviette. Participants tasted the food, rated it on taste evaluation, and completed the attitude and intention items. Then, the soft drink taste test began. Half of the participants were told that they were about to taste Pepsi, and the other half were told that they were about to taste Woolworth Homebrand cola. The soft drink was presented in an unlabeled plastic cup. Again, the information given by the experimenter and the actual product served were randomly selected. Participants tasted the soft drink, rated it on taste evaluation, and completed the attitude and intention items. Finally, participants completed the manipulation check items and provided their demographic data. It is worth mentioning that we chose to measure human values first, even though this may increase the salience of human values, because of the possibility that the taste test could change the values of some participants (see the "Discussion" section).

RESULTS

As reported below, we used regression to assess main effects and interactions (Cohen and Cohen 1983; Jaccard, Turrisi, and Wan 1990). In preliminary regression analyses with taste evaluation and attitude as the criteria, we tested all combinations of main effects and interactions involving value endorsement, information condition, and the actual product given to the participant. This revealed that actual product had significant main effects in the drink taste test (taste evaluation $b = -.15$, $t = -1.9$, $p < .05$; attitude and intention $b = -.17$, $t = -2.2$, $p < .05$), in which participants who had tasted Pepsi rated the beverage more favorably than those who had tasted Woolworth. However, the main effects of actual product in the food taste test were not significant (taste evaluation $b = .01$, $t = .1$, $p =$ NS; attitude and intention $b = -.03$, $t = -.2$, $p =$ NS). Further, actual product did not interact with any other factor. Given this outcome, and that our main predictions concern the relationship between value endorsement and product symbolism, we tested a simpler model assessing the two-way interaction between value endorsement and information condition.

Food

Most participants (80%) believed that the food they had tasted was the food the experimenter had claimed. As mentioned, our pilot study confirmed that the beef sausage roll symbolizes the endorsement of social power, whereas the vegetarian alternative roll symbolizes the rejection of social power. Thus, to assess if taste evaluation stemmed from consistency between the human values symbolized by the food and individuals' human value priorities, we calculated a Social Power Value Endorsement score for each participant, which was his or her mean ratings in Schwartz's (1994) social power domain (social power, authority, wealth, social recognition, and preserving public image).

Then the data were analyzed using a regression in which the criterion was the Food Taste Evaluation score, and the independent variables were entered in three steps. For the first step (1), we wanted to control for some possible confounds and thus included the following: whether the participant believed that the food he or she tasted was the one the experimenter claimed (0 = no vs. 1 = yes); social desirability bias (continuous); age (continuous); sex (0 = male vs. 1 = female); and a rough indicator of participants' experience with the products (i.e., their current consumption of red meat, vegetables, and cereals, each continuous). In the second step (2), centering was first carried out where required, and then the following main effects were entered: social power value endorsement (continuous); and information condition (0 = Informed Sausage Roll vs. 1 = Informed Vegetarian Alternative). The third step (3) com-

prised the two-way interaction, calculated as the multiplicative of social power value endorsement and information condition. The first step did not significantly predict the criterion ($r^2 = .05$, $F(7, 145) = 1.1$, p = NS), though age was significant ($b = -.19$, $t = -2.3$, $p < .05$). The second step was robust ($r^2 = .14$, $F(9, 143) = 2.7$, $p < .001$), mainly due to the main effect of social power value endorsement ($b = .25$, $t = 3.0$, $p < .001$).

More important, the third step, which comprised the social power value endorsement by information condition interaction ($b = -.19$, $t = -2.6$, $p < .01$), added significantly to the prediction from the previous step (change in $r^2 = .04$, $F(1, 142) = 8.1$, $p < .01$; total $r^2 = .18$, $F(10, 142) = 3.2$, $p < .001$). Figure 2 graphs this interaction. Consistent with our predictions, low social power participants gave the food a higher taste evaluation when they believed they had tasted a vegetarian alternative and gave the food a lower rating when they believed they had tasted a sausage roll ($b = .42$, $t = 4.1$, $p < .001$). High social power participants showed the opposite tendency, though to a lesser degree ($b = -.11$, $t = -.9$, p = NS).

