Who Serves Food Shapes Self-Evaluation and Eating Decisions

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Abstract

People increasingly consume food served to them by others. Based on psychological theories of agency, motivated reasoning, and self-serving attributions, the authors propose that being served (versus serving oneself) allows consumers to reject responsibility for unhealthy eating, thereby reducing negative self-evaluative feelings. This proposition was tested in a series of studies, where people imagined either serving themselves or being served food that was either healthy or unhealthy. With unhealthy food, people felt worse about themselves when they had served the food (versus when others had served them); with healthy food, people did not feel significantly better when they served themselves (versus when others served them). This effect was explained by self-serving attributions of responsibility. Correspondingly, when anticipating eating unhealthy food, people more strongly preferred being served (versus serving themselves). Further, when they were actually served unhealthy food, they selected larger portions (versus serving themselves). These findings contribute to research on factors influencing food consumption and on consumer self-evaluation.
Fifty percent of meals are eaten “out-of-home” (Hyman 2011) and two-thirds of Americans dine out at least every other day (Stewart, Blisard, and Jolliffe 2006). Eating out has become pervasive across all types of dining establishments, including fast food places, cafeterias, quick service, and gourmet restaurants (Harris Interactive 2012). Dining out brings benefits, saving the consumer time and effort. But, does it come at a price?

While at home people predominantly (although not exclusively) serve themselves their own food; when dining out people are most frequently served by others. For instance, patrons are served at restaurant tables, over cafeteria counters, or even via drive-thru windows. Granted, in some establishments, consumers serve themselves from a buffet or from bowls that are shared family-style—however, being served is the prevailing serving set-up when eating away from home. Given findings that consumers eat much more unhealthily when they eat out versus at home (Gregory, Smith, and Wendt 2011; International Food Information Council Foundation 2011), this begs the question whether who serves food affects consumers’ eating behavior. If being served food (rather than serving it oneself) instigates people to eat more unhealthily, it may play a role in the obesity epidemic facing many countries. Overeating and weight-gain take a toll not only on consumers’ physical health, such that excess consumption can lead to heart disease, various cancers, and diabetes. It also affects their emotional wellbeing, given today’s high pressure to control one’s diet, stay thin, and eat the “right” foods.

Prior research comparing eating at home versus outside the home has focused on the healthiness of the food itself, pointing to the greasiness of fast food or the opulence of haute cuisine (Bezerra, Curioni, and Sichieri 2012; Guthrie, Lin, and Frazao 2002; Todd, Mancino, and Lin 2010). But there are other aspects of eating out (versus in-home) that vary besides the nutritional content of the food. In the present paper, we focus on one such factor: who serves the
food. Specifically, we investigate a critical characteristic that is typical of eating away from home, namely being served the food by someone else. We test how this factor affects how consumers feel about their eating behavior and about themselves as well as their food consumption decisions. Could a subtle difference in how actively the consumer participates in the food-serving process alter how good or bad he or she feels about their eating behavior? Could being served (vs. self serving) cause people to actually eat more unhealthy food, even if the food is identical in both cases?

We suggest that consumers are motivated to make self-serving attributions of responsibility for their eating, that is, reject responsibility for unhealthy eating. They are motivated to do so in order to feel positively about themselves. However, the latitude for relegating responsibility is affected by whether they serve the food themselves or someone else serves them. Therefore, we hypothesize that how healthy or unhealthy the food is and who serves it (the consumer herself or someone else) interact to affect consumers’ ascription responsibility: the former determines the *necessity* for self-serving attributions and the latter provides the *opportunity* for such attribution.

By considering subjective outcomes of food serving—feelings of responsibility and self-evaluative feelings—we extend research on food consumption, health-related behaviors, and obesity, which has generally focused on contextual influences in food consumption. While we examine one such context here, we also examine how this influences consumers’ feelings, which are important antecedents to food consumption as well (Gardner et al. 2014; Garg, Wansink, and Inman 2007). We also add to the literature on motivated reasoning, and particularly self-serving attributions—a theoretical framework that has been underutilized in consumer research (Weiner 2000)—by applying it in a new and important domain. Although our investigation uses the
example of food consumption, the findings make a more general case for the far-reaching effects of consumers actively “serving” themselves on motivated reasoning, self-serving attributions, and ultimately consumer wellbeing.

**THEORETICAL BACKGROUND**

We begin with literature on agency, narrowing our focus down to self-serving attributions and necessary conditions for such forms of motivated reasoning. Then we detail the pertinent research that links food consumption, self-evaluation, and self-serving attributions. These provide the conceptual background for our hypotheses.

*Agency*

The concept of “agency,” or the feeling that one is causing an action or exerting influence on one’s own functioning and environment (Bandura 2006; Jeannerod 2003), is of relevance in a wide range of disciplines, from philosophy and sociology to psychology and neuroscience. Humans tend to assume intent and agency rather than randomness as the cause of events (Rosset 2008), and beliefs of whether or not an action was driven by agency strongly influence judgments about actor and outcomes.

Probably the most crucial impact of a sense of agency, however, emanates from the notion of self-agency, pertaining to the responsibility for one’s own actions. Abundant research demonstrates that when individuals perceive an internal locus of causality and thus hold a sense of personal agency, their emotional responses to the given event are amplified, ostensibly because they associate more strongly with its consequences (Landman 1987). For example, when people actively make choices, they assign more self-credit and self-blame for their decision outcomes (Botti and McGill 2006). In turn, self-selected (Brehm 1956) as well as self-assembled
(Norton, Mochon, and Ariely 2012) products are evaluated more positively by consumers; self-generated solutions are judged more favorably by problem-solvers (Sussman et al. 1991); and service encounters deliberately initiated by the customer foster greater satisfaction (Hui and Bateson 1991). At the same time, personal responsibility is also associated with negative emotions. For example, personal agency is a necessary condition for the emotion of guilt (e.g., Smith and Ellsworth 1985). Similarly, individuals considering their active behavior as the cause of negative consequences (e.g., opting into vaccination that causes complications, knowingly giving wrong advice) judge it as more negative (Baron and Ritov 1994) and experience stronger immediate regret (Gilovich and Medvec, 1995; Kahneman and Tversky 1982) than those considering their passive inaction (e.g., omitting vaccination and thus becoming ill, withholding better advice). In sum, prior research suggests that a sense of personal agency and responsibility for actions and outcomes pivotally affects human thoughts and feelings.

