

“Seeing is Eating: How and When Activation of a Negative Stereotype Increases
Stereotype-Conducive Behavior”

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Forthcoming, *Journal of Consumer Research*, October 2011

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This research investigates the effect of activation of a negative stereotype on behaviors that are perceived to increase the chance of becoming a member of the stereotyped group. Activation of a negative stereotype (the overweight stereotype) is shown to lead to stereotype-consistent goal commitment (low health goal commitment), which partially explains increases in stereotype-conducive behavior (eating indulgent foods). Two theoretically relevant moderators are proposed and supported. Increased accessibility of the countervailing health goal and increased accessibility of the link between the behavior and membership in the stereotyped group both limit the effect of stereotype activation on stereotype-conducive behavior. Five experiments support the facilitative effect of stereotype activation on stereotype-conducive behavior, the role of goal commitment, and both moderators.

Consider the following: your friend Lucy, who is about 25 pounds overweight, e-mails you pictures from her recent vacation. After you look at Lucy's pictures, the office secretary comes by with a plate of cookies. Will exposure to someone overweight influence how many cookies you eat? Nineteen adult consumers indicated how they thought seeing someone overweight would influence their consumption of indulgent food (e.g., cookies or candy). About 42% said that they would take the same amount as they would without exposure, 26.3% said that they would take some, but less than if they had not seen the overweight person, and 31.6% said that they would not take any after seeing someone overweight. The fact that many consumers have a goal to be healthy, and do not want to be overweight, may explain why none of the consumers selected the answer, "I would take more than if I hadn't seen the overweight person." However, recent research suggests that exposure to an overweight person may in fact lead to an increase in food consumption. Christakis and Fowler (2007) indicate that if a close other in a consumer's social network gains weight, the consumer is likely to gain weight. McFerran et al. (2010a) show that consumers anchor on the food choices of others, taking more snack food when another does, even when the other is obese. We contribute to this by 1) showing that beyond anchoring on others' eating behavior, merely being exposed to someone overweight can result in increased food consumption and 2) proposing the process and conditions that lead to this increase.

This research presents and tests a theoretical framework to understand how exposure to someone a consumer does not wish to emulate (e.g., someone overweight) can lead to an increase in behavior that is perceived as causal in becoming more like the person (e.g., eating). We draw from the stereotype priming literature to explain how exposure to a negative social group member can increase causally-related behavior despite an underlying goal that could

override such behavior. Recent research demonstrates that stereotypes include goals (Van Boven, Campbell, and Gilovich 2010) and can influence goal-directed behavior (Aarts et al. 2004). Building on this, we propose that stereotypes can include commitment to pursue associated goals, including countervailing goals. We argue that the effect of negative stereotype activation on stereotype-conductive behavior (i.e., behavior that is causally linked to group membership) can be explained, in part, by the effect that stereotype activation has on a consumer's current commitment to an associated, countervailing goal.

Five studies show that exposure to a negative stereotype (i.e., seeing someone overweight) can increase stereotype-conductive behavior (i.e., eating indulgent food). Experiment 1 demonstrates increased stereotype-conductive behavior following stereotype activation. Experiment 2 replicates this and supports the proposed mediating role of stereotype-consistent commitment to a countervailing goal (i.e., the goal to be healthy). Experiment 3 provides additional support for the proposed process by demonstrating a moderating effect of accessibility of the countervailing goal. Experiments 4 and 5 demonstrate that increased accessibility of the link between group membership and the behavior attenuates the effect of the prime. Experiment 5 compares two explanations, providing additional evidence in support of the proposed process.

THEORETICAL BACKGROUND

Stereotypes are bundles of characteristics including traits, attitudes, behavioral tendencies, and goals that are associated with the members of a social category (e.g., Aarts et al. 2005; Hilton and Von Hippel 1996; Stangor and Lange 1994). Activation of a social stereotype refers to increased accessibility of associations with the social group. Research demonstrates that

both conscious and nonconscious exposure to a stereotyped group member (e.g., by a photograph) can result in the automatic activation of stereotypic characteristics (Blair and Banaji 1996; Kawakami, Dion, and Dovidio 1998). Research consistently shows that activation of a stereotype can influence behavior, typically resulting in an increase in stereotype-consistent behavior, even when the stereotype and related behavior are somewhat negative (for reviews, see Dijksterhuis and Bargh 2001; Wheeler and Petty 2001). For example, college students' scores on general knowledge questions increased after exposure to a professor but decreased after exposure to a supermodel prime (Dijksterhuis and van Knippenberg 1998).

