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Moral Overtones of Food: Judgments of Others Based on What They Eat

Richard I. Stein
Carol J. Nemeroff
Arizona State University

Previous research found that meal size can affect judgments of eaters' attractiveness and femininity. The present study investigates whether eating specific types of foods—namely, healthy, nonfattening foods versus unhealthy, fattening ones—gives rise to moral judgments about the eaters. Subjects were presented with one of four bogus profiles of a person, which differed only in gender and foods consumed. Subjects rated the target on morality; potential mechanisms of effects were also explored. Results confirmed the hypothesis that moral judgments of others differ depending on the foods they eat. This result was not simply due to a halo effect but was explained by two mediational mechanisms: the Puritan ethic and the “you are what you eat” principle. However, the effect did not show predicted moderation by subject or target gender, or restrained-eating status. Foods also seemed to influence subjects’ perceptions of fitness and weight information about the target.

Moral Aspects of Diet

Casual observation suggests that for modern Americans, food takes on moral significance through the extent to which it promotes or hinders valued traits, such as health and attractiveness. For example, people often look at a dessert and say, “It looks sinful.” Those who are tempted to break their diet say, “No, I’m trying to be good”; when they break their diet, they say, “I was bad today.” People with eating disorders are commonly reported to dichotomize foods as morally good or bad, depending on whether the foods are fattening or non-fattening (e.g., Bauer, Anderson, & Hyatt, 1986; Garner, Garfinkel, & Bemis, 1982; Johnson & Connors, 1987). It is unclear whether dieters also routinely dichotomize foods in this way (King, Herman, & Polivy, 1987), but it has been demonstrated that dieters feel they have blown their diet if they eat certain types of food, rather than a certain number of calories (Knight & Boland, 1989). If this is their criterion for ruining their diet, it is likely also to be a criterion for feeling guilty.

Cross-culturally, it is common for food to take on moral aspects, and in almost any society, some foods are socially prohibited. For example, the act of eating non-kosher foods, which are prohibited by Jewish laws, is considered a serious sin (Grunfeld, 1972/1982). Similarly, in India, certain foods are prohibited for members of some social castes; it is considered immoral and polluting for them to eat these foods (Appadurai, 1981).

“Morality” may seem too strong a word to describe beliefs or feelings about food in modern American culture, but Sobal (1984) has discussed Natalie Allon’s work that described weight-loss group meetings as a religious ritual during which members “sought salvation” from their “evil sin” of being fat. Such groups formalize the general guilt people have about overeating. If there is this much vice associated with fatness, it seems probable that there is also an immorality associated with the foods that make one fat. With regard to the morality of health value, newspaper columnist Ellen Goodman (1989) has written: “Pleasing our palates has become a secret vice, while fiber-fueling our colons has become an almost

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public virtue." This latter notion, indeed, is frequently applied in various advertising campaigns for breakfast cereal, among other things. Whorton (1982) has also noted the moralization of health and fitness.

We hypothesize that people make moral judgments of others based on the types of foods they eat. Specifically, we suspect that people judge others who eat unhealthy, fattening foods as more immoral and those who eat healthy, noncaloric foods as more moral. We believe that the degree of concern with diet in today's society goes beyond a motivation to be attractive, gender-role appropriate, and healthy. The American obsession with diet, focusing on fat content and health value, has taken on the force of a moral edict. Thus the primary goals of this study were to document moral judgments of others based on the foods they eat, to look for possible moderators of such effects, and to determine which of several possible mechanisms might underlie them.

Prior Empirical Evidence of Food-Based Judgments of Others

Previous research has indicated that the amount of food eaten can affect people's judgments of eaters' gender-role appropriateness and attractiveness. Chaiken and Pliner (1987) asked subjects to read food diaries of male and female targets; the quantity of food in the diaries was manipulated. Subjects rated women who ate less food as more feminine, less masculine, and more attractive, whereas the amount eaten did not affect judgments of male targets' masculinity or attractiveness. A follow-up set of studies by these authors demonstrated that subjects were aware of the personal qualities associated with the quantity of food eaten. In these studies, female subjects were paired either with men or with other women, and asked to eat crackers with assorted toppings. The women paired with men ate less, especially when the men were perceived as socially desirable. A separate set of subjects were asked to indicate, by marking a distance on a line running from extremely small amount to extremely large amount, how much food they would eat if they were trying to make various impressions. Both sexes indicated that they would eat less if trying to appear feminine, and more if trying to appear masculine (Mori, Chaiken, & Pliner, 1987; Pliner & Chaiken, 1990). Along similar lines, Basow and Kobrynowicz (1993) asked subjects to watch one of four videos, each with the same average-weight woman eating a meal. The videos varied only in the meal eaten, with meals varying both in gender typicality (salad versus meatball sandwich) and size (how much of those foods). The eater of the small salad was rated as having the most typically feminine expressive traits, and the eater of the large meatball sandwich was rated as the least physically attractive.