A second regression of participants' Food Attitude and Intention score with the same independent variables and steps found that, besides the weak first step and age effect already mentioned (age $b = -.19$, $t = -2.3$, $p < .05$; $r^2 = .05$, $F(7, 145) = 1.2$, p = NS), the second step did not reach significance ($r^2 = .09$, $F(9, 143) = 1.5$, p = NS). However, the third step containing the social power value endorsement × information condition interaction contributed significantly ($b = -.19$, $t = -2.5$, $p < .01$; change in $r^2 = .04$, $F(1, 143) = 5.8$, $p < .01$; total $r^2 = .12$, $F(10, 142) = 2.0$, $p < .05$). Subsequent probing found that low social power participants had a more favorable attitude and purchase intention when they believed they had tasted a vegetarian alternative to meat than when they believed it was a sausage roll ($b = .39$, $t = 3.7$, $p < .001$). In contrast, high social power participants showed the opposite trend but not significantly ($b = -.10$, $t = 1.0$, p = NS).

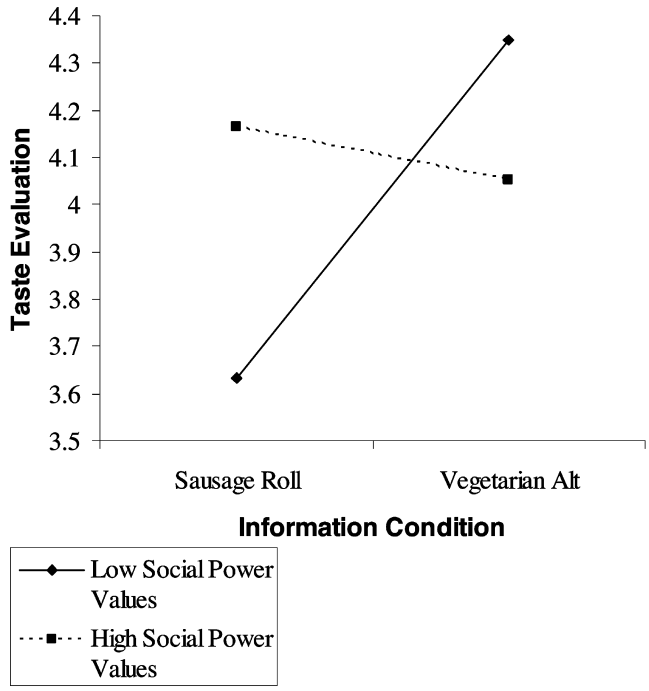
Drink

Most participants (81%) believed that the soft drink they had tasted was the brand the experimenter claimed. Unlike the different food groups, published evidence regarding the cultural symbols and associations of Pepsi and Woolworth cola is sparse. Thus, the analysis of the main hypotheses examines only those values that the pilot study showed most differentiate the symbolism of Pepsi from that of Woolworth cola (i.e., exciting life, enjoying life, social power, and social recognition). Exciting life and enjoying life are conceptually similar, as are social recognition and social power. Thus, two sets of analyses were performed, one for each pair.

An Exciting and Enjoying Life Value Endorsement score was calculated by taking each participant's mean rating for exciting life and enjoying life. Again, the data were analyzed with regression analysis with the criterion (Drink Taste Evaluation score) and the independent variables entered in three steps: the first step (1) contained the controls (whether the participant believed that the soft drink brand he or she tasted was the one the experimenter claimed; social desirability bias; age; sex; and participants' current consumption of Pepsi and Woolworth cola); the second step (2) the main effects of exciting life and enjoying life value endorsement (continuous) and information condition (0 = Informed Pepsi vs. 1 = Informed Woolworth); and the third step (3) the two-way interaction of exciting life and enjoying life value endorsement and information condition.