It is noteworthy, however, that existing stereotype prime research focuses on behaviors that are *associated* with an activated social stereotype, but not ones that are *stereotype-conducive*, that is, perceived to be causally linked to group membership. This lack of examination of stereotype-conducive behaviors may be because most groups studied are ones in which membership is deterministic, such that people can not typically engage in behaviors that will make them a member of the group (e.g., a white cannot become Asian by engaging in certain behaviors). However, even in the case of research on non-deterministic groups, the behaviors studied are not causal to group membership (e.g., a low number of correct general knowledge answers does not increase the probability of becoming a supermodel).

This gap in the literature raises the question of the extent to which stereotype-conducive behaviors associated with a negatively stereotyped group will show the same stereotype prime effects as seen for stereotypical, but non-conducive behaviors. The impact of stereotype activation on stereotype-conducive behavior is particularly intriguing in the domain of negative stereotypes because of the potential for goal systems involvement that could limit prime effects (Kruglanski et al. 2002). In the case of negative stereotypes, people have countervailing goals

that could override stereotype-conducive behavior. Consumers sometimes avoid actions, choices, and products that are linked to out-groups because of goals to avoid being associated with a negatively viewed group (Berger and Heath 2008; White and Dahl 2006). Research also demonstrates that goals can limit response to tempting behaviors that run counter to goal achievement (e.g., Fishbach, Friedman, and Kruglanski 2003). Thus, it seems possible that consumers' goals could limit prime effects on behaviors perceived as conducive to membership in a dissociative social group. For example, the countervailing goal to be healthy weight could override the stereotype-conducive behavior of eating. This is the intuition demonstrated by the majority of participants in the lay-theory study described above, who indicated that they would eat less after seeing someone overweight.

However, for a countervailing goal to override activated, goal-inconsistent behavior the goal must be cognitively accessible and the person must feel committed to pursue the goal (Shah and Kruglanski 2002; Shah, Kruglanski, and Friedman 2003). Fishbach et al. (2003) show that exposure to a temptation that could derail goal pursuit leads to increased accessibility of the goal; the accessible goal appears to enable resistance of the temptation, whereas giving into temptation is more likely when the overriding goal is not accessible. Goal commitment also has an important influence on goal pursuit; high goal commitment increases actions that favor the goal, whereas low goal commitment does not (Fishbach and Dhar 2005). Given that stereotype activation is highly likely to result in increased accessibility of stereotype-conducive behavior and the goal to pursue the behavior, such behavior will increase, unless a countervailing goal is likewise accessible and the consumer is committed to that goal. We propose that stereotype activation can result in decreased commitment to the countervailing goal.

Stereotype Exposure and Stereotype-Consistent Goal Commitment

We argue that stereotype activation increases accessibility of goals and goal commitment associated with the stereotyped group. Recent research demonstrates that stereotypes include the goals that are stereotypical for the group (Van Boven et al. 2010) and that stereotype activation can lead people to automatically take on these goals themselves (Aarts et al. 2005). For example, people infer goals from others' actions and can exhibit "goal contagion" such that they pursue the inferred goals themselves (Aarts, Gollwitzer, and Hassin 2004). Building on this, we suggest that it is likely that exposure to a stereotyped person will activate knowledge that includes stereotypical goals and, additionally, motivation or commitment to these goals. Thus, consumers will be likely to adopt the goals and goal commitment considered to be stereotypical.

Stereotype knowledge can include high and/or low commitment to particular goals. For example, the stockbroker stereotype includes high, and the journalist stereotype low, commitment to the goal of making money (Aarts et al. 2005), while the materialistic stereotype includes high commitment to pursue external rewards as well as low commitment to pursue intrinsic rewards (Van Boven et al. 2010). For a negative, non-deterministic stereotype, it is likely that the stereotype includes high commitment to pursue stereotype-conducive behaviors and low commitment to a countervailing goal that would limit those behaviors. That is, by virtue of a person's membership in a negatively stereotyped group, others are likely to infer that the person has low commitment to a goal that would prevent group membership. Because having high commitment to a goal to be healthy could limit actions that lead to overweight (Fishbach and Dhar 2005), consumers infer that overweight people have low commitment to the health goal.