POSSIBLE EXPLANATORY MECHANISMS

Magical Contagion and "You Are What You Eat"

One reason moral judgments of others might be influenced by the foods they eat comes from the "you are what you eat" principle, derived from the magical law of contagion originally described by Frazer (1890/1951). The law of contagion holds that objects that have been in contact with one another can exert an influence on each other, even after the contact has ceased. Influence occurs through transmission of "essence"—a physical or "spiritual" residue that contains the source's important qualities, be they physical, moral, or psychological. (For example, a sweater worn by Hitler would contain his "evil.") Magical contagion may be thought of as similar to a cognitive heuristic of the following form: Contact causes influence, via the transfer of essence. However, whereas heuristics are generally described as simplification strategies (see Nisbett & Ross, 1980; Tversky & Kahneman, 1974), we consider magical contagion merely as a systematic bias toward a particular pattern of association, not necessarily tied to cognitive economy (see Rozin & Nemoff, 1990, for more on the law of contagion).

The "you are what you eat" principle is one type of contagion, in which people are believed to take on the properties of the foods they eat. Such beliefs are extremely common cross-culturally (e.g., Frazer, 1890/1951). This is not surprising, because complete incorporation of a source, as in ingestion, is obviously the most potent kind of contact. Nemoff and Rozin (1989) have found evidence among college students in the United States of implicit belief in the "you are what you eat" principle in its very concrete, magical sense. In that study, subjects read that a fictitious tribe hunted both marine turtles and wild boars. Half read that the tribe ate only boars; the other half read that they ate only turtles. Subjects then rated the average male member of the culture. Boar eaters were rated as having more boar-like qualities (e.g., good runners, heavysset); turtle eaters were rated as having more turtlelike qualities (e.g., good swimmers, long-lived). The study was replicated, and the results were similar. The implication for moral contagion is clear: By the "you are what you eat" account, if people see fattening, unhealthy foods as bad, they might also believe, probably implicitly, that the badness could be passed onto the ingesters.1

The Puritan Ethic

Another pathway to the hypothesized morality-food link is the Puritan ethic account. The Puritan ethic holds that one should be industrious and deny pleasures and immediate gratification to the self, the assumption being
that one eventually is rewarded for self-discipline, hard work, and restraint from overindulgence (Mirels & Garrett, 1971). These ideals would seem to be an integral part of thinking in the (Puritan-founded) United States, not specifically tied to any religion. Eating behaviors could be seen to reflect one’s level of adherence to the Puritan ethic. For example, eating ice cream might suggest a lack of self-discipline or a tendency toward overindulgence; eating fast food might be seen as indicating laziness. Targets eating bad foods would then be seen as immoral because they are violating ideals of the Puritan ethic. Consistent with this account, Whorton (1982), in his book on health faddism, has noted that “immorality is often [seen as] the result of weak-willed submission to appetites and passions” (p. 6).

Taboo-Breaking

A third reason why bad-food eaters might be considered more immoral than good-food eaters is that they can be viewed as breakers of a social norm that has the force of a taboo. The revised edition of Webster’s New World Dictionary defines taboo as “a sacred prohibition making certain people or things untouchable.” A taboo-breaking framework would hold that our society has strict, although perhaps largely unstated, rules that define what are acceptable eating behaviors (e.g., most Americans do not eat dogs). If one argued that there is an almost-religious prohibition in our society against eating foods that promote fatness and poor health, then eaters of bad foods might be judged immoral because they are breaking the societal taboo regarding such foods.

Halo Effect

Finally, one could imagine food-related moral judgments to be based in simple halo effects. By this account, a good-food eater would be perceived as health- and weight-conscious (positive attributes) and would, therefore, make an overall positive impression. This would not occur through any specific belief structure (e.g., “follows social norms” or “adheres to the Puritan ethic”) but rather as a result of general perceptual “spillover.”

By presenting alternative pathways that might lead to a morality-food effect, we do not mean to suggest that one explanation should necessarily account for all the variance and win out over the others. Indeed, we think it very likely that with regard to things as psychologically primary as eating and social judgment, multideterminism is the rule. To the extent that a morality-food effect occurs, we are interested not in which explanation is correct, so much as in the relative contribution of each.

POSSIBLE MODERATORS OF THE MORALITY-FOOD LINK

Sex Differences

It seems likely that in the current culture of the United States, sex differences might show up in the extent to which moral judgments are made based on food, especially if a taboo mechanism is operative. Societal strictures on eating unhealthy, fattening foods are likely to apply more strongly to women than to men, given the differential importance placed on eating, food, and attractiveness (including thinness) for the genders. For example, women’s magazines have been shown to contain many advertisements for both food and diets, whereas men’s magazines tend to have neither (Silverstein, Perdue, Peterson, & Kelly, 1986). In fact, the media frequently seem to promote the idea that a man’s body is invulnerable and can withstand the effects of unhealthy food. Silverstein et al. (1986), for example, have observed that the only “foods” advertised more frequently in men’s magazines than in women’s were alcoholic beverages. Hayes and Ross (1987) have found that although men and women scored equally on a scale measuring concern with health, men ate significantly less-healthy diets than did women. We postulate that eating a somewhat unhealthy diet may be linked with machismo, and so might be viewed as a positive trait in men. Thus eating unhealthy foods might be considered positive, neutral, or simply less negative for men relative to women.