*Self-serving Attributions of Agency*

Heider (1958) noted that people’s cognitions are heavily shaped by “‘what ought to be’ and ‘what one would like to be’ ” (120-21), and that consequently, people’s reasoning and inferences are distorted as a function of the individual’s goals. One instantiation of such motivated reasoning is self-serving attributions. Specifically, attributions of responsibility are biased to position the individual in a favorable light, in order to make oneself feel good and to avoid feeling bad. For instance, a large body of research has demonstrated that individuals overwhelmingly take credit for success, but deny accountability for failures (e.g., Arkin, Gleason, and Johnston 1976; Blaine and Crocker 1993; Bradley 1978; Snyder, Stephan, and Rosenfield 1978; for a review see Fletcher and Ward 1988). Faced with favorable outcomes, people assume responsibility even for pure chance events (Langer and Roth 1975; Wohl and
Enzle 2002). Conversely, faced with unfavorable events, they re-assign responsibility whenever their own agency is ambiguous (Bandura 1990, 2002; Hinrichs et al. 2012). Overall, evidence converges to show that such self-serving attributions are made in order to enhance or maintain one’s positive self-concept (Campbell and Sedikides 1999; Greenberg, Pyszczynski, and Solomon 1982; Weary Bradley 1980; for a review see Shepperd, Malone, and Sweeny 2008). This, in turn, suggests that failures to make self-serving attributions may have negative consequences for people’s self-related affect.

_Eating and Self-evaluation_

Motivated reasoning, such as self-serving attributions, occur only under motivational pressures (Kunda 1987). One domain where motivational pressures are high is eating (see Chernev 2011), and thus self-serving attributions should be likely to manifest. Food and eating behaviors are focal in today’s society. Ideology-laden diets feature prominently in popular media and admonitions telling consumers what is appropriate to eat are common. Even brand names imply eating-related judgment (e.g., “Guiltless Gourmet”). Whether a cause or a consequence of such press and product offerings, most consumers (87%) carefully consider the health aspect of the food they eat (United Soybean Board 2011). Beyond casual observations, research also corroborates the notion that food choice is an important subject of consumers’ self-appraisals. There are at least two important ways in which eating is implicated in self-appraisals.

First, eating is inseparably linked with body shape and, thus, with the increasingly important self-appraisals of physical attractiveness. A majority of Americans aim to lose weight (Gallup 2012) and make an effort to self-regulate and restrict their consumption when faced with tempting but unhealthy foods (Vohs and Heatherton 2000; for a review see Bublitz, Peracchio, and Block 2010). Many view diet control as a sign of willpower (International Food Information
Council Foundation 2011). This conceptualization implicitly connects eating with character strength—success in controlling one’s diet is a morally desirable quality (Chaiken and Pliner 1987). Second, and relatedly, food consumption can be tied to morality. People rigorously categorize food into “good” and “bad” (Chernev and Gal 2010; Rozin, Ashmore, and Markwith 1996), and describe them with moral referents (Stein and Nemeroff 1995). Public health campaigns suggest that healthy eating is a civic duty, giving credence to the notion that food consumption is used as an indicator for how “good” a person is (Petersen et al. 2010).

Against this backdrop, it is not surprising that eating is intricately linked with self-evaluative feelings (Ramanathan and Williams 2007). As in other domains of “vice” consumption and consumption-related emotions, motivated reasoning is likely to occur (Khan and Dhar 2006; Mukhopadhyay and Johar 2009; Okada 2005). Indeed, the urge to explain away tends to be stronger for the negative than the positive (Bohner et al. 1988). Therefore, rejecting responsibility for eating unhealthy food may be utilized as a mechanism to protect consumers’ positive self-evaluative feelings, which they are motivated to maintain (Allport 1955).

Who Serves Food and Motivated Reasoning

Clearly, motivated reasoning to protect one’s positive self-view via the mechanism of self-serving attributions of responsibility seems likely in the domain of food consumption. Yet, we have reason to believe that who serves food (self versus other) plays a pivotal role in these processes. Research suggests that people cannot make themselves believe anything they want. They will claim responsibility for their positive outcomes, and disclaim responsibility for negative outcomes, but only if they can muster some evidence to support those claims (Kunda 1990). That is, self-serving attributions are only made to the extent that they are credible (Schlenker 1980; Schlenker, Weigold, and Hallam 1990), and therefore emerge most readily
whenever plausible causal explanations are available (Weary et al. 1982). Whether one serves a chosen food oneself or gets served by someone else may be exactly one such aspect that presents ambiguity regarding agency, granting leeway for alternative ascriptions of responsibility.

As such, the act of serving food may affect the consumer’s sense of responsibility. The diner who seizes a serving bowl, takes hold of a serving spoon, and ladles a helping of the dish onto his plate incriminates herself more to obtain the food than the diner who merely is handed a filled plate by a server. Being relatively active or passive in such ways may then be reflected in the person’s sense of agency and responsibility. In other words, actively serving oneself food may enforce attributions of responsibility to oneself, whereas passively being served by others may open up the opportunity for making the most preferable attribution of responsibility, to self or other, depending on how virtuous the food is, based on its healthfulness. When others serve food, the consumer can take or relegate responsibility depending on what suits her better. When the consumer serves herself, however, the margin for reassigning responsibility is much smaller.

