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Does Service Employees' Appearance Affect the Healthiness of Food Choice?

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ABSTRACT

Derived from previous research on social influence on food consumption and social comparison theory, this article examines the effect of service employees' appearance on consumers' food choice using an experimental study, involving a video manipulation and eye-tracking technique. The video shows a menu being proffered by a waitress whose degree of apparent healthiness varies (healthy, overweight, unhealthy lifestyle). The menu contains both healthy and unhealthy meal alternatives. The analysis of participants' eye movements demonstrated that exposure to the overweight employee did not stimulate greater (i.e., earlier or longer) attention to unhealthy meal alternatives, whereas exposure to the employee who displayed an unhealthy lifestyle did. These findings have social and managerial implications: The postulated stigma according to which the presence of overweight others encourages unhealthy eating appears questionable. Service providers that might secretly hire according to body weight have no grounds to do so. In contrast, employees signaling an unhealthy lifestyle through their style choices prompt patrons to pay more attention to unhealthy meal alternatives. Food service providers might want to take this factor into consideration and actively manage the aspects that can be altered by simple measures. © 2014 The Authors. *Psychology & Marketing* Published by Wiley Periodicals, Inc.

Developed countries struggle with the burden caused by overweight or obese citizens who suffer decrements to their physical and psychological health (Konnopka, Bödemann, & König, 2011). Greater energy intake, in terms of both the amount (i.e., food intake) and type (i.e., food choice) of food consumed, constitutes a central cause of obesity (Keller, Harlam, Loewenstein, & Volpp, 2011; Young & Nestle, 2002). More sedentary lifestyles, minimal physical activity, and genetics also help account for increases in people's weight and the related problems (Dehghan, Akhtar-Danesh, & Merchant, 2005; Preston, 2010).

In an attempt to address these concerns, public authorities highlight links between food choice and health, hoping to guide people toward healthier decisions (Luomala, Laaksonen, & Leipämaa, 2004), often with a special focus on restaurants' contributions to unhealthy eating. In particular, their power to encourage healthier food choice has come under special consideration (Jones, 2010), especially as eating out becomes a frequent, normal behavior rather than a special occasion (e.g., Binkley, 2006; Figuee & Vringer, 2007; Mutlu & Gracia, 2004). Restaurant services are among the biggest and fastest growing industries

(Andaleeb & Conway, 2006), thus offering an effective starting point for intervention.

To enhance understanding of food-related decisions, prior research mainly focuses on social influence as an explanatory factor (e.g., Baker, 1986; Christakis & Fowler, 2007; Cohen-Cole & Fletcher, 2008; McFerran, Dahl, Fitzsimons, & Morales, 2010a, 2010b), because it is considered "greater than any other influence on eating" (Herman, Polivy, & Roth, 2003, p. 883). From an analysis of food consumption and body weight across a social network of family and friends over 32 years, Christakis and Fowler (2007) conclude that obesity is contagious, such that people within the network influence one another with regard to their body weight. Cohen-Cole and Fletcher (2008) instead point to the influence of the shared environment, and other studies focus on the social influence of strangers. For example, McFerran et al. (2010a) investigate snacking habits during movies by considering the amount of food that participants consumed in the presence of a stranger. To the authors' best knowledge, no study has determined whether strangers' body shapes might have the power to alter what consumers eat.

In most restaurants, consumers can exert little influence over the amount of food (portion size), but they determine the type of food (meal alternatives). Then they consume their meals in the presence of strangers, including other guests and service employees. Several studies suggest that overweight people can have negative influence on others' food choice behaviors (e.g., Christakis & Fowler, 2007; McFerran et al., 2010a, 2010b), leading to further stigmatization and even discriminatory hiring practices that select employees on the basis of their appearance (e.g., Nickson, Warhurst, & Dutton, 2005; Warhurst, van den Broek, Hall, & Nickson, 2009). Warhurst et al. (2009) note that employees' looks are increasingly important in interactive service jobs and caution that it might be the "next frontier in the struggle against discrimination in employment" (p. 132). Service providers actively manage the service environment, service encounters, and service employees' behavior and appearance, because those aspects provide reference points for consumers' evaluations of the interaction and the service (Pieters, Bottschen, & Thelen, 1998). Therefore, it becomes worthwhile to consider whether the social influence of overweight strangers applies during the short interaction of customers with service employees in restaurants.

Furthermore, prior literature usually proxies the state of being unhealthy by presenting an overweight person. Yet medical literature reveals many indicators of poor health status, unrelated to weight, such as very pale skin, shadows under eyes, clothing styles that imply unhealthy behaviors (e.g., smoking, excessive alcohol intake), and tattoos (Belloc & Breslow, 1972; Shmerling, 2013; Steptoe & Wardle, 2001; Whitehead, Coetzee, Ozakinci, & Perrett, 2012). To the best knowledge of the authors, no research addresses whether such nonweight-related signals of an unhealthy lifestyle affect food choice.

Therefore, this article explores whether the presence of service employees who do not display the norm of a healthy body (whether overweight or displaying an unhealthy lifestyle) affects the healthiness of consumers' food choices in a restaurant setting. Existing research mostly relies on self-reported data, which are often biased in food studies (Meiselman, 1992). By applying eye-tracking technology, this study instead investigates underlying choice processes, often separate from conscious awareness (Wedel & Pieters, 2007). Because it reduces the social desirability bias, eye tracking offers new possibilities for shedding light on the multifaceted decisions in the realm of food consumption.

Accordingly, this study makes four contributions. First, it offers empirical results regarding the influence of strangers (i.e., service employees) on food choice. Second, it introduces two different unhealthiness displays (overweight employee and an employee displaying an unhealthy lifestyle). Third, in contrast with prior literature, this investigation focuses on the healthiness of the type of food (i.e., food choice) as opposed to the amount of food consumed (i.e., food intake). Fourth, the

eye-tracking method applied is novel in this field and suggests a means to investigate the process of choice prior to conscious awareness. In line with these varied contributions, this study draws on several research streams, including literature on the meaning of healthy eating. In addition, literature on social influence helps explain perceptions of the service encounter and decisions related to food consumption; social comparison theory provides a theoretical foundation to explicate the influence of service employees' external appearance on the healthiness of food choice.

