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Health-Based Weight Stereotypes in Advertising: Perpetuating Unhealthy Responses among Overweight Identifiers

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ABSTRACT

In this research, we identify health-based weight stereotypes in advertising and demonstrate that they can perpetuate unhealthy outcomes within overweight populations. We show that advertisements featuring thin models and healthy (versus unhealthy) products lead to greater product–model fit, which leads consumers to view the advertisements more favorably. In contrast, for advertisements featuring overweight models and unhealthy (versus healthy) products, only overweight identifiers perceive higher levels of product–model fit leading to more favorable evaluations, perpetuating unhealthy consumption behaviors. In light of this concerning finding, we develop an actionable advertising strategy that better frames advertisements featuring overweight models to increase overweight consumers' likelihood of purchasing healthy products.

The obesity rate has tripled since 1975, with over 39% of adults overweight and 13% considered obese (World Health Organization [WHO] 2018). The distressing reality of these figures is that obesity is associated with both increased physical risks (e.g., cancer, type 2 diabetes, cardiovascular diseases) and psychological health risks (e.g., depression, anxiety, low self-esteem; Kottke, Wu, and Hoffman 2003). These psychological effects are heavily influenced by society's negative stereotypes regarding overweight individuals. In Western cultures, being overweight or obese is associated with being less attractive, lazier, and unhealthy (Puhl and Brownell 2001), and these negative stereotypes are perpetuated by the media, with overweight characters commonly shown eating junk food or being lazy (Greenberg et al. 2003; Puhl and Heuer 2009). The Western thin ideal that underlies these stereotypes is further perpetuated by advertisements featuring especially thin models; the average model weighs almost 20% less than the average woman her age (Bissell and Rask 2010).

Extant research has highlighted the detrimental effect that exposure to thin models in advertising has on consumer well-being (e.g., Grabe, Ward, and Hyde 2008). As a result, companies have shifted to include more overweight models in advertisements to better relate to their overweight demographic (Bissell and Rask 2010). However, such advertisements often portray the overweight model in a manner that reflects a negative health-based weight stereotype (HWS), defined here as the appearance of overweight (thin) individuals engaging in unhealthy (healthy) behaviors. For example, advertisements for Popeyes fried chicken feature "Annie the Chicken Queen," a plus-sized spokeswoman created to help Popeyes better identify with its target market. HWS imagery is also prominent on Instagram and Facebook where thin (overweight) influencers are typically paired with healthy (unhealthy) products.

As consumers generally report positive reactions to advertisements featuring overweight models (e.g., Peck and Loken 2004), the use of HWSs has gained

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prevalence in marketing and advertising (Heuer, McClure, and Puhl 2011) without a sufficient understanding of how they may influence consumer perception and behavior. Furthermore, relevant literature presents conflicting insights. Although the presence of these stereotypes often exacerbates implicit weight bias and stereotype internalization (Hinman et al. 2015; Pearl, Puhl, and Brownell 2012), the clear connection of a person to a stereotypical behavior (e.g., an overweight model eating unhealthily) has also been shown to mitigate the negative consumption effects (e.g., overeating) that can occur after exposure to an overweight individual (Campbell and Mohr 2011). In light of these divergent findings, the current research examines the consumer's own body image to understand how the activation of an HWS affects consumer judgment, advertisement evaluations, and purchase intentions.

Drawing from models of stereotype activation (e.g., Wheeler and Petty 2001; Pechmann 2001), we demonstrate that although the use of HWSs can lead to healthy consumption outcomes, their use can also perpetuate unhealthy outcomes among the overweight population when the stereotyped advertisement involves an overweight individual. Specifically, we demonstrate that when a self-relevant HWS is activated, the increased accessibility of stereotype schema and beliefs affects consumers' product–model fit judgments, which in turn lead to more favorable evaluations and purchase intentions (see Figure 1). In addition, we develop an actionable advertising strategy to combat another concerning facet of this finding: When an overweight model is shown engaging in positive health behaviors (e.g., paired with a healthy product), those that identify as overweight perceive a low level of product–model fit and thus lower evaluations and purchase intentions relative to the unhealthy product.

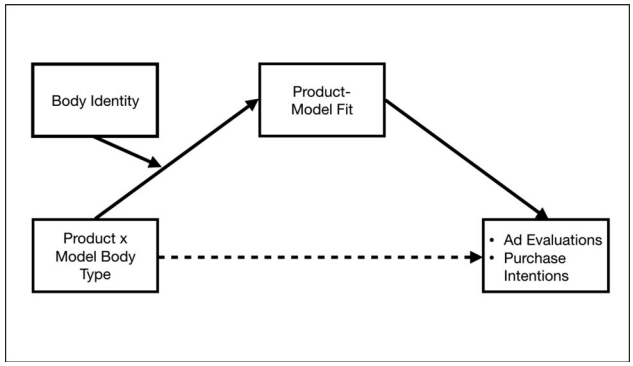

Figure 1. Conceptual model.

Literature Review

Obesity and Weight Bias

Perceptions of overweight individuals are overwhelmingly negative and exposure to stigmatized weight-based stereotypes can be psychologically damaging to overweight individuals (Seacat and Mickelson 2009). The socially constructed stigmatization of obesity manifests itself in the form of weight bias, which refers to the "negative attitudes toward and beliefs about others because of their weight" (Gumble and Carels 2012, p. 101). The stronger one's weight bias, the more negative attitudes one holds toward overweight individuals. Despite being targets of weight bias, overweight individuals also exhibit implicit weight bias (Grover, Keel, and Mitchell 2003). In other words, even those who are overweight hold negative perceptions of obese individuals, believing that overweight individuals are prone to overconsume indulgent foods and have a low commitment to health goals (Campbell and Mohr 2011). Unfortunately, for overweight individuals, weight bias leads to a vicious cycle of disordered eating, body dissatisfaction, and psychological distress (e.g., Gumble and Carels 2012).

Health-Based Weight Stereotypes in Advertising

To break the overweight–psychological distress cycle and combat implicit weight bias, advertisers attempt to appeal to the actual self-image of overweight people by using larger models in advertisements. Generally speaking, consumers respond positively to advertisements featuring overweight models (e.g., Janssen and Paas 2014; Peck and Loken 2004), although these perceptions depend upon consumers' own weight, their body esteem (Yu, Damhorst, and Russell 2011), and whether they believe their weight is fixed (Cinelli and Yang 2016). However, advertisements that feature overweight models commonly display HWSs (e.g., Greenberg et al. 2003) that can exacerbate implicit weight bias and perpetuate weight-based stereotypes (Hinman et al. 2015; Pearl, Puhl, and Brownell 2012). To understand the effect that HWSs have on overweight consumers we examine the effects of HWS imagery exposure on stereotype activation.

Stereotypes are "knowledge structures linking a social group to a set of traits or behavioral characteristics" (Hamilton and Sherman 1994, p. 3) and are activated in memory upon exposure to a group member or depictions of a group member. As a result, exposure to overweight individuals in imagery may

activate stereotypes at either a conscious or nonconscious level (Wheeler and Petty 2001). Once activated, stereotypes can influence consumers through two distinct processes: behavioral priming or cognitive accessibility.

In the behavioral priming paradigm (e.g., Bargh, Chen, and Burrows 1996), stereotype activation fires "patterns of cognitive construct activation that can alter behavior in the absence of alterations in an individual's conscious motivations and feelings" (Wheeler and Petty 2001, p. 803). In line with this standard behavioral priming effect, exposure to a stereotype can lead people to act in stereotype-consistent ways yet remain unaware of the influence of the prime (e.g., exposure to images of elderly people leads viewers to walk more slowly; Bargh, Chen, and Burrows 1996). However, being aware of the prime or that it may influence behavior can alter or negate the prime's effect (Lombardi, Higgins, and Bargh 1987). A key condition of behavioral priming is that "the activation of the behavioral tendency and response must be shown to be preconscious; that is, not dependent on the person's current conscious intentions" (Bargh, Chen, and Burrows 1996, p. 233).

Extant behavioral priming research suggests that HWSs may mitigate the unhealthy effects that exposure to an overweight figure can have on consumption. Campbell and Mohr (2011) primed stereotype activation via images of overweight (versus normal-weight) people to demonstrate that exposure to an overweight person increases stereotype-congruent indulgent eating. This finding suggests that exposure to any advertisement featuring an overweight individual may trigger more indulgent consumption behavior. However, in line with the behavioral priming paradigm, Campbell and Mohr (Experiment 4) further show that when the connection between the group stereotype and behavior is made clear by conspicuously displaying the stereotyped behavior (i.e., showing an image of the overweight person eating), the effect on indulgent consumption is effectively mitigated. Therefore, advertisements featuring HWSs that explicitly present both a group and a behavior (e.g., an overweight model and an unhealthy product) should not produce behavioral priming effects.