Thus, people’s self-appraisal after food consumption should be a function of two factors: how healthy the food is (determining the necessity for assuming or for attributing away responsibility) and who serves the food (determining the opportunity for attributing away responsibility). Formally, we propose that:

H1: When consuming food, people’s feelings about themselves are impacted interactively by the healthiness of the food and who serves it. More specifically:

People’s self-evaluative feelings are more affected by the healthiness of the food when they self-serve the food as compared to when others serve them. For self-served (versus other-served) food, self-evaluative feelings are less positive for unhealthy than for healthy food.
H2: When consuming food, people’s feelings of responsibility are impacted interactively by the healthiness of the food and who serves the food. More specifically:

People’s feelings of responsibility are less affected by the healthiness of the food when they self-serve the food as compared to when others serve. Thus, for other-served (versus self-served) food feelings of responsibility are lower for unhealthy than for healthy food. Furthermore, we hypothesize that:

H3: Feelings of responsibility for one’s food consumption mediate the effect of who serves the food on self-evaluative feelings regarding consumption, but this mediation is moderated by the healthiness of the food (the mediation operates when the food is unhealthy and not when it is healthy). We propose a moderated mediation model (see Figure 1).

Insert Figure 1 about here

The basic psychological process we hypothesize gives rise to two related behavioral hypotheses. If people anticipate the effects of who serves the food (self or other) on their ability to make self-serving attributions, they may adjust various food consumption decisions accordingly. Specifically, we hypothesize that:

H4: Consumers’ preference for being served (versus serving themselves) will be higher for unhealthy food compared to healthy food.

H5: Consumers’ choice of food portions is impacted interactively by the healthiness of the food and who serves it. More specifically:

The portion size that people choose is more affected by the healthiness of the food when they self-serve it (versus when others serve it). Thus, for self-served (versus other-served) food, people choose smaller portions of unhealthy than of healthy food.
We test these hypotheses in a series of five studies. In studies 1a and b, we show people a healthy or an unhealthy plate of appealing food and imagine either being served or having served this food themselves. Then they report how they would feel about themselves after eating this food, testing H1. In study 1b, we also measure their sense of how responsible they are for their consumption, testing the underlying process hypothesized in H2 and H3. In study 2, people envision eating a healthy or unhealthy meal and indicate their serving preference, testing H4. In study 3, we measure people’s hypothetical portion choice for a healthy or an unhealthy snack that they either serve themselves or that comes pre-served, testing H5. Study 4 uses a field experiment with real food to corroborate the findings from study 3.

**STUDY 1A – HEALTHY VERSUS UNHEALTHY CAFETERIA MEALS AND SELF-EVALUATIVE FEELINGS**

The goal of our first study was to test our basic hypothesis (H1).

*Method and Procedure*

Ninety-two undergraduates at a large public university in the Midwest (43% female) took part in the study in exchange for partial course credit. The average age in the sample was 20.11 years, with students ranging in age from 18 to 22 years.

Participants were randomly assigned to a 2 (healthiness: healthy vs. unhealthy) × 2 (server: self vs. other) between-subjects design. They were presented with the following scenario: “Imagine it is lunch time and you are ready to eat. You are going to a new lunch place. There, you look around at the food offered and you pick out something that you like to eat.” Next, participants were randomly assigned to one of four conditions. Those in the serve-yourself [be-served-by-other] condition read:
“Once you have chosen something that strikes your fancy, you serve yourself [a server serves you] the food onto your plate. Imagine that you fill [the server fills] your tray with all the foods that you want. After you have helped yourself [the server has helped you] to the food, you sit down with your tray. This is what you served yourself [were served].”

At this point, depending on the condition, participants saw a photograph of a plate with either a plate of healthy foods (grilled chicken, vegetables, wild rice, and a granola bar) or a plate of unhealthy foods (cheeseburger, French fries, baked beans, and a chocolate chip cookie) depicted in Figure 2. Portion size was held constant whether one served the food oneself or was served

Insert Figure 2 about here

Measures

Subsequently, participants rated on a 0–100 scale how healthy, nutritious, and wholesome they thought the food was. These three variables were combined into a healthiness index (α = .91) for all subsequent analyses. Participants also indicated how many calories they believed the meal had. Next, they reported on a 0–100 scale how good as well as how justified, guilty, and shameful they would feel about themselves after eating this meal. These four items were combined to form a composite index for “positive self-evaluative feelings” (guilty and shameful were reverse coded; α = .87). Lastly, participants were asked to recall who had served the food in the scenario. This acted as a manipulation check. Lastly, participants reported their gender.

Given that our main variable of interest is positive self-evaluative feelings, considering the effect of gender is important. Women generally report less positive feelings as well as more negative feelings than men (Simon and Nath 2004). This is particularly true in the domain of eating, where women are more concerned about weight than men and have lower appearance
self-esteem (Bublitz et al. 2010; Grossbard et al. 2009; Pliner, Chaiken, and Flett 1990). Gender was included in the analysis and was found to have a marginally significant main effect for positive self-evaluative feelings index. However, gender did not have any significant interaction effects with either of the independent variables, thus, our findings do not vary by gender. Nonetheless, here and in all other studies, we included gender in the analysis wherever it was significant.

Results

We conducted 2 (healthiness: healthy vs. unhealthy) × 2 (server: self vs. other) ANOVAs on the healthiness index and calorie estimation, and an ANCOVA (with gender as covariate) on our focal dependent variable, the positive self-evaluative feelings index.

Manipulation checks. With regards to the manipulation of who had served the food, three of the 92 participants misremembered who had served the food in their scenario. These three were excluded from all subsequent analyses, as were five participants who had values on the focal measures exceeding three standard deviations from the mean.

With respect to the healthiness index, the analysis yielded the intended main effect for healthiness of the food (F(1, 80) = 287.93, p < .01). As aimed for, the food presented was perceived to be healthier in the healthy condition (M = 78.72, SD = 14.19) than in the unhealthy condition (M = 26.42, SD = 13.97). An analogous main effect for healthiness on calorie estimates was significant (F(1, 77) = 47.26, p < .01): People’s calorie estimates were higher for the unhealthy plate (M = 1238.78, SD = 383.29) than for the healthy plate (M = 645.46, SD = 389.94). As such, the manipulation successfully led participants to perceive the healthy plate as healthier (healthy, nutritious, and wholesome) and lower in calories versus the unhealthy plate.