LITERATURE REVIEW

Healthy Eating as Social Norm

Public policy makers and supranational organizations have long stressed the importance of a balanced diet (WHO, 2000). This is to encourage consumers to recognize the relationship among food, body weight, and health (Jutel, 2005). The policy effort has proven successful: Since the late 1970s, nutrition-related behaviors have emerged as consumers' most frequent activity to stay healthy (Harris & Guten, 1979), because they believe food consumption is a vital element to taking care of themselves (Östberg, 2003). Retailers and manufacturers of food products in turn eagerly position themselves as health-friendly to target health-conscious consumers (Leefflang & van Raaij, 1995; Prasad, Strijnev, & Zhang, 2008).

Public opinion generally associates being healthy with being thin, such that being thin seems normative for citizens and employees (Madden & Chamberlain, 2010; Nickson, Warhurst, & Dutton, 2005; Smeesters, Mussweiler, & Mandel, 2010), though the gap between this cultural norm and biological reality is widening (D'Alessandro & Chitty, 2011). Many overweight or obese people regularly suffer from social stigma and personal dissatisfaction (Dehghan, Akhtar-Danesh, & Merchant, 2005; Madden & Chamberlain, 2010). Women particularly perceive pressures; to be accepted in society, they believe it is necessary to adhere to a slim body ideal (D'Alessandro & Chitty, 2011; Roth, Herman, Polivy, & Pliner, 2001). As Sypeck and Gray (2004) note, frequent exposures to idealized bodies change women's perception of how they should look and thus their eating habits.

In a study of consumption stereotypes, Vartanian, Herman, and Polivy (2007) reveal that on the basis of food consumption decisions, traits such as gender roles and social appeal get assigned to people. Following Wansink, Just, and Payne (2009), they distinguish food choice (i.e., type of food consumed) from food intake (i.e., amount of food consumed). Consumers who opt for food rated high in terms of health value and low in caloric content are perceived as more feminine, attractive, likeable, and even moral (Stein & Nemeroff, 1995). Barker, Tandy, and Stookey (1999) also report

that consumers of low-fat diets stereotypically belong to the middle class, whereas high-fat diets are characteristic of the working class. Because consumers attempt to project socially desirable behavior to others, while also aiming for a desirable self-image (Paulhus, 1984), awareness of these stereotypes prompts people to alter their eating habits.

Combining these lines of argument, healthy eating seems to be a social norm, and food-related decisions are heavily influenced by stereotypes and socially desirable behavior. These results are elementary; this study seeks to build on them, because no prior study investigates how these social norms interact with customers' and employees in a typical service encounter.

Social Influence on Food Consumption

A service encounter refers to the "period of time during which a customer directly interacts with a service" (Shostack, 1985, p. 243). Employee behaviors during service encounters determine customers' perception of the service and their relationship with the service provider (Parasuraman, Zeithaml, & Berry, 1985; Pieters, Bottschen, & Thelen, 1998). For example, an employee's display of positive emotions enhances customer satisfaction and affects perceived service quality (Brown & Sulzer-Azaroff, 1994; Parasuraman, Zeithaml, & Berry, 1985). Customer emotions also strongly influence perceived satisfaction with a service encounter: The better customers' emotional state, the better their evaluations of the service encounter (Oliver, 1997).

Social influence affects more than consumers' cognitive appraisal of the service encounter. Research on food consumption shows that other people in an immediate environment have the power to influence consumers' choices. As noted previously, social influence thus represents one of the greatest impacts on food consumption (Herman, Polivy, & Roth, 2003). Most relevant research in this area addresses quantities of food consumed (Edwards & Gustafsson, 2008; Herman, Polivy, & Roth, 2003; McFerran et al., 2010a), though poor health and increased body weight result from both food choice and food intake (Wansink, Just, & Payne, 2009). Consumers tend to associate losing weight and adhering to the norm of healthy eating primarily with eating the "right" food though (Antonuk & Block, 2006).

Research on food intake consists of three main streams of studies, related to social facilitation theory, modeling, and impression management (de Castro & Brewer, 1992; Madzharov & Block, 2010; Roth et al., 2001). Depending on the perspective, intake might increase or decrease in social consumption situations. Social facilitation theory cites elevated food consumption in social settings (e.g., de Castro, 1990, 1994; de Castro, Bellisle, & Dalix, 2000; de Castro, Bellisle, Feunekes, Dalix, & De Graaf, 1997; de Castro & Brewer, 1992; Patel & Schlundt, 2001), in accordance with the time-extension hypothesis. That is, eating in

groups extends the time people spend eating, so it increases their food intake (de Castro, 1990). This almost linear, positive relation between the number of people present and meal duration (and thus food intake) has proven strong and positive, regardless of whether meals are eaten at home or in restaurants, across meal occasions (breakfast, lunch, dinner), and whether respondents eat full meals or snacks (Bell & Pliner, 2003; de Castro, 1990; de Castro & Brewer, 1992). The evidence spans from people eating alone and in pairs to large groups with more than six people (Herman, Polivy, & Roth, 2003). Family and friends, compared with other companions, have particularly strong effects on food intake (Clendenen, Herman, & Polivy, 1994; de Castro, 1994). Thus, de Castro, Brewer, Elmore, and Orozco (1990) call social facilitation "the most important and all-pervasive" (p. 100) influence on eating.