In contrast, the category accessibility paradigm states that when a concept is activated its relative accessibility is enhanced, rendering it likely to be used as a basis for interpretation of subsequent information and the formation of judgment (Srull and Wyer 1979). When stereotypes are activated, they increase the accessibility of stereotypic schema and beliefs, thereby influencing impressions and attitudes toward the target, and/or the selection and interpretation of available information (Bodenhausen and Macrae 1998). Furthermore, when a stereotype is highly accessible, people tend to pay more attention to and subsequently think more about stereotype-relevant information (Hamilton and Sherman 1994). As a result, stereotype activation can also affect behavior through changes in perceptions, judgments, and attitudes toward group members (Pechmann 2001).

One of the primary effects of stereotype activation "is that people who are (vs. are not) exposed to relevant primes judge targets as far more likely to possess stereotypic traits and treat them accordingly" (Pechmann 2001, p. 192). For example, Banaji, Hardin, and Rothman (1993) find that exposure to dependency primes led participants to rate females (but not males) as more dependent (a stereotypically female trait), whereas aggressive primes led participants to rate males (but not females) as more aggressive (a stereotypically male trait). In support of a category-accessibility process, research has observed that participants exposed to HWSs (e.g., images of overweight models eating potato chips on the couch) exhibit greater weight biases than do participants exposed to images incongruent with the HWS (Hinman et al. 2015; Pearl, Puhl, and Brownell 2012).

Given that stereotype activation can increase the likelihood that stereotypic traits are generalized to members of the stereotyped group, HWS activation should influence the perceived association between weight-based user imagery and weight-associated behaviors. To capture this consequence of HWS activation, we examine product–model fit—the perceived level of congruence between a spokesperson and the advertised product (Kamins 1990)—as this advertising construct similarly captures perceptions of the likelihood of the target individual possessing the stereotyped trait/engaging in the stereotyped behavior. That is, activation of an HWS in memory should facilitate greater perceived fit between a thin (overweight) spokesperson and the healthy (unhealthy) product that comprises the stereotype imagery. The greater the activation of stereotyped schemas and beliefs, the greater the likelihood that these core components (the model and product) should appear to "go together."

To better understand how and when the use of HWSs in advertising affects overweight consumers, we examine how the self-relevance of the stereotype differentially impacts consumers' product–model fit perceptions and subsequently their ad evaluations and behavioral intentions. We focus on self-relevance for

two key reasons. First, self-relevant (versus neutral) information is more frequently processed (Greenwald 1980), making it more readily accessible (Markus 1977) and easier to retrieve from memory (Higgins and King 1981). Thus, the salience of stereotyped schemas and beliefs will be greater when the target of the activated stereotype is similar to the perceiver. Furthermore, the greater the salience of this stereotype knowledge, the greater the likelihood that it will influence one's subsequent judgments and attitudes toward the target and further reinforce the stereotype (Pechmann 2001). Second, a large body of research has shown the self-relevance of a stereotype to be an important determinant of when and how stereotype activation will prime a behavioral response (Wheeler and Petty 2001).

Perceiving self-relevance begins by assessing primary features, which are then used to determine whether one is similar to a target individual (Mussweiler 2003). Thus, after exposure, one's judgment of similarity to a specific target (e.g., a model in an advertisement) is based on their assessment of a primary feature (e.g., the model's body shape) in relation to their perception of themselves on that key feature (e.g., their own body identity). For example, restrained eaters' self-evaluations following exposure to a thin model are based on their perceived similarity to the target model (Papies and Nicolaije 2012). To assess the self-relevance of HWSs we examine consumers' body identity.

Body Identity and Health-Based Weight Stereotype Activation

Body identity forms a central component of one's body image, which refers to "the picture we have in our minds of the size, shape and form of our bodies; and to our feelings concerning these characteristics and our constituent body parts" (Slade 1988, p. 20). Based on this definition, body image consists of (1) one's judgments of one's body size and (2) one's attitudes toward one's body. In the current research, we focus on the former, which we refer to as *body identity*. Specifically, we are interested in self-identification as either overweight or thin based on individuals' perceptions of their own body types.

For overweight identifiers, an overweight HWS (i.e., an overweight model paired with an unhealthy product) is self-relevant, and this has important implications for evaluations and behavior. First, HWSs in advertising are more likely to perpetuate stereotype internalization among overweight individuals (Hinman et al. 2015; Pearl, Puhl, and Brownell 2012). Even the mere presence of a bodylike shape is enough to increase stereotype-congruent behavior for those frequently focused on weight as a component of their self-concept (Romero and Craig 2017). Second, due to greater anxiety that results from being a target of weight-based discrimination, overweight identifiers are more likely to experience stereotype threat (Major, Eliezer, and Rieck 2012). This weight-based threat "stems from a person's awareness or belief that others see him or her as a member of the social category 'overweight,' combined with knowledge of the negative stereotypes and devaluation associated with this category" (Major et al. 2014, p. 74). This heightened sensitivity to weight cues makes weight-based self-stereotype threats more salient, thereby reinforcing negative self-stereotypes and influencing judgments of the target group (Pechmann 2001). As a result, the activation of an overweight HWS is likely to have a strong influence on overweight identifiers' perceptions and evaluations of the model–product element comprising the stereotype.

In contrast, for nonoverweight identifiers, the overweight HWS represents an other-stereotype (i.e., pertaining to a group to which one does not belong). Although nonoverweight identifiers still have knowledge of these stereotypes, they are less strongly reinforced than for overweight identifiers. As HWSs are less internalized among nonoverweight individuals, they are less likely to influence judgment when activated. For example, Campbell and Mohr (2011) address other-stereotypes by examining "how exposure to someone a consumer does not wish to emulate (e.g., someone overweight) can lead to an increase in behavior" (p. 431) and rule out any role of attitudinal changes in explaining their effect that exposure to an overweight figure leads to increased indulgent consumption. Importantly, this finding aligns with a large body of research showing that, as opposed to a category accessibility pathway, other-stereotypes engage a cold, ideomotor behavioral priming pathway that does not implicate consumers conscious motivations, thoughts, and feelings (Wheeler and Petty 2001). Thus, while other-stereotypes may prime behavior, they should have no influence on consumers' judgments and attitudes.

The social experience of overweight identifiers compared to nonoverweight identifiers suggests that body identity should differentially influence the extent to which HWS activation triggers corresponding stereotype schema and beliefs in memory. Specifically, we posit that the self-relevance of the stereotype (i.e.,

the similarity of the model's body type to the consumers' own body identities) will affect the extent to which activation will affect consumers' judgments of the likelihood of the target model engaging in the stereotyped behavior. Considered in the context of an advertisement featuring an overweight model, we expect that overweight identifiers will exhibit a higher level of perceived fit when the model is paired with a self-stereotype-congruent unhealthy product. Formally, we propose:

> **H1:** For an overweight model, overweight identifiers will perceive higher product–model fit when the model is paired with an unhealthy (versus healthy) product, whereas thin identifiers will exhibit no difference in fit between the two products.

The self-relevance argument would seem to suggest that only thin-identifying individuals should perceive a heightened level of fit for advertisements featuring the self-stereotype of a thin HWS (i.e., a thin model paired with a healthy product), as the stereotype is strongly held and highly salient for this group. However, this may also be the case for overweight identifiers. Relative to thin or normal-weight people, people who are overweight are highly sensitive to all weight-based cues and strongly internalize any weight-based stereotype (Major et al. 2014). This sensitivity paired with the prevalence of the thin ideal in mainstream media pressures overweight individuals to desire a thin body type as part of their ideal self-concept (Vartanian 2012). Furthermore, stereotype activation can activate a possible self that is associated with the properties of the stereotype (e.g., Markus 1977; Markus and Nurius 1986). As a result, the thin HWS is self-relevant to both thin- and overweight-identifying consumers. Therefore, both thin- and overweight-identifying consumers should experience heightened judgments of fit when exposed to a thin model paired with a self-stereotype-congruent healthy product. Formally, we offer a second hypothesis:

> **H2:** For a thin model, product–model fit will be higher when paired with a healthy (versus unhealthy) product regardless of one's body identity.

Thus far we have asserted that, due to a heightened strength and salience of stereotyped schema and beliefs, self-relevant HWSs implicate a category accessibility process in which activation of these stereotypes increases consumers' product–model fit judgments. As a result of this increased fit, the activation of a self-relevant HWS should subsequently influence both consumer evaluations and behavior through this category accessibility pathway. Research has shown that increased product–model fit perceptions lead to more favorable attitudes toward the advertisement and product (Kamins 1990; Kamins and Gupta 1994), greater ad believability (Kamins and Gupta 1994), and increased behavioral intentions (Choi and Rifon 2012). For example, participants indicated more favorable evaluations of an advertisement and higher purchase intentions when a celebrity endorser was paired with a high-congruence (versus low-congruence) product (Choi and Rifon 2012). We posit that as activation of self-relevant HWS affects judgments of product–model fit, it should subsequently lead to more favorable evaluations of the advertisement and likelihood of engaging in stereotype-congruent behavior even when that behavior is negative (i.e., engaging in unhealthy consumption).