Women and men may also differ in the extent to which food affects their judgments of others, because females appear to be more attentive to food in general (Polivy & Herman, 1983).

Although sex differences seem likely, not all of the proposed mechanisms explicitly predict them. For the “you are what you eat” explanation, sex difference predictions regarding the sex of the target are unclear. Societies that rely heavily on the “you are what you eat” and other contagion belief systems often consider the genders to be differentially susceptible to such influences but vary as to which sex is seen as more vulnerable. As far as the sex of the subject, there is no reason to expect sex differences in using a “you are what you eat” heuristic. The Puritan ethic explanation also leaves gender predictions hazy for the sex of the target. Although it seems likely that the Puritan ethic is valued equally in men and women, it may be that for men, qualities unrelated to food, such as work habits or self-sufficiency, are the criteria for judging a Puritan ethic lifestyle. There seems to be no reason to expect differences by sex of the subject based on a Puritan ethic mechanism. Finally, a halo account would result in stronger effects for a female than a male target only if eating good foods is seen as
more positive for women to begin with. The halo account does not predict any effects for sex of the subject.

Thus, although previous research and a taboo mechanism lead us to expect that gender will moderate any morality-food effects, the other possible mechanisms are unclear about this prediction.

**Restrained Eating**

Finally, we were interested in the possibility that morality-food associations might play a role in restrained eating. There has recently been a steady increase in dieting behavior, although various harmful physical and psychological effects of these behaviors have been documented (e.g., Garner, Olmsted, Polivy, & Garfinkel, 1984; Polivy & Herman, 1983, 1987).

We were interested in whether female restrained eaters would show a stronger tendency to associate food with morality than would female nonrestrained eaters. This would raise the possibility that such thinking is a motivating factor for restrictive eating behaviors, and this might also explain the effect—described by Polivy and Herman (1985)—that dieters act, and explain their restrained eating behaviors, as if these behaviors were imposed on them, rather than seeing them as a personal choice.

**GOALS OF THE STUDY**

Our primary goal was to see whether people make moral judgments of others based on whether they eat healthy, nonfattening (good) foods or unhealthy, fattening (bad) foods. Secondary goals were to explore moderator effects of the sex of the rater and the sex of the target, and restrained eating status of female raters. We wished as well to replicate prior findings regarding effects of eating behaviors on judgments of femininity/masculinity, attractiveness, and likableness, to see whether the type of food eaten results in effects similar to the amount of food eaten. We also suspected that food information would affect subjects’ perceptions of fitness or weight data given about the target, depending on whether the food information seemed consistent or inconsistent with this other information. Finally, we wished to examine the relative contributions of various possible mediational mechanisms. Our hypotheses were as follows:

**Hypothesis 1:** The healthiness and fatteningness of foods eaten by a target will affect judges’ perceptions of that target’s level of morality; good-food eaters will be judged as more moral than bad-food eaters.

- a. Morality-food effects may be moderated by the sex of the target, such that females are judged more harshly for eating bad foods than are males. For males, bad-

food eaters may be rated either similarly to, or even more positively than, good-food eaters.

- b. Morality-food effects may also be moderated by the sex of the rater, such that women rate targets who eat bad foods more harshly than do men.

- c. For female raters, dietary restraint status may moderate morality-food effects, such that restrained eaters judge targets who eat bad foods more extremely than do nonrestrained eaters.

**Hypothesis 2:** Prior findings regarding general judgments of targets based on the amount eaten will be replicated with the type of food eaten, with possible moderation by sex.

**Hypothesis 3:** Type of food eaten will affect subjects’ perceptions of inconsistent information provided about the target. For example, bad-food eaters described as fit will be rated as less so than good-food eaters described as fit. Such effects may also be moderated by sex.

**Hypothesis 4:** One or more of the proposed mediating mechanisms (contagion, Puritan ethic, or taboo) will significantly account for moral effects, whereas halos will not be sufficient to account for these effects.

**METHOD**

**Subjects**

A total of 342 students were recruited from undergraduate psychology classes. Of these, 52 were eliminated from analysis, because they correctly guessed the hypothesis in the post hoc suspicion probe (3 subjects), because of obviously arbitrary response patterns (8 subjects), or because they did not pass a manipulation check whereby they rated how fattening, unhealthy, and unwholesome the foods were (i.e., did not perceive the good versus bad foods as such; 41 subjects). Among these last 41 subjects, non-Caucasians were overrepresented (30%, compared with 16.4% of the total sample). Most of those who failed the manipulation check failed to consider the bad foods as bad (30 of 41 subjects; only 11 did not consider the good foods as good). The final sample of 290 subjects consisted of 150 (51.6%) women and 140 (48.4%) men. The mean age was 21.04 years ($SD = 4.60$).