Modeling studies instead indicate both increased and decreased food intake (Nisbett & Storms, 1974). When respondents mimic or model others' food consumption behavior (Nisbett & Storms, 1974; Rosenthal & McSweeney, 1979), their food intake is not mutually influenced, unlike in the social facilitation scenarios. In such studies, the amount of food the model consumes is always predetermined by the experiment, and respondents display suppressed food intake when accompanied by somebody eating very little but elevated food intake when in the company of somebody eating a lot of the same food. Interaction effects have appeared for participants' and confederates' gender and weight, dieting habits, and hunger states (Conger, Conger, Costanzo, Wright, & Matter, 1980; Goldman, Herman, & Polivy, 1991; Rosenthal & McSweeney, 1979). Herman, Polivy, and Roth (2003) also refer to the process of mimicking food intake as a "matching norm" that reveals the appropriate amount of food in social consumption situations.

Finally, impression management studies (Leary & Kowalski, 1990; Roth et al., 2001) describe attenuating effects that emerge when people eat in the presence of others. Studies investigating impression management explore how people manage to control the impression that others form of them in social eating situations (Nisbett & Storms, 1974). Self-presentation, often used interchangeably, denotes that people are motivated to create positive beliefs about themselves (Leary & Kowalski, 1990). The desire to create certain impressions among others is grounded in the belief that those impressions determine how the person will be perceived, evaluated, and treated by others (Baumeister & Leary, 1995). In contrast with social facilitation theory and modeling studies, other people in proximity can be pure observers (Roth et al., 2001), who do not directly act as eating companions (Leary & Kowalski, 1990). Generally, the presence of a noneating observer leads to suppression of food intake (Herman, Polivy, & Roth, 2003). Studies on impression management with eating companions also show that unfamiliarity (Tice, Butler, Muraven, & Stillwell, 1995), opposite gender, attractiveness (Mori, Chaiken, & Pliner, 1987), and the

weight of the co-actors (de Luca & Spigelman, 1979) increase the suppression of food intake even further, because these factors increase impression motivation (Leary & Kowalski, 1990), that is, the desire to present the self favorably.

Depending on the circumstances, social influence or the presence of others thus has the power to increase (social facilitation and modeling) or decrease (impression management and modeling) food intake. Herman, Polivy, and Roth (2003) refer to this influence as the bidirectionality of the presence of others. Thus, Campbell and Mohr (2011) demonstrate, with a series of experiments, that consumers primed with the negative stereotypes of overweight people consume more cookies than consumers primed with normal weight or neutral stimuli; however, McFerran et al. (2010a) report contradictory results. In their experiments, consumers exposed to the presence of either thin or obese co-eaters responded such that the others' food intake but not their body shape appeared decisive for their food intake in these social settings. Prior research that draws theoretically from stereotype priming also builds on models of anchoring and adjustment that can be subsumed under the category of modeling studies. The contradictory findings suggest that the extremity of the manipulation of the body shape of others might determine the extent to which respondents are prone to social influence.

Most of these studies focus on food intake, whereas research into social influence on food choice is relatively sparse (McFerran et al., 2010a). McFerran et al. (2010b) raise the question of whether the mere body shape of a stranger can alter consumers' food choices. Extending their models of anchoring and adjustment (McFerran et al., 2010a), these authors examine the effect of others' body shapes on the kind of food consumed, namely, on dieters' and nondieters' choices between sugar-glazed rice cakes (healthy choice) and chocolate chip cookies (unhealthy choice), and their decisions about quantity when being served by thin or obese staff. According to their findings, body shapes affected the choice between healthy and unhealthy snack items by dieters, especially if the unhealthy alternative was recommended by a heavy server. McFerran et al. (2010b) offer two possible lines of reasoning to explain this effect: On the one hand, an overweight person might provide a daunting example for consumers, inhibiting unhealthy food choices, but on the other hand, viewing somebody who is overweight might provide "permission" for consumers to make unhealthy choices (Herman, Polivy, & Roth, 2003).

To the best of the authors' knowledge, no further studies focus on the external appearances of others and their influences on food choice. The amount of food clearly varies as a function of the social surrounding (Herman, Polivy, & Roth, 2003), and people adjust their food intake according to the body type of consumers around them (McFerran et al., 2010a). However, it remains unknown whether and how consumers adjust their food choices in terms of its healthiness in the

presence of strangers (i.e., service employees) who display different health states. Social comparison theory provides a potential rationale for this social impact.

Food Choice as Consequence of Social Comparison

People constantly engage in social comparisons. Social psychology acknowledges comparative evaluation as a mechanism that underlies human decision making (Mussweiler, 2003; Mussweiler, Rüter, & Epstude, 2004). Existing research often deals with consumers' comparisons with professional models in advertising (Buunk & Dijkstra, 2011; D'Alessandro & Chitty, 2011). The importance of a healthy body image and the health-food linkage (Luomala, Laaksonen, & Leipämaa, 2004) also makes it pertinent to take social comparison into account when investigating social interactions and food consumption. Herman, Polivy, and Roth (2003) consider social comparisons useful for determining the socially accepted amount of food that consumers will allow themselves in the presence of others. McFerran et al. (2010b) refer to personal identification as an underlying process driving the effects of altered food consumption.

According to Mussweiler, Rüter, and Epstude's (2004) selective accessibility model, people perceive others as similar or dissimilar to themselves or to socially agreed standards, an evaluation that is the consequence of an initial holistic assessment in which people focus on salient features or their perception that the person belongs to a certain category (Mussweiler, 2003). The informational analysis that forms the comparison builds mostly on semantic, rather than sensory, phenomena (Mussweiler, 2003). Perceived similarity leads respondents to adopt a similarity-oriented informational focus, but perceived dissimilarity leads them to focus on dissimilarities. A similarity-oriented informational focus is accompanied by assimilation of the self-evaluation due to the comparison. A dissimilarity-oriented informational focus is accompanied by contrasting self-evaluations. Haddock, Macrae, and Fleck (2002) reveal that the informational focus affects not only self-evaluation but also behavioral consequences. In a social situation in which a person focuses on similarities with another person, he or she assimilates his or her behavior toward that of the standard. Seeing a healthy-looking person while standing in front of a snack-food shelf thus should make a customer want to adhere to the normative standard of healthy eating and avoid calorie-dense food. In choosing a healthy snack, the customer assimilates choice behavior toward the norm of healthy eating. Seeing an unhealthy person instead might prompt a dissimilarity-oriented informational focus and thus contrasting behavior.