In contrast, the activation of an other-relevant HWS should have no impact on either consumer evaluations or behavior, as the activation of other-stereotypes tends to prime a cold, ideomotor behavioral priming process. First, in line with our reasoning in hypothesis 1, as behavioral priming processes operate outside of one's conscious thoughts and feelings (Wheeler and Petty 2001), other-relevant HWS activation should not influence consumers' evaluations of the advertisement. Second, behavioral priming effects typically occur in situations in which individuals are unaware that a stereotype concept has been primed or that it will influence their behavior (Wheeler and Petty 2001). Thus, increasing attention to the stereotype–behavior link can eliminate the behavioral effects of the prime (Dijksterhuis and Van Knippenberg 2000). As Campbell and Mohr (2011) demonstrate, although the activation of an other-relevant overweight stereotype may lead to increased indulgent behaviors, the effect is mitigated when the stereotype–behavior link is clearly apparent, such as through the imagery used in ad-based HWSs (e.g., showing an overweight model with a stereotype-congruent unhealthy product). As this imagery is inextricably linked in HWSs, exposure to an other-relevant HWS should have no influence on subsequent behavior.

Based on these findings and our theorizing, we expect that when the stereotype is self-relevant, heightened cognitive accessibility will alter consumers' judgments of fit between the product and model, improving attitudes toward the advertisement and leading the consumer toward the behavior (healthy or unhealthy eating) exhibited by the model. However, when the stereotype is not self-relevant, we expect to observe no downstream influence on behavior or advertisement evaluations. Formally, we propose hypothesis 3:

H3: Product–model fit will mediate the effect of HWSs on advertisement evaluations and product purchase intentions when the stereotype is relevant to one's body identity.

Assessing Body Identity

Within extant literature, body identity has proven to be an elusive construct to accurately assess. Body mass index (BMI) is an objective measure of one's body proportions, but research often observes a disconnect between individuals' BMIs and their subjective perceptions of their bodies. Chang and Christakis (2003) found that 28% of participants misclassified their own objective weight status. Specifically, 38% of healthy-weight women perceived themselves to be overweight, while 33% of overweight men perceived their weight to be within a healthy range. These figures exemplify that "people who are not overweight by objective standards may nonetheless perceive themselves as such; likewise, people who are objectively overweight may not perceive themselves to be overweight" (Major et al. 2014, p. 75). Research shows no relationship between BMI and internalization of societal ideals (Vartanian 2009), while other research demonstrates counterintuitive weight stigmatization effects with BMI as the focal variable (Degner and Wentura 2009). Importantly, Campbell and Mohr (2011) find no relationship between BMI and the effect of exposure to overweight stereotypes on behavior. Therefore, as BMI does not capture people's perceptions of themselves as members of the "thin" or "overweight" reference group, it may not provide an accurate assessment of body identity.

As an alternative to BMI, self-reported body image is a more consistent predictor of weight-stigmatization-driven behavior (e.g., Major et al. 2014). However, assessing subjective body identity also presents problems as self-reports are subject to the effects of cultural norms and social desirability. For example, the discrimination displayed toward obese people can lead people to misreport their own body identities (e.g., self-thin) in explicit self-reports (Hill and Roberts 1998). As a result, people are often either unwilling or unable to accurately self-report on their own body identities.

In contrast, implicit measures provide a method of measurement that both captures one's self-body associations and does so in a way that is not subject to effects of socially desirable responding. Implicit social cognition (e.g., Greenwald and Lai 2020; Greenwald et al. 2002) describes body identity as an association between the self-concept and body type (i.e., thin to overweight). Because implicit measures, such as the Implicit Association Test (IAT; Greenwald, McGhee, and Schwartz 1998), do not require conscious effort or deliberation to access concepts in memory, they are not influenced by social desirability and demand characteristics. Implicit measures of both body image (Grover, Keel, and Mitchell 2003) and the implicit thin ideal (Wang, Brownell, and Wadden 2004) have been found to be uncorrelated with explicit body image. This lack of correlation is due, in part, to the biased self-reporting that stems from the sensitive nature of obesity or existence of negative overweight stereotypes (Puhl and Brownell 2001). Thus, implicit measures serve as an effective means of capturing one's body identity associations uninfluenced by outside artifacts (Greenwald, McGhee, and Schwartz 1998). Although prior research has raised concerns regarding the diagnostic ability and the predictive validity of the IAT (Blanton et al. 2006), high internal consistency and test-retest reliability support the IAT's efficacy as a measure of the relative strength of association between concepts in memory (Bar-Anan and Nosek 2014; Greenwald and Lai 2020). Further, although Olson and Fazio (2004) express concern that normative category labels may not be the same for all subjects (e.g., people have different perceptions of what is "positive"), they use the IAT to successfully predict stimuli associations when category labels refer to the self.

Research Overview

Adapting implicit measures to capture body identity at the associative level, three studies demonstrate that consumers' perceptions of HWSs in advertisements are shaped by their own body identity, and that these perceptions can lead overweight consumers toward suboptimal, unhealthy consumption. Study 1 applies the principles of balanced identity theory (Greenwald et al. 2002) to validate the use of implicit measures to capture body identity over traditional self-report measures and assess their sensitivity in capturing the association between body type and the self-concept. Study 2 provides evidence that overweight-identifying consumers perceive heightened fit when an overweight (thin) model is paired with a stereotype-congruent unhealthy (healthy) product and further identifies when this increase in fit will influence subsequent evaluations. Study 3 addresses the concerning lack of fit that overweight-identifying consumers perceive when an overweight model is featured alongside a

stereotype-incongruent healthy product. Specifically, we test an actionable advertising strategy to counteract this finding and show that we can shift overweight-identifying consumers' purchase behaviors toward healthy products.

Study 1

To investigate the influence of the effect of body identity on response to HWSs in advertising, it is critical to identify a robust measure of body identity. Given that any individual measure of body identity has limitations, we propose that it is important to instead assess body identity through a combination of measures that more holistically capture the implications of that identity. To that end, Study 1 measures multiple implicit associations and explicit measures. The specific set of measures used were derived from balanced identity theory, which defines the principles that govern self-related associations in one's knowledge structure (i.e., self-concept, self-esteem, stereotypes, and attitudes) (Greenwald et al. 2002). Body identity is the connection between one's self-concept and body type and exists as part of an interconnected triad of body image associations that also includes weight bias (e.g., the idea that being overweight is bad; Carels et al. 2013; Hinman et al. 2015) and the valence associated with the self (e.g., self-esteem). Balanced identity theory draws from congruity theory (Osgood and Tannenbaum 1955), cognitive dissonance theory (Festinger 1957), and balance theory (Heider 1958) to demonstrate that to prevent conflict between these triads of associations, individuals will unconsciously bring them into alignment (for a deeper discussion of this process, see Greenwald et al. 2002). Importantly, each of the three associative relationships in these triads can be assessed with both implicit measures and traditional self-report measures, allowing us to compare the predictive validity of each measurement type.

To assess each component of body image, Study 1 employs a series of IATs, a series of self-report measures, and BMI to determine how well each measurement method conforms to the primary prediction of balance theory. Specifically, we expect that the strength of any single association in the body image triad is the predictable result of the multiplicative function of the other two associations. For example, body identity is predicted to be a function of weight bias and self-esteem. Below, we explain in detail the analysis for these implicit triads.

Stimuli, Procedure, and Measures

For this study, 219 undergraduate students took part in exchange for course credit. Study 1 consisted of an implicit (phase 1) and explicit component (phase 2). In phase 1, participants completed three IATs (Greenwald, McGhee, and Schwartz 1998) designed to assess body identity (BI-IAT), weight bias (BA-IAT), and self-esteem (SE-IAT; for all IAT stimuli, see Appendix A). The IAT consists of blocks of trials in which stimuli are presented one at a time and are categorized as quickly and accurately as possible by participants. The IAT operates under the assumption that behavioral responses to target stimuli objects (i.e., pressing an appropriate key on a keyboard) should be easier to carry out when the underlying associations between the objects are more strongly held in memory. Thus, responses are captured as a latency measure wherein faster response times represent a stronger association between two concepts (for a detailed overview of IAT methodology, see Greenwald, McGhee, and Schwartz 1998). The IATs were conducted on a desktop computer using Millisecond's Inquisit software. Participants completed each of the three IATs in a randomly assigned, counterbalanced order. Participants first provided their gender to ensure that the image stimuli in the tasks matched their gender.

Phase two consisted of self-report measures equivalent to the implicit association tests. To measure self-esteem, participants answered a 10-item self-esteem scale (Rosenberg 1965). To measure body identity, participants saw a gender-matched pictorial scale with nine progressively larger body types (Thompson and Gray 1995) and selected the image most similar to their current body type. Finally, to measure explicit weight bias, subjects rated the extent to which they agreed with the following statement: "The ideal woman in our society is too thin" (Hebl, King, and Perkins 2009). After completing both phases, participants completed a short demographic questionnaire, including height and weight to determine BMI scores.