FIGURE 2

FOOD TASTE EVALUATION ACCORDING TO SOCIAL POWER VALUE ENDORSEMENT AND INFORMATION CONDITION (0 = INFORMED SAUSAGE ROLL VERSUS 1 = INFORMED VEGETARIAN ALTERNATIVE)

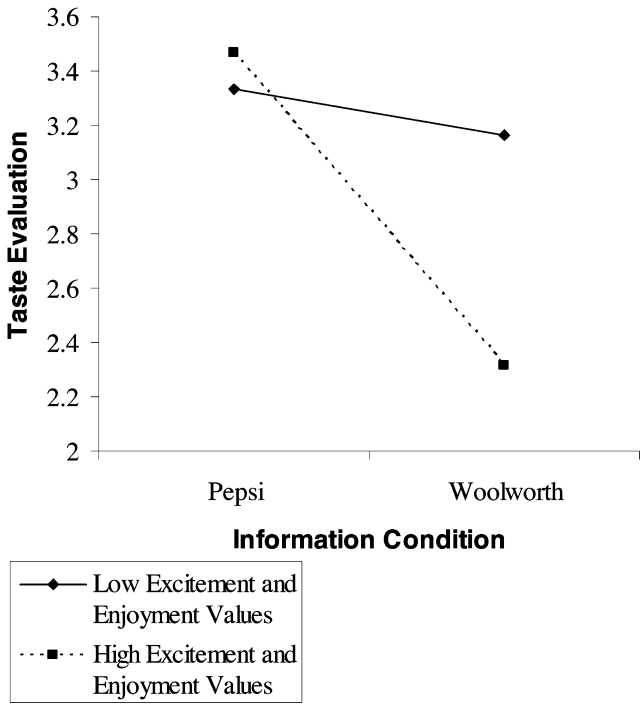


Once more, the first step was not significant ($r^2 = .07$, $F(6, 150) = 1.7$, p = NS) despite the effect of age ($b = -.17$, $t = -2.1$, $p < .05$). The second step made a significant contribution ($r^2 = .14$, $F(8, 148) = 3.0$, $p < .01$) due to the main effect of information condition ($b = -.28$, $t = -3.6$, $p < .001$). This was followed by a significant two-way interaction in the third step ($b = -.23$, $t = -2.8$, $p < .001$; change in $r^2 = .04$, $F(1, 147) = 7.6$, $p < .001$; total $r^2 = .18$, $F(9, 147) = 3.6$, $p < .001$). Figure 3 shows that, consistent with our predictions, participants who valued exciting life and enjoying life reported that the drink tasted better when they believed they had tasted Pepsi than when they believed they had tasted Woolworth ($b = -.40$, $t = -4.1$, $p < .001$). Low exciting life and enjoying life participants did not differentiate ($b = -.06$, $t = -.5$, p = NS).

A regression on Drink Attitude and Intention scores (using the same predictors and steps) resulted in a nonsignificant

FIGURE 3

SOFT DRINK TASTE EVALUATION ACCORDING TO A LIFE OF EXCITEMENT AND ENJOYMENT VALUE ENDORSEMENT AND INFORMATION CONDITION (0 = INFORMED PEPSI VERSUS 1 = INFORMED WOOLWORTH)



first step ($r^2 = .06$, $F(6, 150) = 1.6$, p = NS), a sizable second step ($r^2 = .13$, $F(8, 148) = 2.8$, $p < .001$) containing the information condition main effect ($b = -.25$, $t = -3.3$, $p < .001$), and a two-way interaction in the third step ($b = -.25$, $t = -3.2$, $p < .001$; change in $r^2 = .06$, $F(1, 147) = 10.0$, $p < .001$; total $r^2 = .19$, $F(9, 147) = 3.8$, $p < .001$). Subsequent analysis revealed that participants who valued excitement and enjoying life had a more favorable attitude and purchase intention when they believed they had tasted Pepsi than when they believed they had tasted Woolworth ($b = -.44$, $t = -4.5$, $p < .001$). In contrast, low excitement and enjoying life participants had similar attitudes and intentions for Pepsi and Woolworth ($b = -.05$, $t = -.5$, p = NS).

Next, a Social Recognition and Power Value Endorsement score was calculated for each participant (by taking the mean of social recognition and social power). A regression analysis was performed on Drink Taste Evaluation score with the same steps as previous, but entering the main and interactive effects of social recognition and social power value endorsement in the place of exciting life and enjoying life value endorsement. Besides the age previously mentioned, the first step was not significant ($r^2 = .05$, $F(6, 148) = 1.2$, p = NS), while the second step was strong ($r^2 = .11$, $F(8, 146) = 2.4$, $p < .01$), constituting a significant main effect for information condition ($b = -.27$, $t = -3.5$, $p < .001$). The addition of the two-way interaction between social recognition and social power value endorsement and information condition improved the prediction ($b = -.17$, $t = -2.0$, $p < .05$; change in $r^2 = .03$, $F(1, 145) = 4.3$, $p < .05$; total $r^2 = .14$, $F(9, 145) = 2.7$, $p < .001$). Participants who endorsed social recognition and social power (two values symbolized by Pepsi) reported that the drink tasted better when they believed they had tasted Pepsi than when they believed they had tasted Woolworth cola ($b = -.39$, $t = -3.7$, $p < .001$). In contrast, low social recognition and social power participants rated Pepsi and Woolworth equivalently ($b = -.08$, $t = -.8$, p = NS).