We propose that stereotype activation results in increased accessibility of inter-related knowledge that includes stereotype-consistent traits, behaviors, goals, and commitment to goals. Goal-inconsistent behavior is impacted by the interplay among the accessibility of the behavior and the goal to pursue the behavior, the countervailing goal, and current commitment to the goal. Because stereotype activation increases accessibility of the goal to pursue stereotype-conductive behavior (Aarts et al. 2005) and low commitment to the countervailing goal, we propose that stereotype priming will increase stereotype-conductive behavior, even when the stereotype is negative. That is, we propose that exposure to a negative stereotype increases stereotype-conductive behavior in part by affecting commitment to the goals linked to the stereotype and behavior. Exposure to the stereotype attenuates the consumer's own commitment to pursue the countervailing goal, resulting in an increase in the primed, but goal-inconsistent, behavior. An important contribution of our research is that we present and test a theoretical framework that provides insight into the question of how exposure to a negative stereotype can lead to increases in behavior consistent with, and conducive to, the stereotype, while inconsistent with a continuing goal. This framework also suggests two factors that can limit the effect of stereotype exposure on stereotype-conductive behavior.

Limits to the Impact of Negative Stereotype Activation on Stereotype-Conductive Behavior

Behavioral assimilation to an active stereotype can be beneficial for learning, group cohesion, and even safety (Chartrand and Bargh 1999). However, Dijksterhuis and van Knippenberg (2000) raise the issue that stereotype prime effects can also be dysfunctional, and thus some factors may limit such effects. The above theoretical development suggests two

possible limits to the proposed, counterintuitive increase in stereotype-conductive behavior linked to a negatively stereotyped group.

First, this research proposes that the attenuating effect of the stereotype on commitment to a countervailing goal is one mediator of the effect of the stereotype on stereotype-conductive behavior. Based on this, we propose that increasing the *accessibility* of the consumer's underlying, countervailing goal will moderate the effect of stereotype activation on stereotype-conductive behavior. Research demonstrates that increased accessibility of an alternative goal can interfere with behavior directed at a focal goal (Shah and Kruglanski 2002) and that activation of a countervailing goal moderates the effect of priming temptations (Fishbach et al. 2003). Macrae and Johnston (1998; experiment 2) found that priming the concept of helpfulness increased the extent to which participants helped an experimenter, except when they were running late for another experiment. An interpretation of these results is that the heightened accessibility of the underlying goal (being timely) limited the effect of the primed concept or goal (to be helpful) on a behavior counter to the goal (taking time to help the experimenter). Thus, we propose that increasing the accessibility of a countervailing goal can moderate the impact of social-stereotype activation on a stereotype-conductive behavior inconsistent with the countervailing goal.

Second, one reason that the proposed increase in stereotype-conductive behavior following negative stereotype exposure is counterintuitive is that people are motivated to avoid behaviors that bring them closer to dissociative groups (Berger and Heath 2008; White and Dahl 2006). This suggests that increasing the accessibility of the perceived causal link between the stereotype-conductive behavior and group membership can limit the effect of stereotype exposure on this behavior. We propose that when the connection between the behavior and group membership is highly accessible to a consumer, negative stereotype activation will not lead to

the same increase in stereotype-conductive behavior as when the link is less accessible. In support of this thinking, Johnston (2002) found that people mimicked a stigmatized other's behavior except when the behavior was causally linked to the stigma. We propose that this may be because seeing the person engage in the behavior increased the accessibility of the causal link. When the behavior-stereotype link is accessible it can provide a stronger guide for behavior than the motivations and behaviors associated with the stereotype prime (Dijksterhuis and van Knippenberg 2000). Thus, we hypothesize that heightened accessibility of the behavior-stereotype link will limit the effect of a negative stereotype on stereotype-conductive behavior.