Results

The IAT effect is captured by the difference in average response time latency between congruent and incongruent target trials. The order of trial presentation (incongruent versus congruent block first) was randomly counterbalanced between subjects. The raw response time data from the two sets of target trials were converted using the *D* measure scoring algorithm (Greenwald, Nosek, and Banaji 2003). The *D* measure rescales IAT effects by dividing each individual's mean latency difference (i.e., target

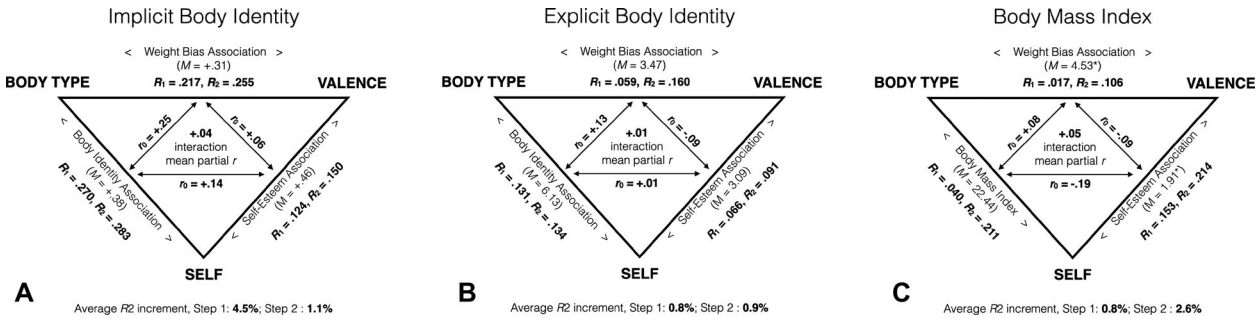

Figure 2. Balanced identity models (Study 1).

Note. Figure 2 presents the summary of statistical tests for implicit and explicit measures. The three concepts (self, group, and valence) are named at the corners of each triangle, with associations listed along each triangle edge (e.g., weight bias association). Study 1 tests the balanced identity design with A) implicit body identity measures, B) explicit body identity measures, and C) self-reported Body Mass Index. Mean values are reported in standard deviation units. Zero-order correlations between the pairs of associations (r0) are shown on the inner triangle. Step one in balanced identity theory is confirmed if the r0s have the same sign as the mean value of the measure of the third association (i.e., parallel, opposite edge of triangle). The test using implicit measures (Figure 2A) meets this criteria. Both explicit measures failed to meet this criteria (Figures 2B and 2C). For example, for explicit body identity (Figure 2B) the r0 between weight-bias association and self-esteem is -.09, but the corresponding correlation of +.13 is inconsistent with a balanced identity design. The multiple regression coefficients produced in the first and second steps of the regression analyses are reported as R1 and R2, respectively. In the inner triangle of each figure we report the mean partial correlation of the interaction effect partial correlations that were obtained in the second step of the hierarchical multiple regression.
*Reverse coded to maintain directional consistency with BMI measure.

congruent trials – target incongruent trials) score by the pooled standard deviation of the components of the difference score. The IATs were coded such that higher values indicate stronger self-thin (BI-IAT), self-positive (SE-IAT), and thin-positive (BA-IAT) associations.

Best practices for latency data include removing participants with (a) extremely long latencies (> 10,000 ms), which indicate possible distraction; (b) extremely short latencies (< 300 ms for greater than 10% of trials); or (c) high error rates (> 30%), which indicate possible inattention (Greenwald, Nosek, and Banaji 2003; Nosek et al. 2014). We follow these cleaning practices in each of our studies. In Study 1, 15 participants were removed for extremely high error rates, leaving a final sample of 204. Analyses were conducted using the protocol outlined by Greenwald et al. (2002), in which four criteria must be satisfied to provide substantial support for a balanced identity design: (1) in step 1, R_1 accounts for substantial variance and beta (b_1) should be positive; (2) in step 2, beta (b_1) for the interaction should remain positive; (3) R^2 change should not be significant when main effects are added in step 2; and (4) the main effects (b_2 and b_3) in step 2 should not be significantly different from zero.

The balanced identity design was first tested using a series of three hierarchical regressions, each using a different IAT measure as the dependent variable (see Figure 2). In step 1 of each regression, the dependent variable was regressed upon the interaction term for the two adjacent predictor variables. In step 2, the interaction's two component variables were included in the model as separate predictors. Each of the three regressions fulfilled the four requirements of a balanced identity design. First, in step 1 of each regression, there was a substantial R_1 value associated with a positive value of b_1 (average standardized value for $b_1 = 0.204$, $ps < 0.01$). Second, the value of b_1 remained numerically positive in step 2 of each analysis with a mean partial correlation of +0.04. Third, there was a nonsignificant increase in variance explained from step 1 to step 2 in each of the regression models (all $ps > 0.15$). Fourth, neither b_2 nor b_3 (coefficients of predictor variables) was significantly different from zero in step 2 (all $ps > 0.14$), suggesting that the interaction between the two component variables alone accounts for the variance explained in the dependent variable in each regression.

The same three regressions were performed both with explicit measures and BMI to capture body identity, and no support for balanced identity theory was found. In fact, for explicit measures, not one of the three regressions fulfilled even the first requirement of the criteria (i.e., that the interaction account for significant variance with a positive beta), rendering further analysis unnecessary. Regression results are summarized in Figure 2. Implicit body identity exhibited a small correlation with both explicit body identity ($r = 0.23$, $p < .001$) and BMI ($r = 0.16$, $p < .05$).

Discussion

The results of Study 1 demonstrate that implicit measures effectively capture body identity as it relates to

associated components of one's self-concept (i.e., self-esteem and weight bias). Following Greenwald et al.'s (2002) balanced identity theory, the association between the self and one's body identity exists as a multiplicative function of self-esteem and weight bias. That is, as a result of its connection to the self at the associative level, the direction (i.e., self-large/self-thin) and magnitude (strength of association) of one's body identity is predicted by the interaction between self-esteem and weight bias associations. Further, our results do not support the use of explicit body identity self-reports or BMI for assessing body identity, perhaps due to related issues with miscategorization and self-presentation that are inherent in these measures. This finding highlights the efficacy of employing an implicit measure of body identity to capture this concept at the associative level.

Study 2

Study 2 provides a test of our hypotheses using the IAT to measure body identity. Once again, we expect that for advertisements featuring a thin model, product–model fit will be higher for healthy (versus unhealthy) products across all levels of body identity. For advertisements featuring an overweight spokesperson, overweight-identifying consumers will exhibit higher product–model fit for unhealthy (versus healthy) products, while thin-identifying consumers will exhibit no such differences in fit. Furthermore, in line with hypothesis 3, we expect that these increases in fit will increase evaluations of the advertisement when the stereotype is self-relevant.

Stimuli, Procedures, and Measures

A total of 329 undergraduate students took part in exchange for partial course credit. Seven subjects were removed from analysis for incomplete IAT data, leaving 322 participants. Participants first completed the body identity IAT using the same IAT procedure described in Study 1. Next, participants were randomly assigned to conditions in a 2 (model body type: thin, overweight) × 2 (product healthiness: healthy, unhealthy) experimental design. Participants first examined a beverage advertisement pairing either a thin or overweight female model with either a healthy or unhealthy product. In the healthy condition, the advertisement featured an "original superfood" flavored Odwalla smoothie, and in the unhealthy condition the advertisement featured a "chocolate fudge brownie" flavored Ben & Jerry's milkshake. After viewing the advertisement, participants were then asked to complete a measure of product–model fit to assess the perceived likelihood of the target (i.e., the model) engaging in the stereotyped behavior (i.e., consuming unhealthy foods). Next, participants reported their attitude toward the brand. We used a single measure of attitude toward the advertisement that has been shown to be sufficient (Bergkvist and Rossiter 2007). Finally, participants rated model attractiveness, product healthiness, and model body type (see Appendix B for all stimuli and measures). We measured explicit body identity using a gender-matched pictorial scale with nine progressively larger body types (Thompson and Gray 1995) where participants reported which image best represented their current body type. Finally, participants reported height and weight—which were used to calculate BMI—and demographics. Previous research suggests that men and women differentially misclassify their body type (i.e., women perceive themselves as heavier than they actually are, while men have the opposite bias; Chang and Christakis 2003). Although these self-presentational misclassifications occur at the explicit level, which supports our use of an implicit measure to capture body identity, we include gender as a covariate in our analyses.