Likewise, a regression on the Drink Attitude and Intention scores (with the same independent variables) produced a nonsignificant first step ($r^2 = .04$, $F(6, 148) = 1.0$, p = NS), a significant second step ($r^2 = .15$, $F(8, 146) = 3.4$, $p < .001$) driven by the main effects of social recognition and social power value endorsement and information condition ($b = -.22$, $t = -2.8$, $p < .001$; and $b = -.29$, $t = -3.8$, $p < .001$, respectively), and a significant interaction ($b = -.20$, $t = -2.5$, $p < .01$; change in $r^2 = .04$, $F(1, 145) = 6.5$, $p < .01$; total $r^2 = .19$, $F(9, 145) = 3.4$, $p < .001$). Low social recognition and social power participants rated Pepsi and Woolworth equivalently ($b = -.04$, $t = -.4$, p = NS), but participants who endorsed social recognition and social power had a more favorable attitude and purchase intention when they believed they had tasted Pepsi than when they believed they had tasted Woolworth ($b = -.45$, $t = -4.4$, $p < .001$).

Finally, Pearson correlations revealed that food taste evaluation was positively correlated with food attitude and purchase intention ($r = .66$, $df = 159$, $p < .001$), and drink taste evaluation was positively correlated with drink attitude and purchase intention ($r = .72$, $df = 159$, $p < .001$).

DISCUSSION

The significant two-way interactions between value endorsement and the information conditions suggest that human value priorities and cultural symbols influence taste evaluation and attitude toward products. There is a general consensus that red meat symbolizes social power and related values, while grains, vegetables, and fruits symbolize rejection of power (Allen and Ng 2003; Fiddes 1991; Twigg 1983). Our pilot survey was in agreement with these results: the beef sausage roll was more strongly viewed as representing social power than was the vegetarian alternative roll. In the main study, we found that participants who rejected social power had a more favorable taste evaluation, attitude, and purchase intention when they believed they had tasted a vegetarian alternative to a sausage roll than when they believed they had tasted a beef sausage roll, regardless of the product they actually ate. Participants who endorsed social power showed the opposite trend, though to a lesser degree. Further, participants who supported the values symbolized by Pepsi (exciting life, enjoying life, social power, and social recognition) had a more favorable taste evaluation, attitude, and purchase intention when told they had

tasted Pepsi than when they thought they had tasted the low-price Woolworth cola.

The actual soft drink brand given to participants had a significant main effect on taste evaluations, but the actual type of food provided to participants did not. Further, for both the food and beverage, Actual Product did not significantly interact with any other factor. Finally, most participants believed that the food (80%) and beverage (81%) they had tasted was the product described by the experimenter.

Taken together, the results support a subjective origin to taste evaluation; people compare the human values symbolized by a product to their human value priorities (see fig. 1). The level of value-symbol congruency affects the taste and smell of the product and one's attitude and behavior toward it. Previous studies had shown that value-symbol congruency affects consumer attitude and the ownership of durable goods, such as cars and sunglasses (Allen 2002; Allen and Ng 1999), but the present experiment reveals that the decision-making process also affects taste evaluation. Moreover, some alternative explanations seem unlikely. For instance, differences in the awareness and experience with the products could have accounted for the results, but, as reported, participants' current consumption of the various products was statistically controlled (in the first step of the regressions). Further, for the food taste test, high social power participants liked the food when told it was a beef sausage roll whereas low power persons liked the taste when they thought it was a vegetarian alternative. We suggested that this difference stemmed from the value-symbol congruity process, but an alternative explanation is that high social power participants may have had greater concerns about the opinions of others and hence rejected vegetarian foods, whereas low power persons may have been more open to vegetarian foods. However, human values regarding social power (which reflect one's desire to dominate and control others), and values related to conformity (which reflect a wish or need to avoid breaking social norms), are categorized into nonadjacent domains in Schwartz's (1994) framework, suggesting that these two value types are distinct constructs. Even if high social power persons have a greater need to conform, this tendency likely does not account for the present findings for two reasons. First, social desirability bias was statistically controlled (again, in the first step), and second, support for the value-symbol congruity process was also found for the soft drink taste test values (A life of excitement and enjoyment) that seemingly do not relate to conformity.