Dependent variable. In terms of the positive self-evaluative feelings index, the main
effect of gender was marginally significant (F(1, 79) = 5.59, p = .06). The main effect for healthiness (F(1, 79) = 59.00, p < .01), with participants reporting significantly more positive self-evaluative feelings when they imagined eating healthy food (M = 77.68, SD = 18.05) than when they imagined eating unhealthy food (M = 47.49, SD = 17.78). The main effect for server was not significant (p > .9). More important, the predicted interaction between healthiness and server was also significant (F(1, 79) = 7.96, p < .01).

Planned tests revealed that when imagining the consumption of healthy food, people had marginally more positive self-evaluative feelings when they imagined serving themselves (M = 83.04, SD = 17.84) than when they imagined being served by another person (M = 72.31, SD = 17.87; F(1, 79) = 3.4, p < .07). Conversely, when thinking about eating unhealthy food, people had significantly more positive (or rather, less negative) self-evaluative feelings when they had been served by others (M = 53.25, SD = 17.78) than when they had served themselves (M = 41.74, SD = 17.79; F(1, 79) = 4.7, p < .05, see Figure 3).

Further, people thinking of serving their own food had more positive self-evaluative feelings when the food was healthy (M = 83.04, SD = 17.84) than when it was unhealthy (M = 41.74, SD = 17.79; F(1, 79) = 50.79, p < .01). People thinking of being served, too, had more positive self-evaluative feelings when the food was healthy (M = 72.31, SD = 17.87) than when it was unhealthy (M = 53.25, SD = 17.78; F(1, 79) = 12.81, p < .01). However, as the interaction effect indicates, the difference in self-evaluative feelings is larger for those who imagined serving themselves than for those who imagined being served. These results support H1.

Discussion
The results observed in this study show that when imagining having eaten a healthy meal, people feel fairly positively about themselves (self-evaluative feelings indices were > 70), irrespective of who served the meal, but slightly more so if they served it themselves than when someone else served it to them. By contrast, when imagining having eaten an unhealthy meal, people’s self-evaluative feelings are significantly lower if they served it themselves than when someone else served it to them.

To substantiate the basic results from study 1a, in the next study we conceptually replicated the initial findings using a different dining setting and also tested one proposed mechanism, feelings of responsibility (H2 and H3).

**STUDY 1B – HEALTHY VERSUS UNHEALTHY MEALS AT HOME: MEDIATING ROLE OF RESPONSIBILITY**

Study 1b tests H2 and H3. It examines the underlying mechanism of the effect of who serves food on self-evaluative feelings in a context in which the meal was not made by strangers (as it was in the cafeteria of study 1a) but instead by friends.

**Method and Procedure**

One hundred and sixty US-based participants were recruited through Amazon’s Mechanical Turk platform (31.9% female) for nominal payment. The average age in the sample was 28.03 years, with ages ranging from 18 to 74 years.

Participants completed the study on their personal computer and were randomly assigned to a 2 (healthiness: healthy vs. unhealthy) × 2 (server: self vs. other) between-subjects design similar to study 1. First, they were asked to imagine the following scenario:
“Imagine your friends invited you for a meal that they cooked. They gather the necessary food items, prepare all the ingredients, and cook the dish from scratch. Now you are ready to eat.”

Next, participants were randomly assigned to one of the two variants of who served the food. Those in the serve-yourself [be-served-by-other] conditions read:

“Once you have sat down at the dinner table, you serve yourself [your friend serves you] the food onto your plate. Imagine that you fill [your friend fills] your plate with a portion of the food that they cooked. After you have helped yourself [your friend has helped you] to the food, you start eating from your plate. This is what you served yourself [what your friend served you].”

In combination with the text, they saw a photograph of a plate of either healthy food or unhealthy food using the same stimuli as in study 1.

Measures

Subsequently, participants rated on a 0–100 scale how healthy, nutritious and wholesome they thought the food was, yielding again a healthiness index (α = .95). They also estimated how many calories they believed this meal had. Next, respondents were asked how much responsibility they felt for their consumption, on a scale from 0–100. Then, as in study 1, they rated on a 0–100 scale how good as well as how justified, how guilty, and how shameful they would feel about themselves after eating this meal, which yielded a composite index for “positive self-evaluative feelings” (α = .91).

After responding to the dependent variables, respondents were asked to recall who had served the food in the scenario and what kind of food it had been, serving as an attention check. Lastly, they reported their gender.
Results

We conducted 2 (healthiness: healthy vs. unhealthy) × 2 (server: self vs. other) ANOVAs on the healthiness index, calorie estimation, the positive self-evaluative feelings index, and responsibility.

Manipulation checks. With regards to the healthiness index, the analyses yielded the predicted main effect for healthiness of the food (F(1, 156) = 779.57, p < .01). As anticipated, the food was perceived as significantly healthier in the healthy condition (M = 85.61, SD = 10.02) than in the unhealthy condition (M = 28.45, SD = 15.41). A similar main effect for healthiness on calorie estimation was significant (F(1, 154) = 78.96, p < .01), such that people expected more calories for the unhealthy meal (M = 1115.12, SD = 417.23) than the healthy meal (M = 627.35, SD = 286.64). As in study 1, the manipulation successfully caused participants to perceive the healthy plate as healthier than the unhealthy plate.

Dependent variables.

Positive self-evaluative feelings. For positive self-evaluative feelings, the analysis yielded a main effect for healthiness of the food (F(1, 155) = 176.36, p < .01), such that those who thought about eating healthy food felt better about themselves (M = 86.28, SD = 17.77) than those who thought about eating unhealthy food (M = 48.99, SD = 17.73), but this effect was qualified by a significant interaction between healthiness and server (F(1, 155) = 3.88, p = .05). The main effect for server was not significant (p > .2). Following up on the significant interaction, planned contrast tests show that when dealing with healthy food, people felt slightly more positive self-evaluative feelings if they imagined serving themselves (M = 87.36, SD = 17.86) versus being served by someone else (M = 85.20, SD = 17.82; F(1, 155) = .30), but this difference was not significant (p > .5). In contrast, when thinking about eating unhealthy food,
they had more positive (or rather, less negative) self-evaluative feelings when they imagined being served by someone else (M = 53.51, SD = 17.71) than serving themselves (M = 44.47, SD = 17.76; F(1, 155) = 4.97, p < .05; see Figure 4).