Results

Manipulation checks showed that the product healthiness and model body type manipulations were successful. First, a model body type × product healthiness analysis of variance (ANOVA) on product healthiness ratings revealed only a significant main effect of product healthiness, F (1, 318) = 364.29, $p < .001$. Participants in the healthy condition perceived the product to be significantly healthier ($M_{\text{healthy}} = 4.92$) than those in the unhealthy condition ($M_{\text{unhealthy}} = 2.15$). Second, a model body type × product healthiness ANOVA on model body type perceptions revealed a significant main effect of model body type only, F (1, 318) = 536.48, $p < .001$. Participants in the overweight condition perceived the model to be significantly larger ($M_{\text{overweight}} = 5.57$) than those in the thin condition ($M_{\text{thin}} = 2.58$).

The IAT effect was captured using the D measure (Greenwald, Nosek, and Banaji 2003). In this study, implicit body identity was coded such that higher values indicate stronger large self-body associations. PROCESS Model 3 (Hayes 2017) was used to regress product–model fit on product healthiness, model body type, implicit body identity, all two-way interactions, the three-way

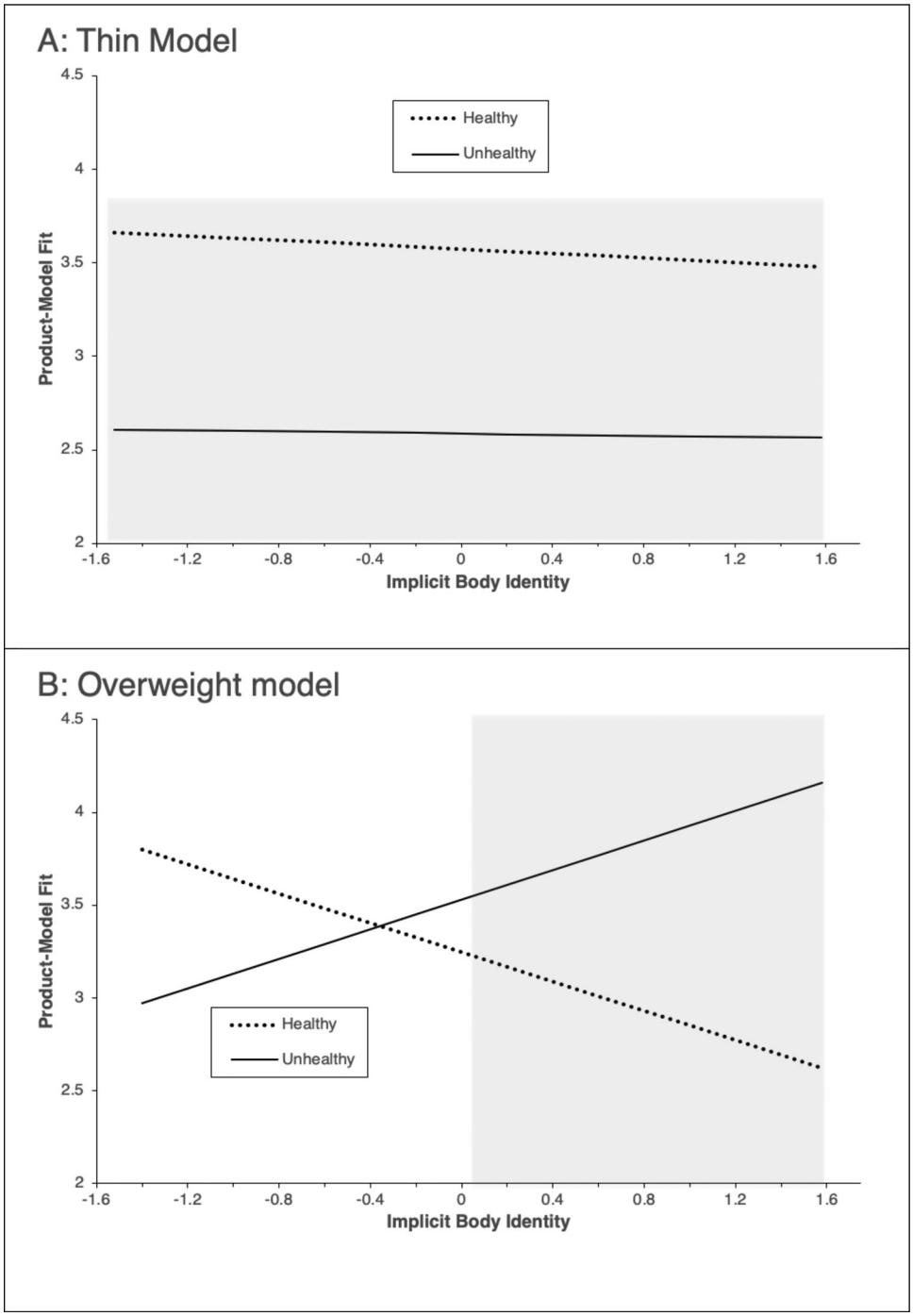

Figure 3. The effect of health-based weight stereotypes on product–model fit perceptions as a function of consumers' implicit body identity (Study 2).

interaction term, and model attractiveness and gender as covariates. Results indicated a marginally significant three-way interaction, $\beta = .78$, $t\ (312) = 1.88$, $p = .06$. To better understand the nature of this interaction, we tested the simple interaction effects of product healthiness and implicit body identity at each level of model body type. Consistent with our predictions, these tests revealed a significant product healthiness × implicit body identity interaction in the overweight model condition, $\beta = .73$, $F\ (1, 312) = 5.89$, $p < .05$. In contrast, no significant interaction was found in the thin model condition, $F\ (1, 312) < 1$. Furthermore, supplementary analyses using either objective (BMI) or self-reported measures of body identity in place of the implicit measure did not yield the expected three-way interaction, BMI: $|t\ (312)| < 1$; self-report: $|t\ (312)| < 1$.

Next, we used floodlight analyses to test the effect of product healthiness across implicit body identity

Table 1. Moderated mediation analysis (Study 2).

	(M) Product–Model Fit			(DV) Ad Attitude			
	B (SE)	*t* (*p* <)	95% CI	*B* (SE)	*t* (*p* <)	Conditional Indirect Effect (SE)	95% CI
(X) Product	−1.02 (.18)	−5.55 (.001)	−1.38, −.66	−.00 (.19)	−.002 (1.00)	–	−.38, .38
(M) Product–model fit	–	–	–	.47 (.06)	8.17 (.001)	–	.35, .58
(W) Model size	−.10 (.18)	−.55 (.58)	−.46, .26	.14 (.19)	.76 (.44)	–	−.22, .51
(Z) Implicit body identity	.01 (.21)	.06 (.95)	−.40, .42	−.16 (.21)	−.76 (.45)		−.57, .25
X × W	1.25 (.26)	4.76 (.001)	.73, 1.76	.26 (.27)	.94 (.35)		−.28, .79
X × Z	−.05 (.29)	−.18 (.86)	−.61, .51	.15 (.29)	.52 (.60)		−.42, .72
Z × W	−.38 (.30)	−1.28 (.20)	−.96, .20	.02 (.30)	.07 (.94)		−.57, .61
X × W × Z	.78 (.42)	1.88 (.06)	−.04, 1.60	.34 (.42)	.80 (.43)	–	−.50, 1.17
Attractiveness	.19 (.04)	4.33 (.001)	.10, .27	.31 (.05)	6.95 (.001)		.22, .40
Gender	−.32 (.13)	−2.42 (.02)	−.58, −.06	−.50 (.13)	1.42 (.001)		−.77, −.23
Thick model + Overweight identifiers	–	–		–	–	.32 (.13)	.08, .59
Thick model + Thin identifiers	–	–		–	–	−.11 (.12)	−.36, .14
Thin model + Overweight identifiers	–	–		–	–	−.49 (.15)	−.80, −.23
Thin model + Thin identifiers	–	–		–	–	−.46 (.13)	−.74, −.23

scores at each level of model body type (thin versus overweight). Supporting hypothesis 1, in the overweight model condition, participants who saw an ad for an unhealthy (versus healthy) product perceived higher levels of fit at any implicit body identity score above 0.10 ($\beta_{JN} = .36$, t (155) = 1.98, $p = .05$; see Figure 3). That is, those with larger self-body associations (i.e., overweight identifiers) exhibited stronger fit perceptions when the overweight model was paired with an unhealthy (versus healthy) product, while no such differences were found for those with smaller self-body associations. However, in the thin model condition, results indicated a simple main effect of product type across all levels of implicit body identity, $\beta = -.99$, t (155) = −5.33, $p < .001$, providing support for hypothesis 2. That is, across all levels of implicit body identity, fit was perceived to be higher when a thin model was paired with a healthy (versus unhealthy) product.