**Derivation of Independent and Dependent Measures**

**Food lists.** Two food lists were derived from a pilot study. Foods were selected based on consistent identification as good or bad, for reasons of health value or calorie content, but not taste. The good foods were fruit (especially oranges), salad, homemade whole-wheat bread, chicken, and potatoes. The bad foods were steak, hamburgers, French fries, doughnuts, and double-fudge ice cream sundaes.

**Adjective checklist.** A universe of moral adjectives was compiled by the experimenters from various sources.
From these, 7 were selected based on a second pilot study, in which subjects rated how important each adjective was for judging a person’s morality. Only those with a mean rating of more than moderately important were included in the morality scale. In addition, five non-moral traits, all rated as less than moderately important, were selected for control purposes.

Also included in the checklist were adjectives assessing attractiveness, gender-role appropriateness, and likableness, as a partial replication of previous research. There were also items checking subjects’ retention of the profile information, and items relevant to exploring three specific mechanisms for a moral effect and two types of halo (see discussion below). A complete list of traits used is presented in the appendix.

**Information Controlling for “Rational” Artifacts**

Steps were taken to isolate a “pure” food effect, and control for “rational” artifacts, as follows. One reasonable assumption would be that the target eats fattening foods, the target is fat. A second would be that because the target eats unhealthy foods, the target is not healthy conscious in general. This in itself could be seen as immoral, based on the belief that “the body is a temple” and that one should take care of it. To limit the degree to which the targets should reasonably be seen as generally careless about their health and body weight, they were described as active and fit people who regularly run and play tennis, and their height and weight were included in the profile. The study used average heights (5-foot, 4-inch and 5-foot, 10-inch) for females and males in the age range 19-22 years, taken from the Nutrition Council of Health Statistics (Church & Church, 1989). Weights (125 and 138 pounds) were chosen based on prescribed healthy weight ranges for each and respective height, according to tables by the Food and Nutrition Board of the National Academy of Sciences (Church & Church, 1989) and the Metropolitan Life Insurance Company of New York (1983).

**Derivation of Measures of Mechanisms**

For measuring each of the three specific mechanisms, two items each were included in the adjective checklist (see appendix). For “you are what you eat” (contagion), the items were selected based on face validity, to essentially define the concept of contagion from ingesting a bad source. For the Puritan ethic, the items were based on the Protestant Ethic Scale (Mirels & Garrett, 1971), selected to best capture the central thrust of the scale. For taboo and health halo, the items were again face valid, basically restatements of our definitions of these mechanisms.

**Procedure**

Subjects read the following instructions:

We are interested in how accurately people can make judgments of other people, when they only know a small amount of information about them. We are most interested in which types of minimal information lead to the most accurate judgments.

To find this out, we are giving different subjects in this experiment different bits of information about an actual person. We will compare the ratings of that person made by subjects who know different types of information.

Below is a part of a description of an ASU student who participated in an experiment last semester, in which he filled out questionnaires about various aspects of his life. Please rate this person on the checklist below, basing your judgments on the information that you have been given. We have actual ratings on this person, and want you to use what you know to come as close as you can to these ratings.

Subjects were given a profile of a bogus person. The profile included the foods most commonly eaten by the person, which were either good or bad, as well as information about the person’s preferred activities, fitness level, height, and weight. Subjects were randomly given one of four forms of the profile, differing in the sex of the person described and the food list (good vs. bad). As an example, the profile for the female good-food eater read as follows:

Jennifer is a 21-year-old, female ASU student. She describes herself as active and physically fit, and says she regularly enjoys tennis and running. She is 5’4” tall, and weighs 125 pounds. The foods she eats most regularly are fruit (especially oranges), salad, homemade whole-wheat bread, chicken, and potatoes.

Subjects rated the person on a list of bipolar trait dimensions, using a 8-point Likert-type scale. Subjects also completed a postexperimental manipulation check, in which they rated on a 9-point scale how healthy, fattening, and wholesome the target’s listed foods were, and then filled out a suspicion probe. Finally, the subject filled out the 10-item Revised Restraint Scale (Herman, Polivy, Pliner, Threlkeld, & Munic, 1978) for dieting-status classification.

**RESULTS**

**Tests of Morality-Food and Moderator Effects**

The morality scale, consisting of the seven moral trait dimensions, showed satisfactory internal consistency (Cronbach’s alpha = .69). Subjects were assigned morality scale scores by averaging their ratings on the seven morality trait dimensions after adjusting for those items presented in reverse direction. A 2 (Good/Bad Food) × 2 (Male/Female Target) × 2 (Male/Female Rater) ANOVA was done on the morality scale. Cell means are shown in Table 1. There was a main effect of food type,
$F(1, 279) = 44.68, p < .001$, indicating that targets who ate good foods were indeed rated as more moral than targets who ate bad foods. However, no two- or three-way interactions reached significance, indicating no moderator effects of the sex of the target, or the sex of the rater, on the morality effect.