Limitations and Theoretical Implications

The effects of the value-symbol congruity process on taste evaluation reported here may be linked to a category-based judgment (Fiske and Pavelchak 1986; Geers and Lassiter 1999; Hoch and Ha 1986; Sujan and Dekleva 1987), whereby one assimilates (rather than contrasts) the perceived meaning of the item by ascribing a general concept or schema to the said product and overlooking any attributes that may contradict that image. That said, the present study did not measure whether participants used a category-based judgment or schematic processing. Nor did we measure expectation of taste, and large discrepancies between expected and actual experiences tend to be resolved via contrast processing (Cardello 1994; Deliza and MacFie 1996). Therefore, we cannot rule out the possibility that some participants may have contrasted their taste evaluations. Future research should investigate these factors in more detail.

However, there are several indications that a category-based judgment plays a role in the evaluation of symbolic meaning. First, cultural symbols tend to be located on the product whole (e.g., brand name, product class or category), not in independent tangible attributes (Holbrook and Moore 1981; Keaveney and Hunt 1992; McCracken 1988). Second, semantic memory comprising generic beliefs about the world (e.g., norms, expectations) appears to be a part of the same neocortical system that controls schema knowledge (McClelland, McNaughton, and O'Reilly 1995). Thus, because symbolic meaning contains generic information about the world, evaluating symbolic meaning may call upon schematic and category-based judgments. Third, symbolic meaning contains both human values (the focus on the present study) and social categories (e.g., nationality, gender; McCracken 1988), and thus its assessment may inherently require categorical thinking. And finally, culturally relevant and recognizable stimuli appear to be processed schematically (Forgas 1985), and the value-symbol congruity process investigated here was for long-established brands and general categories, which are by nature relevant and recognizable. In any case, future research should determine if (and why) symbolic meanings are evaluated in a category-based, schematic fashion.

In addition, a better understanding is needed of how the value-symbol congruity process affects one's experience of a product. We had proposed, based on self-congruity theory (Sirgy 1982), that one compares the human values symbolized by a food or beverage to one's values and self-concept, and that value-symbol congruency leads one to experience a good-tasting product and develop a more favorable attitude and purchase intention; incongruence leads to the opposite. In this way, the model is consistent with the well-documented (Fieldhouse 1995) cross-cultural differences in food habits and taste preferences (i.e., different cultures assign different symbolic meanings to different foods and drinks), as well as the persistence of food habits (i.e., societies use certain foods and beverages to socialize individuals into their cultural practices). Furthermore, our model can also help explain individual differences in food choice (and therefore social change), as each person assesses congruency independently.

However, this conceptualization is overly simplistic. For instance, beef rolls and vegetarian alternatives and name brand and store brand soft drinks differ on many factors (e.g., quality, costs, etc.) other than those proposed in our value-symbol congruity process, and so we do not mean to

suggest that other factors are not involved. Moreover, consumers who have less information about particular social roles use products to develop their self-concept, whereas those with a high awareness of their roles use products to express their self-concept (Leigh and Gabel 1992; Solomon 1983). Thus, future research should investigate whether children, adolescents, and adults undergoing major life changes use long-established food and beverage brands and general food and beverage categories to develop their self-concept, and adults (not experiencing major life changes) use these objects to express their self-concept. Further, we considered the self-concept and values within a one-dimensional framework when the self-concept may consist of three major dimensions (public self, private self, and hedonic self; Greenwald and Breckler 1985), and different values may be tied to different dimensions of the self-concept. Indeed, Laverie, Kleine, and Kleine (1993) found that consumers sought different product experiences to express different dimensions of the self-concept and values.