Further, people thinking of serving their own food had more positive self-evaluative feelings when the food was healthy (M = 87.36, SD = 9.49) than when it was unhealthy (M = 44.41, SD = 24.92; F(1, 155) = 111.48, p < .01). People thinking of being served, too, had more positive self-evaluative feelings when the food was healthy (M = 85.2, SD = 14.62) than when it was unhealthy (M = 53.51, SD = 18.93; F(1, 155) = 65.01, p < .01). However, once again, the difference in self-evaluative feelings is larger for those who imagined serving their own food than for those who imagined being served. These results replicate the results of study 1a and further corroborate H1.

Responsibility. For responsibility, the analysis revealed significant main effects for server (F(1, 156) = 6.45, p < .05) and healthiness (F(1, 156) = 4.39, p < .05), which were qualified by a significant interaction (F(1, 156) = 4.07, p < .05). Following up on this interaction, planned contrast tests show that when people thought about eating healthy food, those who imagined being served by someone else assumed virtually as much responsibility (M = 86.02, SD = 12.73) as those who imagined serving themselves (M = 87.44, SD = 16.62; F(1, 156) = .15, p > .6). Conversely, when people thought about eating unhealthy food, those who imagined being served by another person accepted much less responsibility (M = 75.33, SD = 22.12) than those who imagined serving themselves (M = 87.19, SD = 12.64; F(1, 156) = 9.96, p < .01; see Figure 5).

Additionally, people thinking of serving their own food felt virtually equally responsible
when the food was healthy (M = 87.44, SD = 16.62) than when it was unhealthy (M = 87.19, SD = 12.64; F(1, 156) = .00, p > .95). People thinking of being served, however, felt much more responsible when the food was healthy (M = 86.02, SD = 12.73) than when it was unhealthy (M = 75.33, SD = 22.12; F(1, 155) = 8.6, p < .01). These results are consistent with H2.

Test for mediation. We tested a moderated-mediation model in which feelings of responsibility for one’s consumption mediate the effects of who serves food (self vs. other) on positive self-evaluative feelings, conditional on an unfavorable outcome (here: eating unhealthy food). Accordingly, we submitted our data to a moderated mediation analysis employing Hayes’ (2013) Process macro, specifically testing a model in which path $a$, from independent variable to mediator, is moderated (model 7, comparable to model 2 in Preacher, Rucker, and Hayes 2007).

In line with our theory, a bootstrap analysis testing the indirect effect of server through feelings of responsibility on positive self-evaluative feelings, conditional on healthiness of the food, confirmed this hypothesis: At the level of unhealthy food, responsibility mediates the observed effect ($b = 17.76$, SE = 9.26), as the confidence interval for the effect does not include zero (95% CI = 4.03–40.50). In contrast, at the level of healthy food, responsibility cannot be considered a significant mediator ($b = 1.84$, SE = 5.08), given that the confidence interval includes zero (95% CI = -6.49–13.88, see Figure 6). These results are consistent with H3.

Discussion
Studies 1a and b provide evidence that in order to feel better, people make self-attributions of responsibility for their food consumption, selectively over-claiming responsibility for healthy eating when they did not serve the food themselves but rejecting responsibility for unhealthy eating when they did. If people are indeed motivated to attribute responsibility for their food consumption in self-serving ways, then might consumers’ preference for being served (versus serving themselves) also vary as a function of the food’s healthiness?

**STUDY 2 – SERVING PREFERENCE FOR HEALTHY AND UNHEALTHY MEALS**

Study 2 tests H4, which suggests that consumers should more strongly prefer to be served by someone else when the food is unhealthy than when it is healthy, because being served allows for self-serving attributions of responsibility in cases when rejecting responsibility is desirable—i.e., when eating unhealthy food.

*Method and Procedure*

One hundred and twenty undergraduates at a large public university in the Midwest (59.2% female) completed the study in exchange for partial course credit.

Students were randomly assigned to a one-factor 2-cell (healthiness: healthy meal vs. unhealthy meal) within-subjects design. The order in which the two scenarios involving healthy and unhealthy foods were presented was counterbalanced. Participants were instructed to envision one of two eating occasions:

“Imagine a situation in a private setting with friends in which you might eat grilled chicken with vegetables [a cheeseburger with French fries]. (For example, you might have grilled chicken [a cheeseburger] for dinner, at a barbeque, etc.)”

These were the same foods as in studies 1a and 1b, where they were clearly identified as healthy
and unhealthy, respectively, by a sample from the same population. They were prompted to describe the situation they were thinking of by typing a few words to facilitate vivid imagination. After that, participants were asked to imagine that in this situation, they were ready to eat the healthy (unhealthy) food. Subsequently, subjects were asked for their preference regarding who should serve the food (self or other).

**Measures**

Subjects’ preference for who should serve the grilled chicken [cheeseburgers] (self vs. other) was measured by asking: “If you want to enjoy the experience of grilled chicken with vegetables [a cheeseburger with French fries] as much as possible, what do you typically prefer – if someone serves you or if you serve yourself?,” which respondents indicated on a slider scale ranging from *I prefer serving myself* to *I prefer another person serving me*, without numerical displays to prevent anchoring. Gender was also measured. Neither order effects nor gender effects were significant (*p* > 0.1) and are not discussed further.