RESEARCH OVERVIEW

Five experiments explore the proposed framework using overweight as the social stereotype and eating indulgent (i.e., tasty, calorie-dense) food as the stereotype-conductive behavior. There is a commonly held negative stereotype of the overweight that includes eating indulgent foods and low commitment to health goals; this is held by healthy weight, overweight, and obese people (Crandall 1994; Roehling 1999; Schwartz et al. 2006). Research shows that it is commonly believed that (over)eating indulgent food is a cause of being overweight (e.g., Bacon, Scheltema, and Robinson 2001). Importantly, recent studies show that over 70% of Americans are concerned with their weight and over half of both men and women are actively pursuing the goal to lose weight (e.g., International Food Information Council 2009; Spake 2004). The presented research contributes to recent research showing that others' weight can affect consumers' self-perceptions, food choices, and weight (e.g., Christakis and Fowler 2007; McFerran et al. 2010a and b; Smeesters, Mussweiler, and Mandel 2010) by demonstrating that

seeing someone overweight can increase food consumption and showing how and when stereotype activation plays a role in the impact of others' body weight on food consumption.

EXPERIMENT 1: SEEING SOMEONE OVERWEIGHT AND FOOD CHOICE

Experiment 1 examines whether exposure to a picture of someone overweight leads participants to take more food, even though many consumers wish to avoid membership in the stereotyped group (i.e., do not wish to be overweight) and believe that the behavior (eating indulgent foods) is conducive to group membership. A pretest confirmed that a picture of someone overweight increases the accessibility of overweight stereotypic associations. Participants ($n = 55$) randomly assigned to either see an overweight person or not (between subjects) completed a lexical-decision task with stereotypic (e.g., indulgent, inactive, unhealthy) and non-stereotypic (e.g., rectangle, briefcase, key) words (within subject). After eliminating three suspicious participants and response latencies over three standard deviations above the mean, a 2 (overweight prime: yes, no) X 2 (word type: non-stereotypic, overweight stereotypic) mixed-model ANOVA with word type treated as a repeated measure revealed the expected significant interaction ($F(1, 49) = 5.61, p < .02$). Participants who saw a picture of an overweight person responded significantly faster to overweight stereotypic words ($M = 589$ ms) than did control participants ($M = 713$ ms; $t(49) = 2.46, p < .02$); there was no significant effect of prime on response times to non-stereotypic words ($t(49) = 1.63, p > .12$).

Method

Participants and Design. A researcher recruited 59 people walking through a lobby at the University of Colorado, Boulder (students, faculty, staff, and visitors) to participate in a short survey. Ages ranged from 18 to 69 ($M = 25$) and 64% were male; since there were neither main nor interaction effects of gender, gender is not discussed further. A pretest ($n = 37$) was conducted to identify pictures of women perceived to be overweight ($M = 12.6$ on an 18-point weight scale) and healthy weight ($M = 7$; $t = 7.4$, $p < .0001$; see Figure 1). Participants were randomly assigned to see one picture either of an overweight or a healthy weight woman, or a lamp (the lamp provided a no person control).

Insert figure 1 about here

Procedure. The surveys had a front page with the cover story and a few questions (age, gender, and affiliation), allowing the researcher to remain blind to condition. After reading that they were helping to calibrate pictures for later studies, participants turned the page, saw one of the three pictures, and were asked to “list the first three things that come to your mind,” and rate the picture on typicality, quality, and clarity. They then closed the booklet, returned it to the researcher, and helped themselves from a bowl of candy as a thank you. The number of candies that each participant took was recorded after they left and was the dependent variable.

Results

The number of candies taken was analyzed as a function of the three-level prime, with age and affiliation (staff, faculty, undergraduates, and visitors) as covariates. Results revealed

only a significant effect of prime ($F(2, 53) = 3.88, p < .03$). In support of our prediction, planned contrasts revealed that those who saw the image of an overweight person took significantly more candies ($M = 2.2$) than those in the healthy weight ($M = 1.4, F(1, 53) = 7.03, p < .02$) or in the neutral control condition ($M = 1.5, F(1, 53) = 4.77, p < .04$). There was no difference between those in the healthy weight and neutral conditions ($F(1, 53) = .25, NS$).

Discussion

These results reveal that activating a negative stereotype can increase stereotype-conducive behavior. When exposed to someone overweight, people took more candies compared to those who were exposed to either a neutral or a healthy weight prime. Choice is an important variable, but we also want to examine the impact of the stereotype on food consumption. Further, the natural environment in experiment 1 precluded the use of process measures, understanding the process that drives the prime effect is an important next step.