To test the hypothesis that morality-food effects would be stronger for subjects higher in restrained eating, females were classified via a median split on the Revised Restraint Scale (Herman et al., 1978) as high or low restraint. A $2 \times 2 \times 2$ (High/Low Restraint) ANOVA was done on the morality scale for male subjects only. (Males were excluded from this analysis, because restrained eating among men has not been studied and may well be conceptually different for them.) No significant two- or three-way effects were found, indicating no moderating effect of restraint status on the morality-food effect.

**Effects on Overall Impression of Target**

To test the hypotheses (based on prior research) that good-food eaters would be seen more positively in general and would be viewed as more feminine, as compared to bad-food eaters, a $2 \times 2 \times 2$ (Male/Female Target) ANOVA was done on the trait dimensions femininity/not-femininity, masculine/not-masculine, and likeable/unlikeable. The latter two were combined, because they are almost identical conceptually and because they correlated $r(285) = .75, p < .001$. The traits feminine/not-feminine and masculine/not-masculine were not combined, because previous studies have found that judgments about masculinity and femininity interact differently with food behaviors (i.e., with how much a person eats).

The main effect of food type was significant, $F(4, 274) = 4.35, p = .002$. Univariate analyses showed eaters of good foods to be rated as more feminine, likeable, and attractive, and less masculine than the eaters of bad foods (see Table 1 for means and univariate significance levels). There was also a significant three-way interaction of Sex of Rater $\times$ Sex of Target $\times$ Food Type, $F(4, 274) = 2.55, p = .040$. Only the composite measure of attractiveness contributed to this effect, univariate $F(1, 277) = 4.03, p = .046$. Simple effects showed that females rated males who ate good foods as especially attractive. Results of a separate MANOVA showed no interactions of these food effects with restraint status.

**Effects of Food Type on Weight and Fitness Judgments of Target**

To assess the possibility that the information provided about the target's fitness level and weight might be differentially interpreted depending on what foods the target was depicted as eating, a $2 \times 2 \times 2$ (Male/Female Rater) MANOVA was done on the trait dimensions active/inactive, fit/out-of-shape, fat/not-fat, thin/not-thin, and the manipulation check. The multivariate main effect of food type proved significant, $F(5, 257) = 218.61, p < .001$. Univariate analyses showed that the eaters of good foods were rated as more active, more fit, more thin, and less fat than were the eaters of bad foods (see Table 1 for means). The multivariate main effect of the sex of the rater was also significant, $F(5, 257) = 4.18, p < .001$; females rated all targets as more active, more fit, and less fat than did males. The multivariate main effect of the sex of the target was also significant, $F(5, 257) = 3.76, p = .003$; male targets were rated as less fat than were female targets, and according to the manipulation check, all foods were rated as more healthy, wholesome, and nonfattening when they were eaten by male targets. Finally, the multivariate interaction between the sex of rater and the food type was marginally significant, $F(5, 257) = 2.18, p = .057$; only the manipulation check contributed to the effect. Simple effects indicated that females rated both lists more extremely than did males—that is, females rated the good foods as more healthy, nonfattening, and wholesome, and the bad foods as less so, than did males. A separate MANOVA indicated no effects of restraint status on ratings of weight or fitness of the target, or ratings of the qualities of the food.

**Investigation of Possible Mediation Pathways to Moral Judgments**

As an initial test of potential mechanisms of the morality-food effect, a $2 \times 2 \times 2$ (Male/Female Target) MANOVA was
done on the five nonmoral control traits included on the adjective checklist, to test for a global halo effect. The multivariate main effect of food type was significant for these traits, $F(5, 271) = 13.61, p < .001$; all five trait dimensions contributed to the effect (see Table 2). Targets who ate good foods were rated more in the direction of the following traits as compared to targets who ate bad foods: morning person, practical, methodical, quiet, and analytical.

To test whether this main effect of food type could be attributed to a positive or negative halo effect, ratings from the morality-loading pilot study were used. Subjects had rated each end of all potential trait dimensions as either positive, neutral, or negative—that is, they had given global affective ratings of each dimension. If a global halo is at work, good-food eaters should be rated more toward the positively valenced end of every control dimension. Thus, for each pair of traits that made up a control dimension, a $t$ test was done comparing the two traits’ affective-valuation ratings. Significant differences were obtained for all five pairs. However, for four of the five pairs, ratings of positivity/negativity went in the opposite direction from the food-type main effect—that is, bad-food eaters were rated more in the direction of the positive traits than were good-food eaters.