**Results and Discussion**

Responses to the serving preference item were coded as follows: *I prefer serving myself* = 0 to *I prefer another person serving me* = 10, so that the higher the value, the more strongly a person wished to be served by someone else. We conducted a repeated-measures ANOVA on this dependent variable, serving preference. Two participants failed to describe any situation and nine participants indicated that they would not eat one or both of the foods in question due to dietary restrictions or strong dislikes. These participants were excluded from the analysis. The analysis revealed a significant main effect of food’s healthiness on preference about who should serve the food (*F*(1, 108) = 9.4, *p* < .01). Specifically, people’s preference for being served by someone else was significantly higher when they considered eating an unhealthy meal,
cheeseburger and fries (M = 5.79, SD = 3.29), than when they considered eating a healthy meal, chicken with vegetables (M = 4.5, SD = 3.47 see figure 7). This is supportive of H4. Additionally, people’s preference for being served when eating the unhealthy meals was significantly above the midpoint of the scale (t(108) = 2.5, p < .05), their preference for being served when eating the healthy meal was slightly below the midpoint of the scale, i.e., towards preferring to serve themselves (t(108) = −1.5), but this difference was not significant (p = .14).

These results are consistent with our motivated reasoning account in two ways: First, people’s preference for being served (as opposed to serving themselves) is enhanced for unhealthy food compared to healthy food. This matches the idea that people want to avoid personal responsibility and, thereby, the associated negative feelings that can come from eating unhealthy food. Second, their serving preference for unhealthy food is distinctly in favor of being served—not serving themselves or feeling indifferent. This matches the notion that self-serving attributions (here: rejection) of responsibility are facilitated by suitable situational evidence—for example, someone else being in charge of serving.

Thus, our first three studies indicate that people seek to reject responsibility for unhealthy eating post-hoc, circumstances permitting. These results on consumption-related self-evaluative feelings beg the question whether consumers, in response to a given serving set-up (self versus other), actively adjust their consumption decisions a priori, presumably to regulate their self-evaluation after eating.

**STUDY 3 – PORTION SIZE DECISIONS FOR HEALTHY AND UNHEALTHY SNACKS**
Study 3 was designed to test H5 by examining how people’s portion size decisions for healthy (almonds) or unhealthy (M&Ms) food is influenced by the prospect of either serving themselves the snack or being served. The previous studies had held portion size constant in order to isolate the effects on feelings and attributions, given that varying portion sizes in themselves should affect the consumers’ feelings. In contrast, this study examines how portion choice varies as a function of who serves.

Method and Procedure

Seventy-five undergraduates at a large public university in the Midwest (40% female) participated in the study in exchange for partial course credit. Average age in the sample was 20.77 years, with ages ranging from 19 to 47 years.

Participants were randomly assigned to a 2 (healthiness: healthy vs. unhealthy) × 2 (server: self vs. other) between-subjects design. First, they were instructed to imagine a situation in which they were about to purchase a snack perceived as healthy or unhealthy from a snack bar with a specific serving set-up.

To select appropriate snack foods, a pretest was conducted in which a sample of 35 participants from the same university rated various snacks for their healthiness and liking on 1–7 point scales. This pretest indicated that college students viewed almonds as significantly healthier (M = 6.29, SD = .99) than M&Ms (M = 1.43, SD = .56; t(34) = 24.11, p < .01). At the same time, they liked almonds (M = 4.34, SD = 1.73) and M&Ms (M = 4.97, SD = 1.89; t(34) = −1.34, p > .15) equally well.

The scenario read as follows:
“Imagine you are getting a snack at a snack bar (e.g., in a cafeteria). You are really looking forward to a snack right now and you decide to go for almonds [M&Ms]. As this is the type of place where you serve yourself the snack into a container [the snack comes filled into containers] of a specified size (paid by weight), you will need to select which one of the available serving sizes you would like to take [get].”

(Note that both pre-served and self-served snacks are common options on campus.)

*Measures*

Next and critically, respondents chose a portion size for their snack from seven different options that ranged from 4oz. to 16oz. (increasing in 2 ounce increments) and also included the option 0 = none at all (adapted from McFerran et al. 2010). To ensure understanding of these sizes, we also provided the corresponding volume in terms of standard kitchen measuring cups along with each ounce label. Note that it is not advisable to measure self-evaluative feelings as a function of condition in this design, because portion size is not fixed (as it was in our earlier studies). Therefore, feelings are not assessed in this study.

Lastly, participants reported their gender and age, and also noted any food allergies, dietary restrictions, and strong dislikes.

*Results and Discussion*

We conducted a 2 (healthiness: healthy vs. unhealthy) x 2 (server: self vs. other) ANOVA on our dependent variable, portion size choice. Seven participants indicated having an allergy or other restriction relevant to the particular food in their condition (e.g., tree nut allergy in the almond condition, lactose intolerance in the M&M condition) and were thus excluded from the data set, leaving 68 data points for the main analysis.

Neither the main effect for server (F(1, 64) = 1.69, p > .15), nor for the snack’s
healthiness \( F(1, 64) = .84, p > .3 \) were significant. However, the predicted interaction between the snack’s healthiness and server was significant \( F(1, 64) = 6.18, p < .05 \).

Specifically, planned contrasts to follow-up this interaction showed that when people thought about getting a healthy snack, almonds, they selected a slightly larger portion when they had to serve themselves the food \( (M = 6.11 \text{ ounces, } SD = 2.87) \) than when the snack was already served for them \( (M = 5.29 \text{ ounces, } SD = 2.22; F(1, 64) = .72) \) but this difference was not significant \( (p > .4) \). By contrast, when people thought about getting an unhealthy snack, M&Ms, they selected a significantly smaller portion when they expected serving themselves the food \( (M = 3.77 \text{ ounces, } SD = 2.64) \) than when the snack was already served for them \( (M = 6.38 \text{ ounces, } SD = 3.52; F(1, 64) = 6.96, p = .01; \text{ see figure } 8) \). This is consistent with H5.

As such, these results suggest that consumers’ portion choices depend jointly on whether the food is healthy or unhealthy and who serves it. When consuming unhealthy food, consumers choose smaller portions when they serve themselves versus when the food is served for them; however, when consuming healthy food, they choose comparable portions, regardless who serves. Thus far, the studies have shown the predicted effects in hypothetical laboratory settings. The last study was designed to replicate the results from study 3 in a field study with real food.