On the basis of findings from these three streams, which indicate that (a) healthy eating is a normative standard (Jutel, 2005), (b) social influence affects eating (Herman, Polivy, & Roth, 2003), and (c) behaviors

are influenced by social comparisons (Mussweiler, 2003; Mussweiler, Rüter, & Epstude, 2004), this study offers the following hypotheses:

- H1:** When exposed to an unhealthy-looking, that is, overweight service employee as opposed to a healthy-looking service employee, customers pay quicker (H1a) and more sustained (H1b) attention to unhealthy meal alternatives, which leads to the choice of unhealthy meal alternatives (H1c).
- H2:** When exposed to a service employee who signals an unhealthy lifestyle as opposed to a healthy-looking service employee, customers pay quicker (H2a) and more sustained (H2b) attention to unhealthy meal alternatives, which leads to the choice of unhealthy meal alternatives (H2c).

STUDY

Research Design

In the experiment, participants were asked to make a food choice in a typical restaurant setting. A video sequence showed a waitress handing the participant a menu. The waitress in the video displayed a healthy appearance, an unhealthy appearance in terms of weight, or an unhealthy appearance in terms of lifestyle. After being exposed to one of the three conditions, the respondents saw an on-screen representation of a menu with six meal alternatives: three healthy choices and three unhealthy choices.

Existing research on eating behavior mainly uses self-reported data on food choice and consumption or measures generated in laboratory settings (Meiselman, 1992). Subjects are susceptible to social desirability bias (Hebert, Clemow, Pbert, & Ockene, 1995) in particular for choice tasks that involve higher levels of cognition. Thus, the validity of such studies remains a substantial issue. Vartanian, Wansink, and Herman (2008) investigate whether consumers recognize external factors such as social influence and its impact on food intake. Their findings suggest that most people remain unaware of social influence. To control for these concerns, this study uses eye tracking to capture the process leading to a choice. Measuring visual perceptions with eye-tracking technology makes it possible to gain insights into rapid information processing, prior to conscious access or control, during stimulus exposure (Wedel & Pieters, 2007). As consumers lack conscious control over rapid information processing, factors such as social desirability that demands greater cognition exert less influence on the consideration of alternatives (Russo & Leclerc, 1994). Therefore, this study investigates the process leading to the decision.

Previous eye-tracking research has shown that the validity of eye movements as a measure of attention is

high and that the equipment does not disturb ongoing information processing (Russo, 1978), even in situations prone to social desirability bias. The predictive validity also is high for measuring information processing generated from cognition (Rosbergen, Pieters, & Wedel, 1997), as is the case in the present study. The application of eye-tracking techniques also answers Thompson, Subar, Loria, Reedy, and Baranowski's (2010) call for a broader use of technology in dietary research.

Sample Selection and Procedure

Female consumers are especially prone to social comparison (Trampe, Stapel, & Siero, 2007) and its potential negative consequences. Therefore, female students from a university were recruited as volunteer participants for this study; they constitute an appropriate sample (e.g., Nyer & Dellande, 2010; Smeesters, Mussweiler, & Mandel, 2010). Each respondent was introduced to the eye-tracking equipment and a general procedure. The study was embedded in a series of small experiments on consumer decision making in retail and service settings. Every participant received a questionnaire about different topics, which covered across different experiments, and was to provide some demographic information. Thus, it would be difficult for any participant to guess the purpose of any individual study. For the present experiment, the population was randomly assigned to three groups that corresponded with the three conditions. Respondents were offered a lottery ticket in return for their participation.

A total of 121 women participated in the study. To identify outliers and missing data, two variables were analyzed: total observation duration (TOD) and time to first observation (TTFO) of healthy versus unhealthy menu options. Some participants expressed extreme values, and others showed missing data. Therefore, 15 cases were excluded from the analysis of TTFO and two were excluded from the TOD analysis. To find multivariate outliers, an outlier analysis was applied using the Mahalanobis distance procedure (de Maesschalck, Jouan-Rimbaud, & Massart, 2000; Hadi, 1992). For TOD, the Mahalanobis distance test resulted in a maximum value of 27.36. Values above the cut-off point of 5.99 ($df = 2, p < 0.05$) indicate one or more outliers. Sorting by the Mahalanobis distance values revealed nine outliers. An identical procedure applied to TTFO (maximum value = 33.442, critical value = 5.99) resulted in the identification of six outliers. All these outliers were excluded. Identical results emerged from a z -scores outlier test with a cut-off point at $p < 0.05$. The average age of the participants was 22.9 years, and the ethnicity of the waitress in the video sequence was the same as that of the majority of respondents.

Stimuli Development

In the video sequence, in which a waitress handed over a menu from which respondents had to choose a



Figure 1. Waitress in the healthy, overweight, and unhealthy lifestyle conditions (from video sequences).

meal, the same person acted as the waitress, wearing comparable sets of clothing in the healthy, overweight, and unhealthy lifestyle conditions. In the healthy condition, she weighed 56 kg (123.46 lb) and was 171 cm (5.61 ft) tall, representing a body mass index (BMI) of 19.2, at the low end of normal weight. The waitress wore clothes of size EUR 34 (US 4). In the overweight condition, the same actress wore a fat suit to represent the body shape of an overweight person, which gave her the appearance of weighing approximately 85 kg, for a BMI of 29.1 (overweight). She wore clothes of size EUR 44 (US 14). For the manipulation of the unhealthy lifestyle condition, several cues related to looking unhealthy, in terms of mere physical appearance. First, the waitress had paler skin, which is usually perceived as less healthy and related to insufficient consumption of fruits and vegetables that enhance skin color (Whitehead et al., 2012). Second, the waitress had shadows under her eyes, often associated with sleep deprivation (Shmerling, 2013). Third, beyond mere physical appearance, indicators of unhealthy behavior might suggest smoking or alcohol consumption (Belloc & Breslow, 1972; Steptoe & Wardle, 2001); the waitress wore accessories, make-up, and a hairstyle that signaled a hedonistic lifestyle. She also displayed a highly visible tattoo on her right arm, which is associated with more risk-taking behavior (Carroll, Riffenburgh, Roberts, & Myhre, 2002). The manipulation check confirmed the suitability of these manipulations. Figure 1 contains screenshots of the different manipulations.