EXPERIMENT 2: THE MEDIATING ROLE OF HEALTH GOAL COMMITMENT

The primary purpose of experiment 2 was to examine the process underlying the effect of negative-stereotype activation on stereotype-conducive behavior. We measured health goal commitment to examine the prediction that overweight stereotype activation decreases health goal commitment and this decreased commitment mediates the effect of the overweight prime on eating. We included a delay condition to examine effect persistence and also measured attitude

toward the food to examine the alternative hypothesis that stereotype activation increases attitude toward the food, which leads to increased food choice and consumption.

Method

Three pretests verified that low health goal commitment is part of the overweight stereotype. Participants ($n = 135$) saw pictures of four healthy weight and four overweight people, rated each on a 7-point scale from unhealthy to healthy, and indicated perceived weight on an 18-point scale. Each of the overweight people was perceived to weigh more and be less healthy than each of the healthy weight people (all p 's $< .0001$). In a second pretest, 28 participants saw a picture of an overweight or a healthy weight woman and predicted how the woman would answer four health goal commitment questions (i.e., "I reflect a lot about my health; I'm constantly examining my health; I am very self-conscious about my health; I am NOT very involved with my health" (reverse scored); Gould 1990). Participants thought that the healthy woman had higher health goal commitment ($M = 3.75$) than the overweight woman ($M = 3.14$, $t(26) = 2.0$, $p < .055$). In a third pretest 19 participants indicated the extent to which they perceived groups to be motivated by several goals on a 9-point scale from not at all (1) to very strongly (9) (based on Aarts et al. 2005). The overweight group was perceived to be motivated by the goal to eat tasty food ($M = 7.58$) and to have lower commitment to the goal to be healthy ($M = 3.37$) than a non-overweight group ($M = 4.45$; $t(18) = 6.06$, $p < .0001$).

Participants and Procedure. For partial course credit, 139 students (average age 21, 18 to 38; 71% male) seated in private cubicles participated in several studies. Participants were first

given a study with a cover story on understanding aspects of digital pictures. Participants looked at three pictures on a computer display (counterbalanced for order). Participants were randomly assigned to either the overweight prime, in which they saw one neutral picture (a tree) and two pictures of overweight people, or the neutral prime condition, in which they saw three neutral pictures (the tree, a fishbowl, and a lake). Participants wrote three things about the picture and rated the color, typicality, quality, and clarity on five-point scales.

Participants were then given two additional studies, an unrelated product study and a taste test, counterbalanced for order between sessions. The product study involved providing evaluations of nine products (e.g., Band Aids, a side table, pasta), and took about 5 minutes. When this study was first, it provided a delay between the prime and the taste test. Either an increase or no change in the effect over the delay provides evidence of goal-system involvement, whereas a decline in the effect over the 5 minute delay period suggests only semantic priming (e.g., Bargh et al. 2001; Aarts et al. 2004). Thus, manipulating delay allows exploration of whether the stereotype activation includes stereotypical goal commitment (as proposed) or only primes semantic knowledge associated with the stereotype.

For the taste test study, participants were provided with a bowl of eight small cookies and asked to eat at least one and answer several questions about the cookies. Participants indicated attitude toward the cookies on three, seven-point scales (bad/good, dislike/like, negative/positive; $\alpha = .89$) and, in keeping with the cover story, wrote descriptions of the cookies and indicated appropriate eating occasions. After the taste test, participants completed a final questionnaire that included the four-item measure of health goal commitment used in the pretest ($\alpha = .85$; Gould 1990), demographics, and a funneled suspicion check. The number of cookies each participant ate was recorded after all participants were thanked and left.

Results

Food Consumption. Responses from six participants who indicated a connection between the priming task and the taste test in the suspicion measure were removed (the patterns of results are the same with and without these). Participants in the overweight prime condition ate more cookies ($M = 2.6$) than those in the neutral condition ($M = 1.9$; $F(1,131) = 9.63, p < .01$). Thus, the effect of the stereotype prime seen in experiment 1 on food choice was replicated with actual food consumption. (Neither gender nor body mass index—computed from self-reported height and weight—had any significant effects and are not discussed further).

Process. We next examined possible routes for the influence of the prime on stereotype-conducive behavior. To test the idea that exposure to a member of the social group temporarily influenced participants' own goal commitment, we examined the effect of prime condition on health goal commitment. In the neutral condition participants rated their health goal commitment at about the mid-point of the scale ($M = 3.9$). As predicted, exposure to the overweight stereotype resulted in significantly lower health goal commitment ($M = 3.5$; $F(1, 129) = 8.10, p < .04$; differences in degrees of freedom are due to missing data on scale items). This provides initial support for the idea that consumers take on the goal commitment of the stereotype.