**STUDY 4 – FIELD STUDY: PORTION CHOICES IN A “TASTE TEST”**

Study 4 examines how people’s actual portion size decisions regarding a relatively unhealthy food (frozen yogurt) are affected by who serves it. In addition, study 4 also confirms
that the effect of who serves on portion choice is indeed attributable to agentic effort, and not to choosing the food.

Method and Procedure

Sixty-six undergraduates at a large public university in the Midwest (51.5% female) took part in the experiment in exchange for partial course credit. The average age in the sample was 20.9 years, with students’ ages ranging from 19 to 23 years. Participants were randomly assigned to a one-factor 2-cell (server: self vs. other) between-subjects design.

Students came to the behavioral lab, where they learned that they would be taking part in a “new product taste test,” in which they would get the chance to try one of two flavors of an ostensibly newly developed frozen yogurt. A sample of 65 students at the same university had rated various dessert foods for their healthiness on a 1–10 point scale. These ratings indicated that college students viewed frozen yogurt as relatively unhealthy, as signified by a mean rating significantly lower than the midpoint of the scale (M = 4.31, SD = 2.63; t(64) = –2.12, p < .05). Given that the local student population is very health-conscious, this moderately unhealthy option was selected to ensure participants would consider consuming it in the taste test.

Each participant was met individually by a research assistant blind to the objectives and hypotheses of the research in a room that was set up as a mock frozen yogurt shop. A counter featured two large containers of frozen yogurt (vanilla flavor and cherry flavor), four stacks of differently sized but unlabeled sampling cups (2oz, 3.25oz, 4oz, and 5.5oz), an ice cream scoop, tasting spoons, and paper napkins. Subjects in the serve-yourself [be-served-by-other] condition received the following overview of how the study would work (first in writing, and then orally):

“This first, choose a flavor of nonfat frozen yogurt: Which of these delicious new flavors would you like to serve yourself [be served] today? Vanilla or Cherry. Next, pick a
sampling size: How much nonfat frozen yogurt would you like to serve yourself [be served]? Then, serve yourself and [let us serve you and] fill your cup with the frozen yogurt you chose. Take your time and taste test your frozen yogurt. Lastly, after you finished eating, fill out the taster survey.”

After being informed about this general structure of the study, the research assistant carried out the aforesaid procedure with the participant. Specifically, first each participant was asked to state which flavor they would like to taste, and then instructed to take whichever size sampling cup they wanted from the stacks. This setup separates agentic effort from choice: In both conditions, participants actively chose their frozen yogurt, so any subsequent effects can be cleanly attributed to the difference in agentic involvement in the serving process—not perceived difference in who chose the food. Next, participants in the self-serve condition were handed the ice cream scoop and told to fill up their sampling cups; participants in the other-served condition handed over their sampling cup to have it filled by the research assistant. Once sampling cups were filled, people were provided with a spoon and napkin, and also given the alleged “taste test survey.” Lastly, they were led to a different room, ate the frozen yogurt, and completed a survey of mock taste test questions.

Results and Discussion

We conducted a t-test on our dependent variable. Two students chose not to participate in the study, one due to having given up all sweets for lent, and one due to being on a low-carb diet, leaving 64 data points for the analysis.

A t-test revealed that participants who anticipated being served the frozen yogurt selected larger sampling portions ($M = 4.03, SD = 1.17$) than did students who anticipated serving themselves the same dessert ($M = 3.25, SD = 1.15$; $t(62) = 2.70, p < .01$, see figure 9).
Together with the findings of the previous two studies, these results support the idea that people may anticipate the effect of serving themselves or being served on their self-evaluative feelings and adjust their eating decisions accordingly. Consumers aim to prevent negative feelings from serving themselves unhealthy food by downsizing the amount they choose, but they take advantage of the opportunity to indulge light-heartedly when the same dessert is served to them. Indeed, being served led our participants to upgrade their portion by a whole cup size.

GENERAL DISCUSSION

People are increasingly eating food prepared and served to the consumer by others (Harris Interactive 2012; Stewart et al. 2006). At the same time obesity is on the rise (Hill et al. 2003). Findings converge that eating out is associated with more extensive consumption and weight-gain (Bezerra, Curioni, and Sichieri 2012; Todd, Mancino, and Lin 2010) and the complex connection between eating out and obesity has been studied from a variety of angles. In this paper, we propose one additional factor that can contribute to obesity, but that has been neglected thus far: being served by another person rather than serving oneself.

Based on the psychological literature on self-serving attributions and the findings that people feel less negatively about unfavorable actions whenever they are committed indirectly rather than directly, we predicted that serving one’s own food versus being served affects how the consumer feels about him- or herself. Furthermore, we predicted that the anticipation of these effects causes consumers to adjust their consumption decisions, including (a) whether they prefer
serving themselves or being served, and (b) how much food they choose and consume.

Five experimental studies provide support for this model. First, we showed that how “good” or “bad” a food is (in terms of healthiness) indeed interacts with who serves (self or other) to affect self-evaluative feelings in the predicted fashion. In the case of unhealthy food, those who were served the food felt considerably better than those who served themselves (study 1a). Next, we found that who serves has the power to shape how much responsibility people assume in ways consistent with our hypothesized process. Self-serving attributions of responsibility mediate the effects of who serves on positive self-evaluative feelings, and this mediation is moderated by the healthiness of the food (study 1b). We then demonstrated that consumers seem to anticipate this effect and adjust their consumption decisions a priori in accordance with anticipated self-evaluative feelings. Preference about who should serve food varies with the food’s healthiness, such that for unhealthy food consumer preferences shift away from serving themselves and toward being served, compared to healthy food (study 2). Lastly, both in hypothetical (study 3) and real (study 4) eating situations where people serve themselves, consumers preemptively select smaller portions of unhealthy food to serve themselves, but they opportunistically select larger portions of unhealthy food when it is served for them.