Pretests helped ensure that the external appearances of the stimuli evoked different levels of healthiness. Respondents indicated what kind of behaviors (exercise, eating large portions, consuming healthy food, sleeping regularly, drinking alcohol, and smoking) they considered characteristic of the waitress they saw in the different conditions. Compared with respondents in the healthy condition, respondents expressed significantly higher expectations that the waitress in the

overweight condition would consume more food and exercise less. The waitress in the unhealthy lifestyle condition was expected to have an unhealthy lifestyle in terms of diet, alcohol and nicotine consumption, and insufficient sleep or exercise.

After seeing one of the three conditions eye tracking measured the respondents' attention to the options in the menu, from which they ultimately had to make a choice. The menu offered meal alternatives that consumers should perceive as healthy or unhealthy. The healthiness of meal alternatives can be defined clearly, though subjectively perceived healthiness may differ (Brunsø, Fjord, & Grunert, 2002). Consumers rely on cues of healthiness, such as natural ingredients, less processing, or minimal fat content (Brunsø, Fjord, & Grunert, 2002). Imram (1999) also pointed out that color is the most obvious and well-studied cue among the visual aspects that customers perceive.

Accordingly, the stimuli development sought to present these cues. To support the eye tracking, the healthy and unhealthy meal alternatives were arranged in blocks, with healthy meal alternatives that consisted of minimally processed, low-fat food, presented in mostly shades of green, on the left side of the menu. The right side was dominated by ochre-like colors and indicated processed, high-fat food. Pictures of the different meals were accompanied by the names of the dishes (Figure 2). The menu also contained written information about the meal components and energy content. A pretest confirmed that respondents perceived the healthy meal alternatives as healthier than the unhealthy meal alternatives.

Manipulation Check

In addition to these pretests, a manipulation check served to test the quality of the stimuli. Respondents

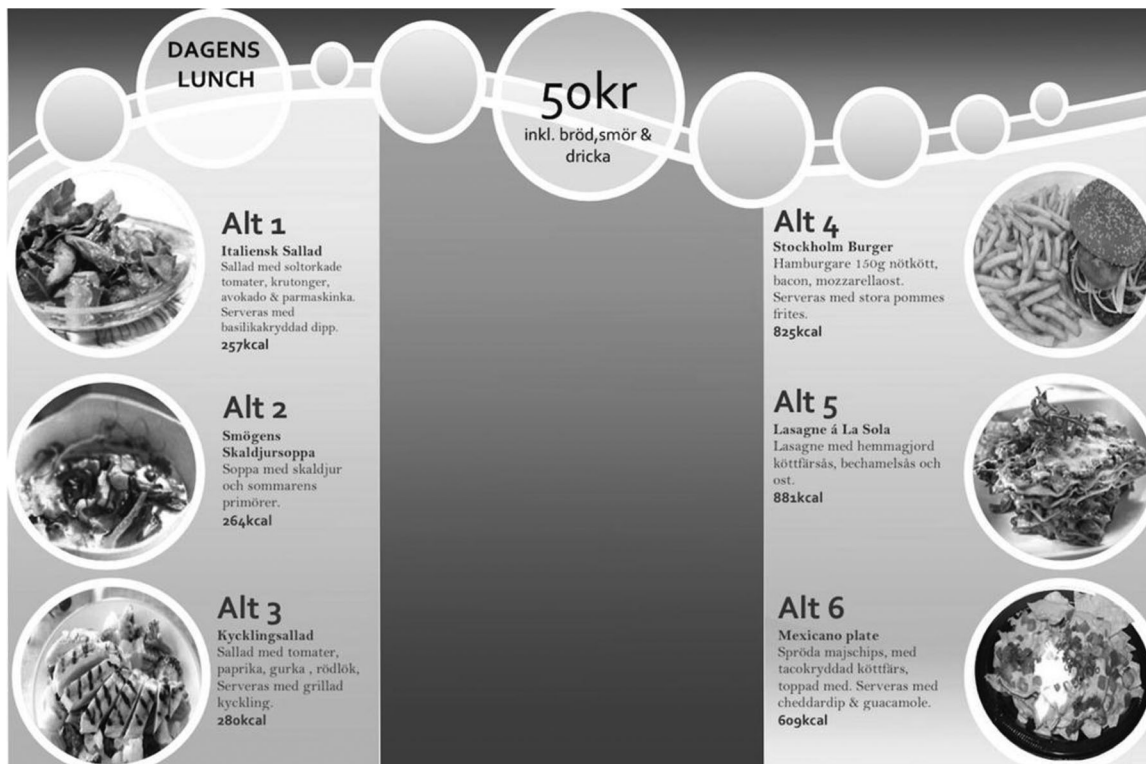


Figure 2. Menu with healthy and unhealthy meal alternatives.

indicated their agreement with the statement, “The woman in the movie has a healthy lifestyle,” on a 7-point Likert scale anchored by totally disagree (1) and totally agree (7). The manipulation check proved significant ($\alpha = 0.95$), $F(2, 105) = 9.48$, $p < 0.001$, such that participants indicated the woman in the picture appeared healthier in the healthy condition ($M = 3.89$, $SD = 1.304$) than in the overweight ($M = 2.53$, $SD = 1.60$) or unhealthy lifestyle ($M = 2.55$, $SD = 1.62$) conditions. In support of the study design, with one healthy appearance and two kinds of unhealthy appearances, the perceived difference between the overweight and unhealthy lifestyle condition was not significant.