As discussed above, nine items were included on the checklist to allow assessment of three possible specific mechanisms for the morality effect, and a health halo. Two items reflected the Puritan ethic (hard-working/lazy and disciplined/undisciplined; Cronbach’s alpha = .724); two items tested the “you are what you eat” contagion mechanism (pure/polluted and clean/tainted; alpha = .691); two items assessed the taboo-breaking account (honors social taboos/ignores social taboos and follows norms/breaks norms; alpha = .423); and three items (healthy/unhealthy, health conscious/not health conscious, and well-balanced/one-sided; alpha = .773) were used to assess whether the perception that the person was generally health conscious could act as a specific sort of halo, a health halo.

In addition, a subset of items regarding overall impressions of the target (good-looking/not good-looking, attractive/unattractive, and likable/unlikable; alpha = .729) was used as a second test of whether a general tendency to see the person in a positive light could account for the morality ratings (i.e., a global halo).

Path analysis was done using the LISREL modelling program from SPSS (Jöreskog & Sörbom, 1989) to test the relative strengths of the five possible mechanisms as mediational pathways between food type and morality ratings. This analysis provided beta weights for all paths: from food type to each mediator, from each mediator to the morality rating, and the direct path from food type to morality rating. Essentially, this simultaneously conducted all the regression equations represented by these paths, while controlling for each other. Thus this approach measured the relative contribution of each mediator to the total effect, taking into account the effects of the other mediators. Because the taboo mediator did not meet Baron and Kenny’s (1986) criteria for a mediational relationship when included with all the others, it was dropped from the path analysis.

Figure 1 shows the magnitudes of the betas in the final path analysis. MacKinnon and Dwyer (1993) have provided formulas for testing the magnitude and significance of a mediational path. For each mediator, the magnitude is calculated by taking the product of the betas of (a) the path from food type to mediator and (b) the path from mediator to the morality rating. The significance of this product is tested via a $t$ test, calculated with a multiplied combination of the standard errors for the paths as the denominator. The magnitude and significance of the mediated pathways are listed in Table 3. All four mediational pathways are significant; however, the magnitudes are stronger for the theoretical mechanisms, weaker for the health halo, and weakest for the general halo.

DISCUSSION

Overview of Findings

Our results strongly support the hypothesis that people make moral judgments of others based on the foods they eat. Good-food eaters were also found to be rated as more feminine, attractive, likable, and less masculine than were bad-food eaters; thus our findings with the type of foods eaten were similar to previous findings regarding the amount of food eaten.

Particularly intriguing, we think, is our finding that food information influenced interpretation of other contrasting information known about the target. Targets in this study regularly ran and played tennis, described

### Table 2: Univariate Analyses of Nonmoral Control Trait Dimensions for Main Effect of Food Type

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<th>Significance Level</th>
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</tbody>
</table>

NOTE: Ratings could range from 1 to 8. Higher numbers indicate more in the direction of the trait on the right side of the slash.
themselves as fit and active, and had identical specified heights and weights across food conditions. Inasmuch as eating bad foods made this information either less salient or less believable to subjects, people might be said to have a prejudice against people who eat bad foods; Allport (1954/1987) pointed out in his classic book that prejudice involves an "irrational prejudgment that disregards the facts" (p. 23).

The morality-food effect was not moderated by the sex of the rater, the sex of the target, or restraint status of female subjects. This lack of moderation is consistent with the failure of the taboo mechanism to prove significant; it is particularly interesting as well, in that female subjects did show a tendency to rate the foods more extremely than did males. That is, differential judgments of foods by the genders did not translate into differentially strong moral judgments of the person eating those foods. Judgments about the foods were also moderated by the sex of the target, such that all foods were seen as more healthy and nonfattening when eaten by males rather than females; this apparently indicates a sense of invulnerability associated with males' bodies. Given the additional finding that females rated males who ate good foods as especially attractive, this overall pattern indicates that although the machismo account may be true, machismo is not seen as attractive.

Finally, the path analysis clearly demonstrated that morality-food effects cannot be "explained away" as either general-halo or specific health-halo effects. Rather, two specific explanatory mechanisms, the magic-contagion-based "You are what you eat" account and the Puritan ethic account proved the strongest mediators of moral effects. Taboo, although related to food type eaten, did not alter moral judgments.
TABLE 3: Parameters for Each Mediational Pathway

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Magnitude</th>
<th>t Test</th>
<th>Percent of Morality-Food Effect Accounted for by This Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>General halo</td>
<td>.04</td>
<td>2.33*</td>
<td>9.3</td>
</tr>
<tr>
<td>Health halo</td>
<td>.09</td>
<td>2.58**</td>
<td>20.9</td>
</tr>
<tr>
<td>“You are what you eat”</td>
<td>.12</td>
<td>4.64***</td>
<td>28.0</td>
</tr>
<tr>
<td>Puritan ethic</td>
<td>.13</td>
<td>4.56***</td>
<td>30.2</td>
</tr>
<tr>
<td>None (direct path)</td>
<td>.05</td>
<td>0.69</td>
<td>11.6</td>
</tr>
<tr>
<td>Total</td>
<td>.43</td>
<td></td>
<td>100.0</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01; ***p < .001.