Given these significant effects, we examined whether health commitment mediated the effect of stereotype exposure on food consumption, expecting “complementary mediation,” with both a mediated (through commitment) and a direct effect of stereotype activation on eating (Zhao, Lynch, and Chen 2010). First we conducted a series of regression analyses (Baron and Kenny 1986). In particular, we analyzed the effects of condition and health commitment on the

number of cookies eaten. This analysis revealed a significant effect of the stereotype condition ($B = .575, p < .02$) and health commitment ($B = -.337, p < .007$) on the number of cookies eaten. Importantly, the effect of stereotype condition was significantly reduced from .703 without the inclusion of health goal commitment to .575 with health goal commitment (Sobel = 2.01, $p < .044$). Second, we used bootstrapping (Preacher and Hayes 2004), revealing that the mean indirect effect is positive and significant ($M = .1571$), with a 95% confidence interval excluding zero (.008 to .383). The direct effect is also significant (.575; $p < .014$), supporting the combined role of an impact of the prime on eating and commitment to the health goal. Both significant mediation analyses indicate that the overweight prime influences commitment to the health goal and that low health goal commitment leads to increased consumption of indulgent food.

An alternative explanation for the stereotype effect is that exposure to the overweight prime results in more positive attitudes towards food, which then leads to increased consumption. Thus, we also examined the impact of prime condition on attitude toward the cookies. Prime did not significantly impact attitude toward the cookies ($M_{OW} = 5.28; M_{Control} = 5.37; F < 1$) and so attitude is not examined further.

Lastly, we analyzed the effect of delay to provide some insight into whether the goal system is affected by the stereotype. Interestingly, delay had no effect [$F(1, 132) = 1.43, p > .20$, NS]. The lack of a decline in the impact of the prime on eating over a delay suggests a motivational component to the process (Bargh et al. 2001). While this null effect is not definitive, it is supportive of the proposed idea that commitment to the health goal is part of the process by which activation of the overweight stereotype leads to increased food consumption.

Discussion

The results of experiment 2 support that activation of a negative stereotype leads to an increase in stereotype-conducive behavior in part by affecting consumers' commitment to countervailing goals. Activation of the overweight stereotype leads to lower commitment to the health goal, consistent with the stereotype. As a result, the consumer engages in stereotype-conducive behavior despite his or her countervailing goal to be healthy. This finding helps to answer the question of why consumers may engage in behaviors that are causal to membership in a negatively stereotyped group despite a countervailing goal. Given the effects of negative-stereotype activation on stereotype-conducive behavior, it is important to investigate factors that may limit these potentially "dysfunctional" behaviors (Dijksterhuis and van Knippenberg 2000). Next, we explore whether increasing accessibility of the countervailing goal buffers a consumer against the effects of social stereotype activation.

EXPERIMENT 3: COUNTERVAILING GOAL ACCESSIBILITY

Experiment 3 was designed to examine whether increasing accessibility of a consumer's own countervailing goal offsets the effect of stereotype activation on stereotype-conducive behavior. Only women were recruited for this experiment because, while the first two studies showed no effects of gender, they included more men than women; matching the gender of participants and photos could reduce additional variance (we thank a reviewer for this suggestion). Using women is also consistent with the majority of consumer weight research.

Design and Procedure

Women from an undergraduate subject pool ($n = 106$) were randomly assigned to a 2 (prime: healthy weight vs. overweight) X 2 (goal accessibility: low vs. high) X 2 (order: goal first vs. prime first) between subjects design. Participants seated in individual cubicles participated in three studies, the first two counterbalanced for order to manipulate delay between the prime and the behavior opportunity. Given that self-focus can moderate prime effects (Dijksterhuis and van Knippenberg 2000; Smeesters et al. 2009), we manipulated goal accessibility while maintaining thoughts related to the self. To manipulate goal accessibility, participants wrote for three minutes either about their health goals (health goal accessibility high, related to the self) or the geography of their home states (health goal accessibility low, related to the self; from Wheeler and Berger 2007). Stereotype prime was manipulated in a picture perception study in which participants saw two pictures: a tree and either a healthy weight or an overweight woman. A pretest ($n = 66$) verified weight perceptions of two different people than had been used in either of the two previous studies ($M_{HW} = 6.9$, $M_{OW} = 12.9$, $F(1, 64) = 161.99$, $p < .0001$). Participants evaluated each picture for color, originality, quality and clarity. A taste test was presented next, followed by a suspicion check and background information questionnaire.