Measures

People only perceive a small fraction of the visual information in their surroundings, then cognitively process an even smaller fraction of that information (Oyserman, Yoder, & Fryberg, 2007). Therefore, processed information exerts an important influence on decision outcomes (Russo, 2011). When consumers repeatedly examine options, their reexamination can be attributed to the information load (e.g., preference, familiarity) of the option for a specific task (Chandon, Hutchinson, Bradlow, & Young, 2009). If consumers must resolve a search task, for example, they activate their memory structures (Huffman & Houston, 1993; Huffman & Kahn, 1998; Meyvis & Janiszewski, 2002) that guide their attention toward options with

features related to the search task (van der Lans, Pieters, & Wedel, 2008; Wedel & Pieters, 2007).

Eye movements involve both fixations and saccades (Duchowski, 2007). Fixations span longer times, during which the eyes rest on an area of interest to gather visual information. Saccades are rapid eye movements between fixations. This experiment used two fixation-based eye movement measures to assess respondents’ visual processing of healthy and unhealthy meal alternatives: TTFO) and TOD.

Time to first observation. The TTFO measure reflects the order of visual impact between different areas of interest, expressed in time. The first fixation after the menu appears constitutes a sort of entrance point, guided by the eye-tracking equipment to be identical for all respondents. The second fixation measures the direction of eye movements, which reveals the influence of the manipulation (healthy vs. overweight vs. unhealthy lifestyle) on the instinctive direction of people’s eyes toward healthy or unhealthy options. The initial direction of a person’s gaze is triggered by the scene (Janiszewski, 1988; Larson & Loschky, 2009), and at this stage, low-level information, such as colors and shapes, is sufficient for an initial assessment. The gist of the scene then directs consecutive observations to areas relevant for the task at hand. This measure indicates the order in which low-level pieces of information get perceived. For example, green is associated with healthy options, whereas orange is associated more with unhealthy

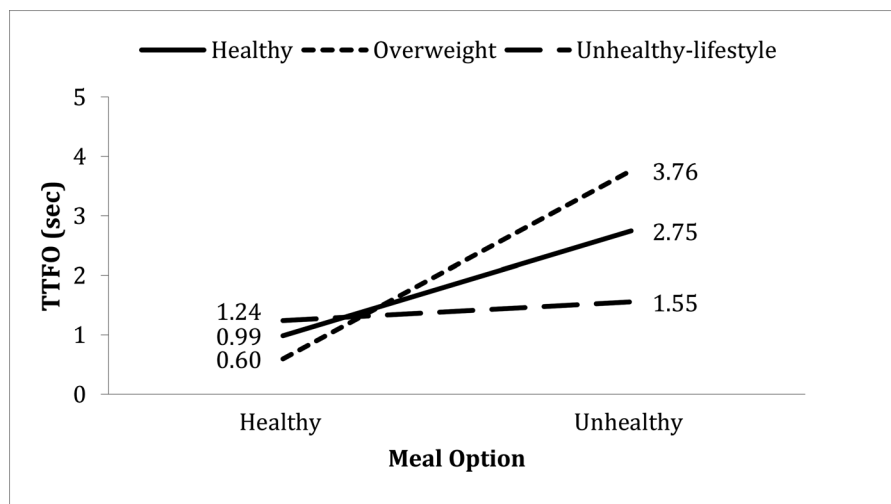


Figure 3. Interaction effect of the healthiness of the waitress' external appearance on TTFO.

options. Therefore, the measures of TTFO for healthy and unhealthy meal alternatives indicate whether participants are instinctively drawn toward healthy or unhealthy dishes.

Total observation duration. The TOD measure represents the visual measure of the time a person spends considering different options. Consideration is a time-consuming process that represents most observations in the search process (Russo & Leclerc, 1994), such that there is a relationship between the number of observations and the consideration of products (Pieters & Warlop, 1999; Russo & Leclerc, 1994). Previous research indicates that fixations on a product increase the probability of consideration by 13 percentage points (Huber & Payne, 2011). Consideration itself is an indicator of choice (Pieters & Warlop, 1999). The product chosen is usually the one considered most during the search process (Russo & Leclerc, 1994). For this experiment, the TOD for healthy and unhealthy meal alternatives indicated the level of interest in the options.

Results

A repeated-measures, between-groups analysis of variance (ANOVA) compared the effect of the waitress' external appearance (healthy vs. overweight vs. unhealthy lifestyle) on TTFO toward different food choice options (healthy vs. unhealthy meal alternatives). The results showed a significant main effect, $F(1, 97) = 46.07, p < 0.001$, such that participants, independent of the condition, looked at healthy options ($M = 0.93, SD = 1.14$) more quickly than at unhealthy options ($M = 2.72, SD = 2.13$). Furthermore, a significant interaction effect emerged between the waitress' external appearance and TTFO in the different food choice categories, $F(2, 97) = 9.74, p < 0.001$. The mean TTFO for healthy and unhealthy meal alternatives

differed significantly across the different conditions of the manipulation. Respondents in the unhealthy lifestyle condition looked significantly more quickly at the unhealthy meal alternatives ($M = 1.55; SD = 1.42$) than did respondents in the healthy ($M = 2.75; SD = 2.23$) or overweight ($M = 3.76; SD = 2.07$) conditions (see Figure 3), in support of H2a but not H1a. That is, the healthy and overweight conditions did not indicate any differences.