How the value-symbol congruity process affects consumer experience could also be assessed using other conceptual frameworks. For instance, further research could evaluate whether influences of "brand personality," which Aaker (1997) defined as the human characteristics associated with a brand, would lead to similar results. Her study found that there were five dimensions of brand personality, three of which parallel the human value-infused symbolic meaning posited in the present study: the personality trait of Ruggedness (tough, strong) maps our social power human value dimension, and the Excitement (daring, spirited) personality trait meshes with the excitement and enjoying life human values. Our results should also be reconsidered using other frameworks of consumption practices (Holt 1995; McCracken 1988). McCracken (1988) suggests that advertisements, the fashion system, celebrity endorsements, and the like transfer meanings from culture to product, and then consumers transfer these cultural meanings from the product to themselves through consumption modes and/or rituals.

For foods and beverages, transferring cultural meaning from the product to the consumer is particularly potent because foods and beverages are ingested. Rozin (1996, 20) argued that eating "is the principal mode of material transaction between the world and the person." This transfer may be accomplished by various consumption modes. For instance, Holt's (1995) typology of consumption practices describes an "appreciating" mode in which aesthetic and emotional frameworks are applied to objects and actions. In a study of a baseball park, he suggested, "appreciating the hot dog is primarily driven by the consumption of its meanings based on the local framework of baseball. The sweaty, unadorned hot dog serves as a concrete symbol of professional baseball and baseball spectating, and these valued meanings have become imbued and naturalized to the extent that the hot dog actually tastes better" (Holt 1995, 6). Thus, when a product symbolizes values that a consumer endorses, s/he likely experiences the product through an appreciation mode that leads to positive taste evaluations, and attitudes and behavior intentions. In any case, the present study makes plain that ordinary consumption practices (e.g., consuming soft drinks and everyday foods) may shape or express identity. A consumption experience need not be dramatic and unusual (e.g., special foods used during holidays, rites of passage, and so forth; Fieldhouse 1995).

The present study was also limited to the extent that self-congruity theory is limited. For instance, one criticism of self-congruity theory is that it is incapable of predicting the precise way that one may pursue inconsistency reduction (Insko 1967). Further, studies on the effects of a need for consistency have been difficult to replicate, leading to a debate over whether there is individual variation in the need for consistency (Cialdini, Trost, and Newsom 1995). Indeed, the present study did not measure each participant's need for congruity but, rather, assumed that the motivation drove the congruity that emerged, when the congruity could have emerged for other reasons. Thus, future research should measure each participant's need for consistency, as a general motivation and in value-symbol assessment. Likewise, to evaluate the role of symbolic meaning on taste evaluation, the present study experimentally manipulated the product participants thought they were tasting. Allen (2002) showed that the human value content of a product's symbolic meaning could be manipulated by informing participants of fictitious market research showing that people who like certain kinds of products endorse certain values.

Moreover, self-congruity theory assumes that the social system alone defines the meanings of objects, whereas there is some evidence that individuals can also create product meanings (Csikszentmihalyi and Rochberg-Halton 1981; Giddens 1991). Consumers use products to create new social roles, gain new insights, and ascribe their own symbols (i.e., concepts and abstract ideas) to the object. Thus, taste evaluations and the assimilation of symbolic meaning may be affected by not only the cultural content but also unique abstract meanings.

Future research should assess whether mood is involved in the effect of value-symbol congruity on taste evaluation. There is some evidence that symbolic meanings tend to be judged affectively (Chaudhuri and Buck 1995; Mittal 1994). Further, symbolic-interaction theory suggests that individuals use the symbolic meanings of objects to imagine how other people perceive them (Mead 1934), and consumers evaluate symbolic meanings by imagining how they will look and feel while using the product (Mittal 1994). This kind of self-referring imagery is known to increase affectivity (Bone and Ellen 1992; Goossens 1994). Moreover, previous research shows that once someone has developed a preference for an object, any subsequent information about that object may be distorted (Klayman 1995; Russo, Meloy, and Medvec 1998) and that this bias is strongest when a person is in a positive mood (Meloy 2000; Miniard, Bhatla, and Sirdeshmukh 1992). Thus, future research should investigate whether providing consumers with symbolic information (such as that ascribed to long-established brands and general food and beverage categories) prior to tasting

may put those who support the values symbolized by the product in a good mood; at that point, these persons may seek out information that confirms their belief and distort information that contradicts their belief, leading them to experience a favorable taste.