Limitations of the Present Study

There are some limits on the extent to which we can expect our findings to generalize. As noted above, 41 subjects were eliminated at the outset for failing to consider the good versus bad foods as such, and non-Caucasians were underrepresented in this group. This most likely indicates that different subcultures have varying ideas about the implications of the foods one eats. Whether they do not attach morality to eating specific types of foods or (more likely) whether they use different criteria to divide moral from immoral foods remains an open question. Furthermore, it seems possible that college-aged youth might be more focused than other age groups on attractiveness, fitness, gender-role appropriateness, and so on; thus our sample might have been more likely than other groups to judge people based on eating healthy and nonfattening foods. Finally, we know little about our subjects’ own eating habits, other than the extent to which female subjects are “on diets.” It would be interesting to know to what extent subjects viewed themselves as eating mostly healthy foods, how many were vegetarians, and so forth, and to explore how such self-perceptions affected judgments of the target.

Another limitation of the study concerns the format of presentation of control information about the target. It may be, for example, that food information affected subjects’ processing of fitness and weight information, because the latter information was presented in a difficult-to-visualize numerical format. A future study might supplement verbal descriptions with a picture of the target, or present information via video clips (as in Basow & Kobrynowicz, 1993) to improve the accessibility of this information.

Another methodological limitation was an unintentional ambiguity in wording leading to a potential discrepancy in the “cover story” versus actual instructions. On the adjective checklist, the instructions read: “Please rate the extent to which each adjective describes the person you just read about, by circling the number that best describes the person based on the information you read.” The instructions reflected our intent that subjects give their own impression. The initial cover story had stated that we had “actual ratings” of the target and that we wanted subjects to come as close as possible to these actual ratings. It is possible that some subjects may have understood the “actual ratings” to have been self-ratings that the targets made of themselves. Thus some subjects may have thought (from the cover story) that they were to try to duplicate how the targets rated themselves, which was not our intent. It is unclear what effect such a mind-set would have on subjects’ ratings, but we think it likely that most subjects viewed their task as that of giving their own judgments of the target, because this is what was specified in the last instructions they saw.

A final factor that may have affected subjects’ ratings is the consistency of the food information with the other information given about the target. Eating good foods might have been viewed as implying a generally healthy lifestyle, and thus be seen as consistent with the targets’ describing themselves as active, fit, and exercising regularly. The opposite would be true for the bad-food-eating target. The difference in morality ratings might, then, have been due in part to the perception that bad-food-eating targets either did not describe themselves accurately/honestly or that they conducted themselves inconsistently with regard to health-promoting behaviors (akin to a person who orders an ice cream float with diet coke). Along similar lines, the bad-food-eating targets who were still of average weight might have been seen as not getting what they deserved, and thus subjects may have felt some resentment that these targets could eat such fattening foods and still be fit and maintain their weight, again partly contributing to subjects’ morality ratings of the target. Future studies should follow up on these additional explanatory accounts.

Conclusions and Directions for Future Research

The strong morality-food effect, when combined with the finding that contrasting information is overlooked or minimized, raises the possibility that people may alter their food behaviors because of shame or fear of eating bad foods in public. If the latter finding were to hold up when a picture of the target was included, it would indicate that people have good reason for caution concerning their public eating behavior. It would suggest that food behaviors so powerfully influence others’ perceptions that observers become relatively blind to other information that should rationally affect their impressions. Also, if people’s judgments of themselves are similarly influenced, some may suffer lowered self-esteem because of their dietary habits, even if they are active and in good physical shape. Body image may also be affected, such that at the same height and weight, persons may see themselves as more fat if they have eaten bad foods.
Although women and men were in fact judged equally harshly, it might still be the case that women in our society are more aware of or more sensitive to these moral judgments (wanting more to be seen as moral) than are men, or that women believe that these judgments are stronger for them. These possibilities are not mutually exclusive. None of them would necessarily have shown up given our current design, but they might if we were to have subjects imagining themselves being judged rather than judging others. Similarly, the finding that women high in dietary restraint did not show a stronger morality-food effect than low-restraint women does not rule out the possibility that they differentially fear such judgments. It could be that differences in fears of being judged might better represent causes (or symptoms) of unhealthy levels of food concern.

Finally, whether the morality-food effect is limited to the level of global personality judgments, or gives rise to actual behavioral expectations, remains an unanswered question. It would be interesting to see whether this food manipulation could affect subjects' judgments about a target's likelihood of committing immoral acts (unrelated to food), such as cheating or stealing.

We consider the morality-food effect to be cause for note and some degree of concern. Although moralistic thinking about food is common cross-culturally, such thinking can have dangerous implications, depending on the specific content of beliefs and the behavioral sequelae of them. We find it unfortunate that the media are capitalizing on the food-mortality link in ways that promote overly extreme thinking and potentially unhealthy behaviors.