Another repeated-measures, between-subject factor ANOVA compared the effect of the waitress' external appearance (healthy vs. overweight vs. unhealthy lifestyle) on the TOD toward the different food choice options (healthy vs. unhealthy meal alternatives) and revealed a significant main effect, $F(1,109) = 29.36, p < 0.001$. Independent of the different conditions, respondents spent more time looking at healthy options ($M = 4.94, SD = 3.41$) than at unhealthy options ($M = 3.39, SD = 2.41$). This analysis also indicated a significant interaction effect, $F(2,109) = 4.30, p < 0.05$, across the different conditions of the waitress' external appearance and healthiness of the meal alternatives. According to the means in absolute terms, respondents in the healthy ($M = 3.78; SD = 2.53$) and overweight ($M = 3.50; SD = 2.65$) conditions spent more time looking at the unhealthy meal alternatives than did respondents in the unhealthy lifestyle condition ($M = 2.88; SD = 1.99$) (see Figure 4). However, accounting for respondents' overall decision time (Table 1), those in the unhealthy lifestyle condition spent a considerably bigger share of their total consideration time on unhealthy meal alternatives, in support of H2b but not H1b.

These results suggest the manipulation's (i.e., healthiness of the waitress' appearance) influence on the process leading up to actual food choice decisions. The analysis of choice data replicates the well-established relationship between consideration (i.e., TOD) and choice (Russo & Leclerc, 1994). An undirected, significant effect of TOD and choice can be

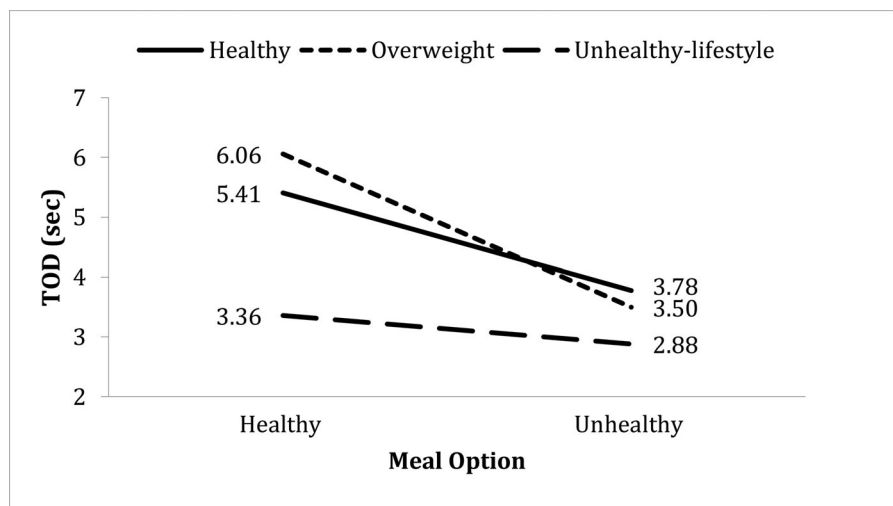


Figure 4. Interaction effect of the healthiness of the waitress' external appearance on TOD.

confirmed with a repeated-measure, between-subject factor ANOVA. The main effect of choice on TOD for the different meal alternatives proved significant, $F(1, 110) = 68.30, p < 0.001$. Respondents who opted for one of the healthy meal alternatives spent significantly more time considering healthy ($M = 5.72, SD = 3.36$) than unhealthy ($M = 2.95, SD = 2.23$) meal alternatives (Figure 5). Respondents who opted for one of the unhealthy meal alternatives spent significantly longer considering the unhealthy options ($M = 4.49, SD = 2.54$) compared with the healthy options ($M = 2.99, SD = 2.71$). These results confirm H1c and H2c.

DISCUSSION

The mechanisms underlying food choice, in terms of social influence in particular, remain unclear, especially when it comes to the social influence of unhealthy-looking strangers, such as service employees. This study has sought to explore consumers' decision-making process and subsequent decisions with regard to healthy and unhealthy meal alternatives after being served by an unhealthy- or healthy-looking waitress.

Its first contribution is to offer empirical results that affirm the social influence of strangers as a stimulus on the food choice process and resultant choices. In

contrast with prior literature focused on weight, this study investigated two displays of unhealthiness, which represents a second contribution. The results based on social comparison processes partly confirm previous findings that the external appearance of people nearby has the power to alter consumers' food choices. Contrary to expectations and previous results related to food choice (McFerran et al., 2010b), only the unhealthy lifestyle (cf. overweight and healthy conditions) influenced the food choice process, such that consumers altered their food choice. The results for TTFO (looking earlier) and TOD (looking longer) did not concur that being exposed to an overweight service employee altered people's propensity to choose unhealthy food options. Respondents in the healthy and overweight condition exhibited no deviant behavior with regard to the type of food on which they initially focused. Nor did respondents seem to consider an overweight service employee a reason for engaging in contrasting behavior (Mussweiler, 2003) or an excuse to self-indulge (McFerran et al., 2010b). However, the waitress who represented an unhealthy lifestyle caused respondents to focus on unhealthy meal alternatives. Respondents in this condition focused on unhealthy meal alternatives significantly more quickly than respondents in the other two conditions. Thus, in social comparison processes, exposure to signals of an unhealthy lifestyle caused consumers to

Table 1. Influence of Waitress' External Appearance on Attention for Healthy and Unhealthy Meal Alternatives.

Menu Options	Waitress External Appearance					
	Healthy ($n_{TTFO} = 37/n_{TOD} = 39$)		Overweight ($n_{TTFO} = 33/n_{TOD} = 36$)		Unhealthy lifestyle ($n_{TTFO} = 30/n_{TOD} = 37$)	
	Healthy	Unhealthy	Healthy	Unhealthy	Healthy	Unhealthy
TTFO	0.99(1.19)	2.75(2.23)	0.60(0.88)	3.76(2.07)	1.24(1.26)	1.55(1.42)
TOD	5.41(3.67)	3.78(2.53)	6.06(3.28)	3.50(2.65)	3.36(2.66)	2.88(1.99)

Notes : Standard deviation is indicated within parentheses.