The asymmetrical nature of the findings across healthy versus unhealthy food is also consistent with self-serving attribution. When people claim just as much responsibility for healthy eating when they are passively served compared to when they actively serve the food, they are indeed making a self-serving attribution. Additionally, given that people are more likely to engage in extensive causal reasoning when experiencing negative events (as opposed to positive events, see Bohner et al. 1988), any patterns of motivated reasoning should be more pronounced for unhealthy food than for healthy food.
Our studies show that serving oneself unhealthy food leads to more negative self-evaluative feelings than being served, even if the food is identical. Further, consumers take this into account as they plan their consumption. What do these results mean for the consumer’s eating experience? How might this be implicated in the rise in obesity associated with the increase in eating out? If being served affords individuals the motivated reasoning necessary to protect a positive self-view, then being served a luscious meal allows the consumer to indulge in an eating experience for which they would otherwise feel bad, had they served the food themselves. In the long run, consumption of hedonically appealing but less healthy foods (e.g., buttery sauces, creamy desserts) may be chronically reinforced more strongly through the being-served-experience than it would be through the serving-oneself-experience. Serving oneself, in contrast, may discourage unhealthy eating even long-term, given that retrospective regret has been shown to discourage subsequent purchases (Patrick, Lancellotti, and Hagtveldt 2009).

Therefore, integrating these notions suggests that for “vice” foods, ironically, serving oneself might not be in one’s self-interest in the present (causing negative affective outcomes), but might indeed “serve” the future self (paying off in health benefits). Alternatively, taking the opposing perspective, self-serving rejection of responsibility when being served may serve the self in the moment, but over time do the self a disservice. Of course, this suggests contrasting implications for restaurateurs and policy-makers. Hospitality providers may benefit from enabling consumers to savor consumption experiences more fully by serving all indulgent “vice” foods to the customers and discouraging self-service in any form. Public entities, however, may help combat overindulgence and obesity by implementing pay-per-weight self-serve setups in unhealthy dining environments.

Our research suggests many opportunities for future extensions. The present research has
focused on only one specific manner in which a consumer can be more or less agentic with respect to food consumption, namely who serves the food. However, another major and arguably even stronger manifestation of agency in food consumption is food preparation. This important aspect of food consumption should certainly be examined in future research. Studies investigating the effect of preparing one’s own food could span a wide range: from actually cooking a whole dish from raw ingredients to combining the ingredients of a packaged mix.

Our studies were limited to food consumption, but other consumer research has demonstrated that people seek justification for vice type consumption in many domains, such as justifying luxury consumption by having expended efforts to obtain it (Mukhopadhyay and Johar 2009; Kivetz and Simonson 2002), receiving a special promotion (Khan and Dhar 2010), or adjusting one’s construal level (Haws and Poynor 2008). Our findings might extend to these and other domains of consumption that have vice–virtue conflicts, such saving vs. spending. For instance, consumers may feel equally responsible for automated versus actively authorized transfers of money into their savings account, but they may feel less responsible for automated versus actively authorized credit card payments. Thus, future research might conceptualize “serving” more broadly and explore if the “who serves effect” extends to other domains.

Lastly, it may be instructive to investigate the interplay of satisfaction with the self and satisfaction with the product in the consumption process. While Norton and colleague’s (2012) IKEA-effect studies would suggest that consumer contentment with the product would be greater with greater self-involvement in the preparation process (possibly including serving), our results indicate that satisfaction with the self would be lower in the case of unhealthy food. Might dissatisfaction with the self spill over to dissatisfaction with the product? These and other questions await future research.
REFERENCES


Heider, Fritz (1958), The psychology of interpersonal relations, New York: Wiley.


FOOTNOTES

1Construing our focal dependent variable as ordinal, a Kruskal Wallis test on sampling cup size with condition as the independent variable revealed a main effect of condition ($\chi^2(3, N = 68) = 8.28, p < .05$).

2Construing the nature of our focal dependent variable as ordinal, a Mann-Whitney U test on sampling cup size with server as the independent variable revealed that students who anticipated being served the frozen yogurt selected larger sampling portions (mean rank = 38.83) than did students who anticipated self-serving the same dessert (mean rank = 26.91; Mann-Whitney U = 320.00, $Z = -2.64, p < .01$).
Figures

FIGURE 1:

Figure 1: Conceptual model with responsibility for one's consumption mediating the effect of server on positive self-evaluative feelings; the effect of server on responsibility moderated by healthiness of the food.
Figure 2: Depiction of the plate of healthy (chicken, vegetables, wild rice) vs. unhealthy food (cheeseburger, fries, cookie)
FIGURE 3:

STUDY 1a:
POSITIVE SELF-EVALUATIVE FEELINGS VARY BY FOOD'S HEALTHINESS AND SERVER

Figure 3: Positive self-evaluative feelings after eating as a function of both server and food’s healthiness.
Figure 4: Positive self-evaluative feelings after eating as a function of both server and food’s healthiness in study 1b.
FIGURE 5:

STUDY 1b:
FEELINGS OF RESPONSIBILITY VARY
BY FOOD'S HEALTHINESS AND SERVER

Figure 5: Feelings of responsibility for one's food as a function of both server and food's healthiness in study 1b.
Figure 6: Moderated mediation model with responsibility for one's consumption mediating the effect of server on positive self-evaluative feelings; the effect of server on responsibility moderated by healthiness of the food.
FIGURE 7:

STUDY 2:
PREFERENCE FOR BEING SERVED IS GREATER FOR UNHEALTHY FOOD

Figure 7: Server preference as a function of food's healthiness in study 2.
FIGURE 8:

STUDY 4:
PORTION SIZE SELECTION IS AFFECTED
BY FOOD’S HEALTHINESS AND WHO SERVES

Figure 8: Portion selection as a function of who is expected to serve in study 3.
Figure 9: Comparison of the frequency distribution of sampling cup size selection in each food serving condition.