Another worthwhile direction of future research would be exploring other consumer goods and services. Some previous studies have suggested that consumers judge their level of satisfaction with a product by assessing the extent to which it satisfies deeper desires and goals (Olshavsky and Spreng 1989). Perhaps for any good or service, people who endorse the values symbolized by the product have a satisfying experience, whereas those who reject the values may experience dissatisfaction. On the other hand, food and beverages are unique in that the body absorbs them, and thus people likely strive to ensure that the cultural symbols of products they ingest are consistent with their human values. The consequence of eating or drinking products with symbolic meanings that are inconsistent with one's self-concept can be viewed as a type of contamination (Rozin 1996). This raises another intriguing question for future research. The results of the present study showed that when participants (falsely) believed that they had tasted a product that symbolized values in conflict with their own values, most experienced an unfavorable taste and had a negative attitude toward the product. However, some people may cope with value-symbol incongruity by changing the values they endorse. If so, human values may be more flexible and dynamic than assumed in the present study.

Other Implications

Our present findings may have implications for efforts to promote better eating habits. There is a growing concern that the dietary patterns of Western societies need improvement. Despite the nutritional and health benefits of a diet high in fruit and vegetables and low in meat, this is not the prevailing dietary pattern (National Nutrition Survey 1995). Heavy meat eaters claim that they eat meat because it tastes better than other foods, such as meat substitutes (Lea and Worsley 2003; Santos and Booth 1996). Our results challenge that claim. Participants who ate the vegetarian alternative did not rate the taste and aroma less favorably than those who ate the beef product. Instead, what influenced taste evaluation was what they thought they had eaten and whether that food symbolized values that they personally supported. Hence, strategies that might persuade heavy meat eaters to change their diet include changing the cultural associations of fruits and vegetables to encompass values that meat eaters endorse (e.g., power and strength) or challenging heavy meat eaters' assumptions about what tastes good by using in-store (blind) taste tests or showing them results of studies such as this one. Of course, we do not mean to imply that all responses are subjective. Some taste perceptions and evaluations appear to be innate and automatically regulated by physiological mechanisms. Furthermore, genetic properties can account for some individual differences in food choice, such as sensory differences (e.g., bitter sensitivity; Fischer et al. 1961) and the ability to process certain nutrients (e.g., lactose intolerance; Simoons 1978). Rather, our point is that subjective perceptions may contribute to unhealthy eating patterns.

For marketing professionals, our results reaffirm the importance of brand image and image-based positioning. Research by social scientists has endeavored to uncover the mechanisms that drive food and beverage choice (Clark 1998; Eertmans et al. 2001; Furst et al. 1996; Glanz et al. 1998). While this literature recognizes that practical factors (e.g., price, physical environment, and availability) affect food and beverage choices, these researchers have suggested that taste evaluation is the primary driving force. For instance, a survey of a representative sample of nearly 3,000 adult Americans found that respondents rated taste as the most important criterion for food choice (Glanz et al. 1998).

One interpretation of Glanz et al.'s (1998) finding is that marketing success requires a product that tastes good, and so marketers and manufacturers should focus their efforts on product development. For instance, they may perform blind taste tests on different combinations of ingredients and manufacturing processes to identify the blend that tastes the best. Indeed, the present study showed that, regardless of the brand participants believed they had tasted, those who actually tasted Pepsi reported a higher taste evaluation than those who tasted the low-price Woolworth cola. On the one hand, this might imply that Pepsi's objectively good taste, which Pepsi leveraged in its Pepsi Challenge campaign in the 1980s, may be responsible for Pepsi's success. But, of course, around the same time, blind taste tests suggested that Coke's new formula tasted objectively better than their existing one, but consumers rejected it. An objectively better taste is not decisive.

Instead, the present study found that the two foods taste objectively similar, and that for both the food and beverage taste tests, participants who endorsed the human values symbolized by the product they thought they had tasted reported a higher taste evaluation. Therefore, the positioning of a brand (in terms of its image) may influence marketing success as much as the product's objective taste, because image in fact affects taste, and taste is surely an important ingredient in the success of any food or beverage marketing strategy.

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