APPENDIX
Traits Included on Checklist

<table>
<thead>
<tr>
<th>MORALITY SCALE</th>
<th>ETHICAL/UNETHICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolerant of others/Intolerant of others</td>
<td>Ethical/Unethical</td>
</tr>
<tr>
<td>Sexually monogamous/Promiscuous</td>
<td>Kind-hearted/Cruel</td>
</tr>
<tr>
<td>Considerate/Inconsiderate Concerned/Unconcerned</td>
<td>Virtuous/Immoral</td>
</tr>
</tbody>
</table>

NONMORAL CONTROL

<table>
<thead>
<tr>
<th>Practical/Idealistic</th>
<th>Quiet/Talkative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methodical/Spontaneous</td>
<td>Morning person/Night person</td>
</tr>
<tr>
<td>Analytical/Intuitive</td>
<td></td>
</tr>
</tbody>
</table>

GLOBAL IMPRESSION

<table>
<thead>
<tr>
<th>Attractive/Unattractive</th>
<th>Likable/Unlikable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feminine/Not feminine</td>
<td>Good-looking/Not good-looking</td>
</tr>
</tbody>
</table>

Not masculine/Masculine

FITNESS AND WEIGHT

<table>
<thead>
<tr>
<th>Fit/Out of shape</th>
<th>Active/Inactive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not fat/Fat</td>
<td>Thin/Not thin</td>
</tr>
</tbody>
</table>

MEDIATIONAL MECHANISM

<table>
<thead>
<tr>
<th>&quot;You are what you eat&quot;</th>
<th>Pure/Polluted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puritan ethic</td>
<td>Hard-working/Lazy</td>
</tr>
<tr>
<td>Disciplined/Undisciplined</td>
<td>Follows norms/Breaks norms</td>
</tr>
<tr>
<td>Taboo-breaking</td>
<td></td>
</tr>
<tr>
<td>Honors social taboos/ Ignores social taboos</td>
<td></td>
</tr>
<tr>
<td>Health halo</td>
<td>Healthy/Unhealthy</td>
</tr>
</tbody>
</table>

| Well-balanced/One-sided |       |

a. Also used to assess general halo.

NOTES

1. Readers may note an apparent similarity of the "you are what you eat" principle to Kahne (1971) and Tversky's (1971) representativeness heuristic, in which antecedents are judged to be representative of their consequences, and outcomes are thought to resemble their causes. One example of representativeness cited by Nisbett and Ross (1980) is the tendency, common in traditional societies, to attribute particular illnesses or curative powers to environmental agents with features resembling the illnesses (e.g., fowl excrement is used by the Azande to cure ringworm, because of the visual resemblance between them). Although there is clearly a "resemblance" aspect to the notion that ingesting a particular food leads to becoming like that food, the "you are what you eat" principle, and indeed many cases of illness attribution, involve the additional critical notion of transmission through contact. We refer the interested reader to Frazier (1980/1951) and Swedde (1977) on the magical law of similarity, which we see as more closely related to representativeness than magical contagion, and to Nemeroff, Brinkman, and Woodward (1994) for more on the nature and basis of the contagion "heuristic."

2. The sex specified in the instructions matched the sex of the target.

3. On the original questionnaire given to subjects, trait dimensions were balanced for direction. For presentational purposes, we have recoded the numbers so that all go in the same direction. Thus, for all means presented, lower numbers indicate traits presumably associated with good foods (e.g., morality, femininity, thinness), and higher numbers indicate traits presumably associated with bad foods (e.g., inactivity, masculinity, unattractiveness). In all tables and the appendix, the trait dimensions are presented with the good-food traits on the left and the bad-food traits on the right.

4. Note that the manipulation check assessed perceived qualities about the foods, not perceived traits of the target person. The manipulation check was included in this MANOVA because it, like the other variables in this analysis, measures the subjects' awareness of the information provided in the target profile. For the manipulation check, significance of the main effect of food type, $F(5, 257) = 1080.79, p < .001$ (mean difference $= 4.45$), shows that the manipulation was effective; other main effects and interactions are interesting for theoretical reasons.

5. This newly developed measure had a poor internal consistency. However, all the results reported below held up even when measurement error was approximately corrected for in LISREL. Results were also the same when either of the taboo items, individually, were substituted for the two-item scale.

6. For these analyses, the trait dimension sexually-monogamous/promiscuous was left out of the morality scale, as a MANOVA indicated that this was the only morality trait that was not significantly affected by food type.

7. Baron and Kenny (1986) have listed three criteria for a mediational relationship to exist between three variables. First, the inde-
dependent variable must be significantly related to the dependent variable. Second, the mediator must be significantly related to the dependent variable. Third, when the mediator is included in the regression equation with the independent variable, it must significantly reduce the effect of the independent variable on the dependent variable. The tabo mediator failed to meet the second criterion; it was found to be unrelated to the morality rating.

REFERENCES


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