Results

Analyses with a full 2 (stereotype prime) X 2 (goal accessibility) X 2 (order) ANOVA showed no significant effects of order, so we collapsed across order for all other analyses. Importantly, the lack of an effect of order shows that the prime effect again persisted over the delay, indicating that exposure to the overweight person activated related goals and goal

commitment. A 2 (stereotype prime) X 2 (goal accessibility) ANOVA of the number of cookies eaten revealed a significant effect of stereotype prime ($F(1, 102) = 4.83, p < .03$), qualified by a significant interaction ($F(1, 102) = 6.47, p < .01$). When health goal accessibility was low, participants ate more cookies after exposure to the overweight ($M = 3.7$) than the healthy weight ($M = 2.1; F(1, 102) = 11.45, p < .001$) person. When, however, health goal accessibility was high, participants ate the same number of cookies regardless of the stereotype prime ($M_{HW} = 2.5; M_{OW} = 2.4; F(1, 102) = .06, NS$) and less than those in the overweight, low health goal accessibility condition ($p < .01$; see Figure 2). (BMI had no effect and is thus not included).

Insert figure 2 about here

Discussion

These results replicate the basic finding of a stereotype prime effect; participants ate more indulgent food after exposure to an overweight than to a healthy weight person when health goal accessibility was not high. Increased accessibility of participants' personal health goals, however, moderated the effect. When health goal accessibility was heightened, participants ate the same, relatively low number of cookies regardless of whether they were exposed to a healthy weight or an overweight person. These results reveal an important boundary for the effect of stereotype activation when the primed behavior is inconsistent with an underlying goal.

The first three studies demonstrate that exposure to someone in a negatively stereotyped group can lead to increased stereotype-conducive behavior. Together, the studies support the proposed theory that exposure to a stereotype can influence stereotype-consistent goal

commitment, resulting in low felt commitment which leads to an increase in stereotype-conducive behavior. The mediating role of measured health goal commitment in experiment 2, the moderating effect of manipulated health goal accessibility in experiment 3, and the lack of a decline in the effect over a delay provide consistent evidence for goal systems involvement.

EXPERIMENT 4: ACCESSIBILITY OF THE BEHAVIOR-STEROTYPE LINK

The primary purpose of experiment 4 is to examine whether increasing the accessibility of the link between the behavior and group membership can limit the stereotype priming effect. One reason that the demonstrated increase in behavior believed to be causally linked to membership in the stereotyped group is non-intuitive is that consumers are likely to want to avoid behaviors related to dissociative groups (Berger and Heath 2008; White and Dahl 2006). The underlying desire to avoid these behaviors suggests that increasing the accessibility of the link between the behavior (eating) and group membership (being overweight) could limit the effect of stereotype activation on stereotype-conducive behavior.

Design and Procedure

Following a similar methodology to experiments 2 and 3, 119 female students randomly assigned to a 2 (stereotype: healthy weight vs. overweight) X 2 (accessibility of behavior-stereotype link: low vs. high) between-subject design first participated in a digital picture study in which they were asked to list the first three colors that they noticed in the picture. Participants evaluated two pictures: a neutral picture of a tree, followed either by a picture of a healthy

weight or an overweight woman. Participants next took part in a cookie taste test, and then completed a filler task, manipulation check, demographics, and suspicion check.

The second photo in the picture study manipulated both stereotype activation and accessibility of the stereotype-conducive nature of the behavior. The weight (healthy weight versus overweight) of the person in the second photo manipulated stereotype activation. Accessibility of the link between the behavior and stereotype membership was manipulated by whether or not the person in the photo was eating. Research shows that the body type of others influences the amount of food that people take. For example, consumers take and eat more when someone else takes a lot, both when the other person is thin and overweight (McFerran et al. 2010a). However, non-dieters do not eat more, and even eat less when served food by an obese as compared to a thin server (McFerran et al. 2010b). One reason could be that being served food by an obese person increases the accessibility of the causal link between eating and becoming overweight; the direct connection between the obese server and food could remind consumers of the link. Research also showed that people did not mimic an obese person eating indulgent food, although the eating behavior of a person with a different stigma was mimicked (Johnston 2002). A pretest ($n = 63$) verified that a picture of an overweight person eating influenced perceptions of the link between controlling eating and being overweight; participants who saw a picture of an overweight woman eating thought that people who are overweight have lower self-control ($M = 1.9$) than did those who saw a picture of the same overweight woman not eating ($M = 2.49$; $F(1, 62) = 5.45, p < .03$). Thus, pictures of the same overweight woman eating or not eating were used to manipulate accessibility of the behavior-stereotype link.