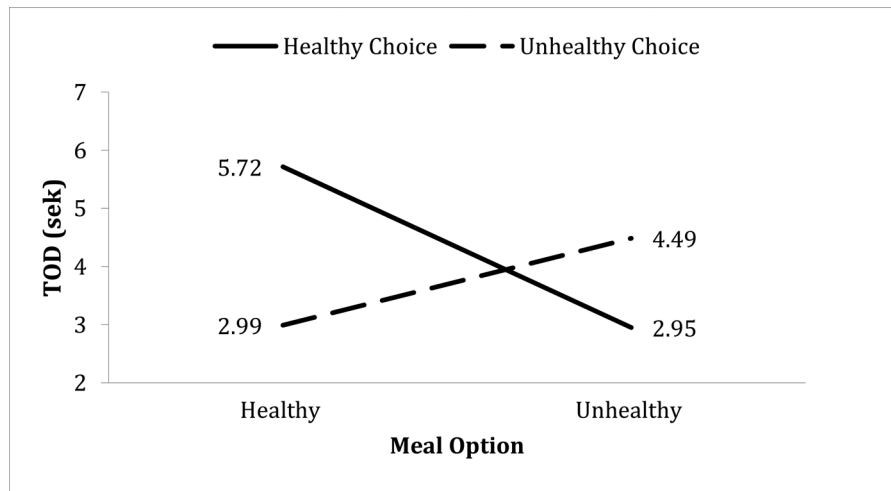


Figure 5. Effects of choice on TOD for healthy and unhealthy meal options.

focus on dissimilarities. This focus on dissimilarities resulted in contrast as respondent's behavioral consequence and influenced the food choice process. To contrast away from the norm of healthy eating led respondents to focus on unhealthy meal alternatives (Haddock, Macrae, & Fleck, 2002; Mussweiler, 2003; Mussweiler, Rüter, & Epstude, 2004).

Perhaps with its prevalence, being overweight is not perceived as a salient feature that causes consumers to focus on dissimilarities and contrast away from the standard. Another reason for this finding might be the intensity of the manipulation. The present study aimed at manipulating in a realistic, not too obvious way. Comparing the operationalization of overweight with those in prior studies on advertising (D'Alessandro & Chitty, 2011) reveals that the body shape manipulation can be much more extreme. This study accordingly calls attention to the need to realize that even strangers, during very short interactions, have the power to alter decision processes, and social influence on food choice cannot be restricted to research on overweight others. Rather, it should be broadened to include different displays of unhealthiness. The study results suggest that respondents perceive others who show signs of an unhealthy lifestyle as more different from themselves than are others who are overweight.

As a third contribution, this study broadens existing research that focuses predominantly on food intake rather than the type of food chosen. The present article extends McFerran et al.'s (2010b) research into how the amount of food consumed might be altered by the body shape of servers or how specific choices might be fostered by recommendations of service employees with varying body shapes. McFerran and colleagues found no significant effect of servers' body shape on food choice, which might be due to their choice of dependent variable. Healthy and unhealthy choices often get represented by single items, such as rice cakes versus chocolate chip cookies, rather than entire

meals. However, findings on consumption stereotypes (Vartanian, Herman, & Polivy, 2007) suggest that the associations between single items and socially undesirable practices of unhealthy eating might not be strong. In addition, solely observing choice allows capturing only little variety in consumers' behavior after they have been exposed to different body shapes. Therefore, research on social influence on food consumption should account for both food intake and food choice and make use of alternative variables as proxies for choice.

The discrepancies from previous findings also affirm the use of eye tracking as a method of investigation. It supports investigations of choice processes prior to awareness, even by the person making the choice. Food choice and eating are often considered "mindless," as they are low involvement activities (Tarkiainen & Sundqvist, 2009; Wansink, Just, & Payne, 2009). Employing eye-tracking technique to understand the seemingly minor factors in social food choice situations provides deeper insights into consumers' decision processes. The method can unveil minor changes in gazing behavior that lead to altered choice decisions. As this analysis of data shows, aggregated attention to healthy and unhealthy meal alternatives significantly influences consumers' choices. Understanding these influences is a key prerequisite of changing eating behavior, for better health and customers' satisfaction. Thus, another contribution of this study is to offer results based on subtle decision processes rather than self-reports.

The results further indicate that exposure to overweight strangers does not necessarily worsen the obesity epidemic by stimulating unhealthy food choices. Instead, these findings affirm there is no reason to stigmatize overweight people on the grounds that they alter other people's food choice behavior. The results not only have social implications for overweight people, they also have practical implications for the

service industry and design of public policy campaigns. Some service companies might hire on the grounds of body shape, which should be condemned as discriminatory and unnecessary. Instead they should make sure that the corporate styling supports healthiness of the service employees' look. Public policy campaigns could employ the present findings and address mechanisms of social comparison when designing media campaigns. To be convincing and guide behavior, testimonials that induce a similarity-oriented, instead of dissimilarity-oriented, focus are necessary to induce assimilation. If contrast is the desired consequence, models that stimulate a dissimilarity-oriented focus should be selected. For example, campaigns that seek to foster healthy eating, such as the consumption of fruits and vegetables, do not need to shy away from models with average body shapes. The target audience associates them with a healthy lifestyle and assimilates the norm of healthy eating.

As in every study, there are some limiting aspects to this study. Related to the use of eye tracking, this study took place in a lab setting. Eye-tracking technology increased the study's internal validity, by ruling out social desirability bias and measurement difficulties (Hebert et al., 1995), using measures that reflect the decision-making process rather than an outcome variable. However, the environmental influence cannot be neglected as a potential bias. Furthermore, social comparison processes are not the only explanations of respondents' decision-making processes. As McFerran et al. (2010b) note, theories of identification, nonconscious goal activation, and visual processing could be underlying mechanisms. In particular, there is no evidence that observed behavior relates to respondents' prior social comparisons with the stimulus (Mussweiler, 2003; Mussweiler, Rüter, & Epstude, 2004). Determining different phases of the choice process and examining gender and age effects in the course of social influence on food choice remain areas for further investigation.

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