Next, we conducted a conditional process analysis to test whether the model body type × product healthiness interaction led to more positive attitudes toward the advertisement as a result of the increased product–model fit perceptions experienced when viewing stereotype-congruent advertisements. We used the PROCESS macro (Model 12; Hayes 2017) with a bootstrap procedure (5,000 draws) to construct bias-corrected confidence intervals (CIs) (see Table 1). First, for advertisements featuring an overweight model, results indicated that the indirect effect of product type on attitudes toward the advertisement through product–model fit was conditional upon implicit body identity ($B_{index} = .34$, SE = .15, 95% CI = [.07, .65]). That is, for overweight identifiers (+1 SD body identity), perceived fit was higher when the overweight model was paired with an unhealthy (versus healthy) product, which led to more positive attitudes toward the advertisement ($B_{+1SD} = .32$, SE = .13, 95% CI = [.08, .59]). In contrast, there was no significant indirect effect found for thin identifiers (−1 SD body identity; $B_{-1SD} = -.11$, SE = .12, 95% CI = [−.36, .14]). Second, for advertisements featuring a thin model, results indicated that the indirect effect of product type on attitudes toward the advertisement through product–model fit was not conditional upon body identity ($B_{index} = -.02$ SE = .13, 95% CI = [−.29, .22]). Indirect effects were similar for both overweight identifiers ($B_{+1SD} = -.49$, SE = .15, 95% CI = [−.80, −.23]) and thin identifiers ($B_{-1SD} = -.46$, SE = .13, 95% CI = [−.72, −.23]). That is, for both thin and overweight identifiers, perceived fit was higher when the thin model was paired with a healthy (versus unhealthy) product, which led to more positive attitudes toward the advertisement.

Discussion

The results from Study 2 provide empirical support for our assertion that the way in which a consumer perceives his or her own body type colors perceptions of HWSs and therefore produces divergent effects on evaluations of advertisements that portray such stereotypes. Specifically, for advertisements featuring a thin model, both thin and overweight identifiers perceive greater fit when the model is paired with a healthy (versus unhealthy) product, leading to more positive evaluations of the advertisement. Although the internalization of the thin ideal has been shown to be psychologically detrimental to overweight consumers (Wang, Brownell, and Wadden 2004), the "thin equals healthy" stereotype does appear to lead consumers to view healthier consumption options more favorably

regardless of their own perceived body types. However, the results suggest that the use of overweight models in advertising may generate mixed results. Although the use of overweight models helps address the negative impact that thin models have on consumer self-perceptions (e.g., Grabe, Ward, and Hyde 2008) and the negative stereotypes that often accompany their portrayal in advertisements (Greenberg et al. 2003; Pearl, Puhl, and Brownell 2012), it may also ironically reduce consumer adoption of healthy behaviors. As Study 2 demonstrates, overweight identifiers perceived greater fit when an overweight model was paired with an unhealthy (versus healthy) product, leading to more positive evaluations of the advertisement. This finding suggests that the presence of an HWS featuring an overweight model renders overweight-identifying consumers more prone to advertisements featuring unhealthy products.

Study 3

In Study 2, we showed that overweight identifiers perceive a higher level of product–model fit when an overweight model is paired with a stereotype-congruent unhealthy product, leading to the unhealthy product being viewed more favorably. For overweight identifiers, the activation of a self-relevant overweight stereotype has a strong impact on subsequent judgments of group members' likelihood of engaging in stereotype-congruent behaviors. As a result, judgments of product–model fit and subsequently the favorability of the advertisement are high for stereotype-congruent unhealthy products but are much lower for stereotype-incongruent healthy products. Despite portraying the overweight model in a more positive light, evaluations of the "overweight + healthy" advertisement suffer, as overweight identifiers do not see a fit between model and product, because this pairing is neither internalized as part of the "overweight equals unhealthy" stereotype, nor is it seen as part of the idealized "thin equals healthy" stereotype. Indeed, research has shown that interventions designed to present overweight individuals in a positive light are ineffective at countering the negative effects of implicit weight bias (Flint, Hudson, and Lavallee 2013). Therefore, in Study 3 we develop an advertising strategy capable of reversing this troubling finding by increasing overweight identifiers' level of perceived product–model fit for health-based advertisements that run counter to the prevalent "overweight equals unhealthy" stereotype.

As the findings of Study 2 demonstrate, portraying a healthy product with a thin model increased overweight identifiers' perceptions of fit and the favorability of the advertisement. Therefore, increasing fit and subsequent evaluations of an advertisement featuring an overweight model and a healthy product should be achievable by connecting the overweight model's consumption of the healthy product to the ideal self-relevant goal of attaining the healthier weight (e.g., via messaging). Thus, in Study 3 we explicitly align the model's behavior (consuming a healthy product) with the ideal self of the overweight identifier to demonstrate that a manipulation of product–model fit is sufficient to raise overweight identifiers' ad evaluations. Further, advertisements are most effective to the extent that they change behavior, so we also investigate product purchase intentions.

Stimuli, Procedures, and Measures

A total of 228 undergraduate students took part in exchange for partial course credit. We removed 23 participants with incomplete IAT data, leaving 205 participants. Participants first completed the gender-matched body identity IAT following the procedure outlined in Study 2. Next, participants were randomly assigned to one of two advertisement stereotype conditions in which they were asked to view an advertisement for a novel snack box product and then complete a questionnaire. Our stimuli were similar in design to the "overweight + healthy" condition in Study 2, although we changed the model's gender and the product to increase generalizability. The advertisement featured an overweight male model promoting a fictitious new product, Healthbox, which contained healthy snacks such as olives, dried fruit, and nuts (see Appendix C). In the control condition the tagline in the advertisement focused solely on the healthiness of the product and read, "Healthbox provides wholesome snack options for a healthy lifestyle." The ideal-framed condition featured a tagline designed to increase fit between the overweight model and the Healthbox product by emphasizing how the product helps the featured model attain his ideal self. The tagline read, "Healthbox gives me healthy snack options that help me become the slimmer, healthier man I want to be." A pretest confirmed that our manipulation worked as intended (see Appendix D).

Participants then completed the measures of product–model fit, attitude toward the advertisement, and purchase intentions (see Appendix C for all measures). Finally, participants completed explicit measures

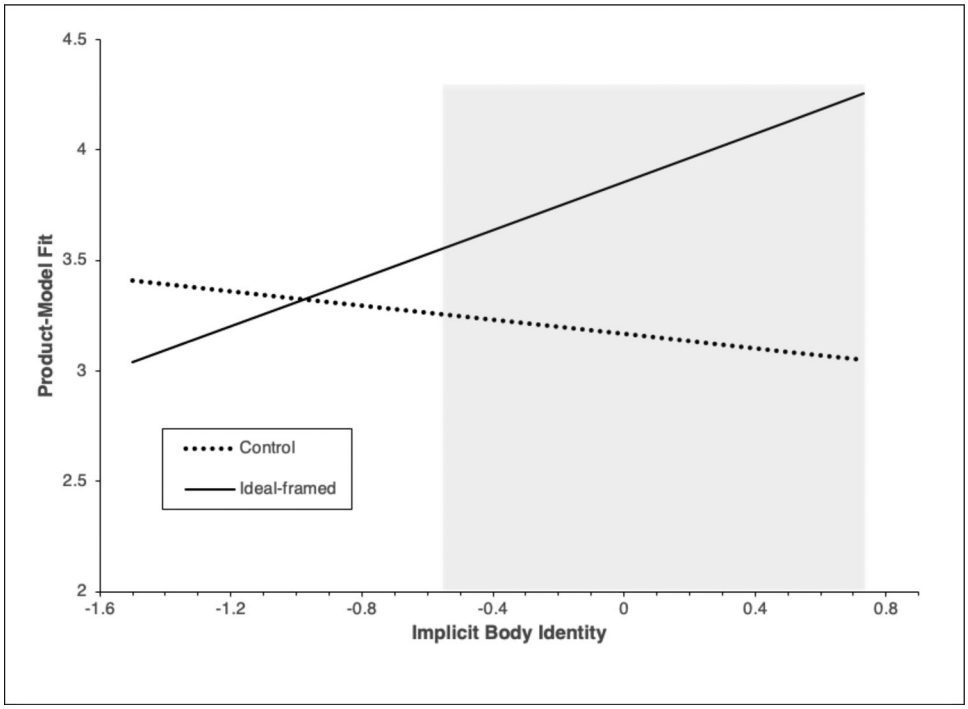

Figure 4. The effect of ideal framing on product–model fit perceptions as a function of consumers' implicit body identity (Study 3).

of body identity followed by general demographics including height and weight to assess BMI.

Results

A one-sample t test revealed that, across conditions, participants viewed the model's body type as significantly above the midpoint (i.e., 5), with larger numbers indicating a larger body type ($M = 7.05$, t (204) $= 45.18$, $p < .001$). Next, we regressed perceived fit on implicit body identity, the dummy-coded message variable (0 = control, 1 = ideal framed), the two-way interaction term, and gender as a covariate. Results indicated a significant two-way interaction, $\beta = .71$, t (200) $= 1.98$, $p < .05$. To probe the interaction, we used floodlight analyses to test the effect of message condition across body identity scores (see Figure 4). As expected, ideal-framed messaging effectively increased product–model fit perceptions for participants at implicit body identity scores above $-.54$, $\beta_{JN} = -.54$, t (200) $= 1.97$, $p = .05$. Thus, viewing an ad featuring ideal-framed messaging increased product–model fit for those with larger self-body associations, whereas no such effect was found for those with smaller self-body associations. Further emphasizing the efficacy of using implicit measures to capture body image at the associative level, while implicit body identity was significantly correlated with both BMI ($r = .23$, $p < .001$) and explicit body-identity ($r = .19$, $p < .01$), the target interaction was not significant using explicit measures of body identity or BMI as a proxy for body identity (all ps $> .30$).

Next, to assess whether these changes in product–model fit led to changes in downstream evaluations and intentions, we conducted conditional process analyses to examine whether the effect of message framing on attitude toward the ad and purchase intentions through perceived fit is conditional upon implicit body identity. We used the PROCESS macro (Model 8; Hayes 2017) using a bootstrap procedure (5,000 draws) to construct bias-corrected CIs. Results from this analysis provided support for the hypothesized model: The indirect effect of the highest-order interaction (message frame × implicit body identity) through product–model fit was significant for each of our dependent variables, as the CIs around the indices of moderated mediation did not contain zero, $\beta_{Aad} = .47$, 95% CI = [.02, .92]; $\beta_{PI} = .40$, 95% CI = [.02, .81].

We then broke down this significant finding by examining the indirect effect of message frame on each dependent variable through product–model fit conditional upon implicit body identity. As hypothesized, for overweight identifiers (+1 *SD*), results indicated a significant indirect effect, $\beta_{Aad} = .39$, 95% CI = [.11, .67]. That is, for overweight identifiers the ideal-framed tagline led to higher perceptions of perceived fit than did the control tagline, which in turn

led to more positive attitudes toward the advertisement. We found the same pattern of effects for participants' purchase intentions, $\beta_{PI} = .32$, 95% CI = [.09, .59]. In line with our expectation that the change in perceived fit results from the perceived self-relevance of the model's behavior, results indicated no such indirect effects across either dependent variable (all confidence intervals included zero) for those with smaller self-body size associations (–1 *SD*).

General Discussion

In this research, we examine the effect of prominent HWSs on advertising response. Across three studies, we demonstrate that although such stereotypes can lead to healthy consumption behaviors, they can also render the overweight population more prone to advertisements for unhealthy products. Specifically, we find that consumers viewing an advertisement featuring a thin model perceive higher product–model fit when the model is paired with healthy (versus unhealthy) products, an effect reflecting the predominant Western thin ideal. In contrast, consumers viewing an advertisement featuring an overweight model perceive heightened fit when the advertisement promotes an unhealthy (versus healthy) product, but only if the consumer identifies as overweight. Further, we find that perceived fit affects evaluations of advertisements when the stereotype is self-relevant (i.e., the spokesperson's body type is consistent with the consumer's own body identity). Finally, we demonstrate that framing the benefits of the product as helping to achieve an ideal self alters perceptions of product–model fit for overweight individuals such that an overweight model in the advertisement matches with a healthy outcome, leading to more positive ad evaluations and purchase intentions.

Although extant literature has shown that advertisements featuring overweight models are generally well received by consumers (e.g., Peck and Loken 2004), we demonstrate that the HWSs often featured in these advertisements can subsequently lead overweight consumers toward unhealthy consumption choices. As our results show, overweight-identifying consumers are highly susceptible to HWS cues. Advertisements featuring plus-sized models are shown to be viewed more favorably when paired with self-stereotype-relevant unhealthy (versus healthy) products. In contrast, when healthy products are paired with a thin model, overweight identifiers experience heightened fit and a more favorable inclination toward the healthy ad, suggesting that our finding for plus-sized models is not simply a function of overweight identifiers having an overall preference for unhealthy foods. Rather, it is a function of the extent that stereotype activation affects consumer judgments as evidenced by heightened levels of fit perceived between the model and product.

The current research also reconciles conflicting streams of research by emphasizing the importance of examining consumers' perceptions of weight-based stereotypes through the lens of their own body identities. Past research has shown that conspicuous presentation of a weight stereotype (e.g., portraying an overweight individual eating unhealthy food) can mitigate the detrimental effect that exposure to an overweight person can have on stereotype-conducive behavior (Campbell and Mohr 2011). Our finding suggests that this behavioral priming effect holds, but only when the stereotype is other-relevant (i.e., thin identifiers and an overweight HWS). Further, we show that the activation of self-relevant stereotypes engages a category accessibility-driven process in which the salience of stereotyped schema affects judgments of the likelihood of the model engaging in the stereotyped behavior (i.e., product–model fit) and subsequently affecting ad evaluations and behavioral intentions. It is therefore imperative to account for how consumers view their own bodies, as this forms the basis for whether presence of the stereotype will affect their judgments and subsequent behavior.

We extend this contribution further by demonstrating the predictive validity of an implicit measure of body identity and its ability to capture the association between body type and the consumer self-concept. In Studies 2 and 3, the differential impact of HWSs on individuals with varying body identities was observed only when using implicit measures of body image. Neither BMI (an objective measure) nor self-reported body identity (an individually subjective measure) predicted stereotype perceptions, ad evaluations, or purchase intentions for overweight individuals. As the extant literature has relied on BMI or self-report measures to assess a consumer's body identity, any observed inconsistencies may be attributable to the limitations of those measures. Moreover, given that our research shows that consumers' perceptions of HWSs are colored by the way consumers perceive their own bodies, it is important that measures accurately capture this subjective perception. Implicit measures were designed for this type of assessment, as they are generally unaffected by introspection and self-presentation biases. However, as our research provides the first empirical evidence to support the predictive

validity of an implicit measure of body identity, additional research is needed to further establish its reliability and validity.

Societal and Managerial Implications

These results contribute to our understanding of how cultural stereotypes influence perceptions of advertisements. Although our findings shed light on a troubling consequence of the use of HWSs, we provide clear insight into how to break their effects using the characteristics of the advertisement. Our findings indicate that advertisements featuring plus-sized models with a healthy product ineffectively target overweight-identifying consumers, as this association runs contrary to strongly held stereotype knowledge as indicated by low perceptions of product–model fit. However, this negative outcome can be mitigated by simple changes to ad messaging. Linking the model's behavior (e.g., eating a healthy product) to the ideal self of overweight identifiers (e.g., becoming slimmer and healthier) actively ties it to the predominant "thin equals healthy" stereotype to directly improve perceptions of fit, resulting in more favorable evaluations and purchase intentions. This finding is critical for marketers, as it addresses the paradox of including overweight individuals in advertisements to target the appropriate segment for a particular product, while avoiding the cultural stereotypes that may reinforce a negative stereotype and lead overweight consumers toward unhealthy consumption decisions.

Addressing the obesity epidemic around the world is a considerably difficult task. Although it is a complex problem, marketers can do their part to reduce the negative influence that marketing appeals have on overweight individuals. Our research is a step in that direction. By increasing the prevalence of advertisements that target overweight individuals without guiding them toward the goals that move them to a healthier (i.e., ideal) self, marketers do this segment a disservice.

Limitations and Directions for Future Research

A number of limitations should be acknowledged. First, our research lacks true behavioral consequences such as choice or purchases of actual products. Although we assessed purchase intentions in Study 3, it would be fruitful to provide more direct evidence that our effects hold in a setting where we could record actual payment or observe real food consumption. Second, our focus on HWSs hindered our ability to fully reconcile our findings with Campbell and Mohr (2011). Although we draw on Campbell and Mohr's findings to suggest that the activation of an other-relevant stereotype (i.e., a thin identifier exposed to an overweight model) elicits a behavioral priming process, any potential effects are mitigated by the fact that HWSs clearly display the link between the group member (i.e., the model) and the stereotyped behavior (i.e., consuming unhealthy product). Therefore, while we demonstrate that for thin identifiers an other-relevant overweight HWS has no effect on behavioral intentions, our focus on HWSs—where the stereotype–behavior link is clearly displayed—prevents us from designing a study in which we replicate Campbell and Mohr's primary finding that exposure to an other-relevant overweight person primes indulgent behavior.

Third, our focus on implicit measures to capture body identity necessitated the use of laboratory experiments. This lab setting may have encouraged a higher level of processing relative to a natural advertisement environment. Although this setting is common in priming-focused advertising research, it may be interesting to consider how the effects would be moderated by different levels of cognitive engagement. Finally, we show that the activation of self-relevant HWSs affects consumers' judgments of the likelihood of the target (i.e., the model) engaging in the stereotyped behavior (i.e., product–model fit) when a self-relevant model is paired with a stereotype-congruent product, and no differences in fit between products when the stereotype is not self-relevant (i.e., thin identifiers and an overweight HWS). However, an argument could be made that thin identifiers were reluctant to judge overweight persons based on their consumption habits because they are motivated to avoid prejudice (Devine 1989). Although research suggests that thin and overweight people routinely exhibit weight bias in a research setting (e.g., Gumble and Carels 2012, Hinman et al. 2015), future research in this area should rule out this alternative explanation by ensuring that social desirability concerns are managed and by providing additional evidence of the product–model fit mechanism, such as through process by moderation.

There are two directions we believe future research should pursue. First, it would be useful to take a much broader approach to HWSs as they need to be interpreted and understood through the lens of culture. Consumer identity is composed of not just individual self-associations with attributes like body but also a number of social categories. Given that these

social categories may themselves be associated with different healthy behaviors, embracing a particular body type may help signal one's membership in the social group. For example, avid cyclists may feel less connected to their fellow cyclists if their bodies do not conform to the stereotypical lithe body shape common among this group. Over time, such identity-group pressure could cause nonconforming individuals to more strongly identify as overweight, as it is more salient to them, or could cause them to more strongly self-identify as not overweight, as that is a prototypical representation of their preferred in-group. Understanding the potential interaction of these larger group memberships and advertising that is directed to those groups could be quite fruitful. Similarly, race and cultural norms may also elicit differential response, particularly if being overweight is common within a particular subpopulation. Research on the thin ideal predominantly investigates Western cultures, and there is evidence that the stigmatization of obesity is greater in non-Hispanic Whites than other races (e.g., Hispanic, Black; Hebl, King, and Perkins 2009). Future research could investigate body identity differences across ethnic backgrounds, with particular attention paid to implicit body identity versus self-reported body image in addition to the race of the spokesperson.

Past research also suggests that women tend to view themselves as more overweight than they actually are, whereas men tend to view themselves as more normal weight than they actually are (Chang and Christakis 2003). While we statistically and methodologically rule out any potential effects of gender in our research, additional research could further explore the interplay of gender, body image, and HWSs. It would be particularly interesting to cross the gender identity of the observer and model to assess whether perceived dissimilarity on dimensions unrelated to weight might also undercut some of our observed effects.

Second, future research should investigate how media type influences response. In the current research, we demonstrate our effect using traditional persuasive advertisements in which a spokesmodel is paired alongside the product and overweight brand imagery. Implicit in this domain is an assumption that the brand has very intentionally selected the model given the product in question. Although that is generally the case in traditional advertising or in native ads featured on Facebook or Instagram, that is often not the case in influencer marketing. Influencer marketing instead generally involves broad partnerships where a given influencer promotes an entire suite of products and services offered by a brand and integrates those products systematically into his or her lifestyle. As a result, influencers begin to operate much more like an overall endorser of the brand family than like a model paired with a single product within a single promotion. For brands with a unified product portfolio that is consistently healthy (or consistently unhealthy), this distinction should have no effect. However, if the portfolio includes a sampling of both types of products, the activated stereotypes may shift dramatically. Future research should investigate whether an HWS does indeed differ across promotional format. For example, consumer closeness to a social media influencer may alter perceptions of the self-relevance of an HWS and thus its effect on stereotype-conducive behavior.

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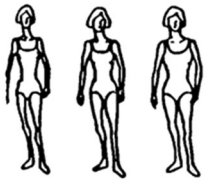
Appendix A. Implicit Association Test (IAT) Stimuli

SELF

SELF	OTHER
me	*them*
mine	*they*
my	*those*
self	*other*

BODY TYPE (FEMALE)

THIN	OVERWEIGHT
	

VALENCE

GOOD	BAD
Marvelous	*Tragic*
Superb	*Horrible*
Pleasure	*Agony*
Joyful	*Painful*
Glorious	*Terrible*
Lovely	*Awful*
Wonderful	*Nasty*

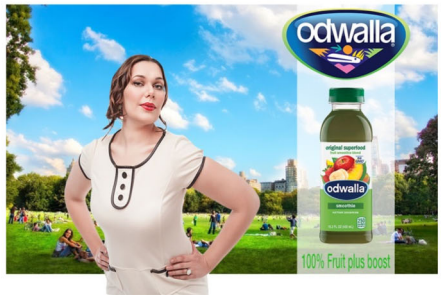
Appendix B. Study 2 Stimuli and Measures

Stimuli

Instructions: On the following page you will be shown a food advertisement and asked to respond to a short series of questions pertaining to it. Before answering the question please ensure that you take sufficient time to examine the advertisement.

Stereotype-Congruent Conditions

Stereotype-Incongruent Conditions



Measures.

Product–Model Fit

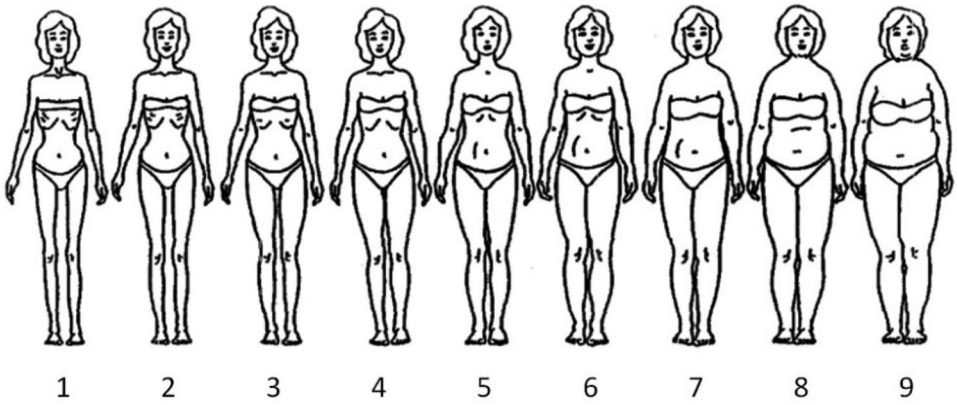
1. How consistent is the image of the model with the [product] featured in the advertisement?
   [1 = *Very inconsistent*, 7 = *Very consistent*]
2. How would you describe the fit between the model and the [product] featured in the advertisement?
   [1 = *Very bad*, 7 = *Very good*]
3. How relevant is the model to the [product] featured in the advertisement?
   [1 = *Very irrelevant*, 7 = *Very relevant*]
4. How logical is the relationship between the model and the [product] featured in the advertisement?
   [1 = *Very illogical*, 7 = *Very logical*]

Attitude

In general, what is your attitude toward this advertisement?
[1 = *Negative*, 7 = *Positive*]

Manipulation Checks

In general, how healthy is the product shown in the advertisement?
[1 = *Very unhealthy*, 7 = *Very healthy*]



Which of the pictures above best reflects the body type of the model in the advertisement?
[1 – 9]

Covariate

How attractive is the model in the advertisement?
[1 = *Very unattractive*, 7 = *Very attractive*]

Appendix C. Study 3 Stimuli and Measures

Stimuli

On the following page you will be shown a food advertisement and asked to respond to a short series of questions pertaining to it. Before answering the question please ensure that you take sufficient time to examine the advertisement.

Ideal Frame Condition

Control Frame Condition

Measures

Product–Model Fit

1. How would you describe the fit between the model and the [product] featured in the advertisement?
   [1 = *Very bad*, 7 = *Very good*]

Attitude

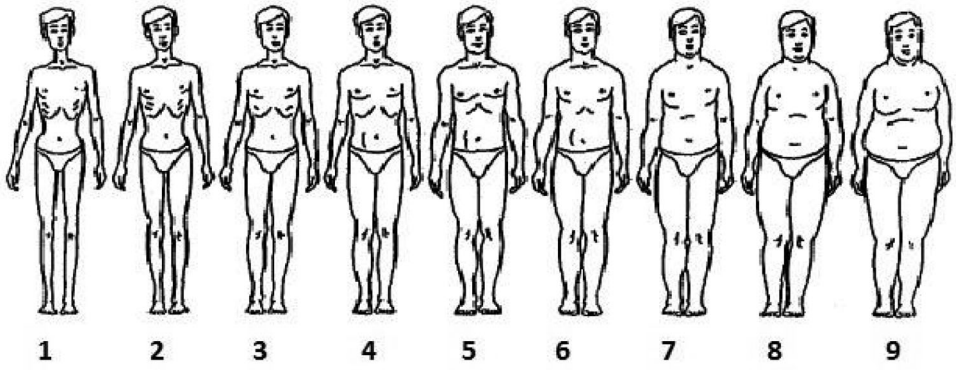
In general, what is your attitude toward this advertisement?
[1 = *Negative*, 7 = *Positive*]

Purchase Intentions

How likely would you be to purchase the item in the advertisement?
[1 = *Extremely unlikely*, 7 = *Extremely likely*]

Manipulation Checks

In general, how healthy is the product shown in the advertisement?
[1 = *Very unhealthy*, 7 = *Very healthy*]



Which of the pictures above best reflects the body type of the model in the advertisement?
[1 – 9]

Appendix D. Study 3 Pretest

Measures

1. To what extent does this advertisement focus on who this person wants to be in the future?
2. To what extent does this advertisement focus on who this person is at the current point in time?
   [1 = *Not at all*, 7 = *Very much*]

Table A1. Pretest results.

	Ideal	Control		
	M		*F*	*p*
Ideal focus	5.39	4.29	6.017	< .05
Actual focus	4.61	4.75	0.098	.76