Results

The final questionnaire included a manipulation check that asked participants to write the first thing that came to mind for, “I believe that the primary reason people are overweight is _____.” Answers were coded as eating related (e.g., “eat fatty foods”) or not (e.g., “bad genes”) and were analyzed with a 2 X 2 logistic regression that showed only a significant interaction ($\chi^2(1) = 3.6, p < .05$). Supporting the successful manipulation of accessibility of the stereotype-conducive nature of the behavior, follow-up analysis revealed a higher proportion of eating-related reasons after seeing a picture of an overweight woman eating (75%) than not eating (48%; $\chi^2(1) = 4.6, p < .03$). [There was no difference in eating-related reasons when the healthy weight target was eating (61%) or not eating (66%; $\chi^2(1) < 1, NS$)].

A 2 (stereotype) X 2 (accessibility of behavior-stereotype link) ANOVA of number of cookies eaten revealed a significant effect of the stereotype condition ($F(1, 115) = 4.89, p < .03$), qualified by a significant interaction ($F(1, 115) = 4.07, p < .05$). Participants in the overweight, not-eating condition ate significantly more cookies ($M = 2.6$) than those in the overweight, eating condition ($M = 1.9, F(1, 115) = 5.04, p < .03$), the healthy weight, not eating condition ($M = 1.8, F(1, 115) = 8.17, p < .005$), and the healthy weight, eating condition ($M = 1.9, F(1, 115) = 5.5, p < .02$; see Figure 3). (BMI did not have any effects).

 Insert figure 3 about here

Discussion

These results provide a fourth replication, with different photos, of the basic facilitative effect of overweight stereotype activation on the stereotype-conducive behavior of eating. In addition, these results show that increased accessibility of the link between the behavior and stereotype group membership serves as a boundary condition for the effect. The interactive effect of the weight of the person and whether or not the person was eating suggests that merely making the idea of eating accessible does not limit the prime-to-behavior effect. That is, rather than a main effect of eating versus not, the results demonstrate that participants' eating is primed by seeing someone overweight, but that the stereotype effect is limited by seeing someone overweight eating. This supports that making the causal link between eating and being overweight accessible limits the effect of the prime on stereotype-conducive behavior.

Typical of stereotype prime research, the studies reported thus far follow a procedure in which participants are somewhat distracted from the stereotype. In some published studies, the stereotype is primed subliminally, in others the methodology obscures the prime (e.g., the scrambled sentence task), and in others, like ours, instructions divert attention from the stereotype to another aspect of the task (see Wheeler and Petty 2001). This gives rise to an alternative explanation for the moderated effects seen in experiment 4. It is possible that a lack of attention on the stereotype is necessary for behavioral prime effects to arise. That is, it may be necessary for attention to be distracted from the person's weight; if a consumer considers stereotype membership (e.g., "that person is overweight"), the stereotype effect on conducive behavior may be attenuated. Thus, in experiment 4, it is possible that seeing someone overweight eating brought attention to the person's weight and that it was this attention, rather than the accessibility of the stereotype-conducive nature of the behavior, that eliminated the stereotype

prime effect (we thank a reviewer for noting this). Thus, the primary purpose of experiment 5 is to tease apart these two explanations for the attenuating effect of eating seen in experiment 4.

There is also an alternative explanation for *how* the effect of the overweight prime on the stereotype-conducive behavior of eating arises. While we propose that the stereotype activates consistent traits, goals, and goal commitment, which lead to increases in stereotype-conducive behavior, another way in which the same effects could arise is by affecting weight self-esteem. That is, social comparison to an overweight person could make the participant feel better about him or herself (Smeesters and Mandel 2006; Smeesters et al. 2010). If a consumer compares herself to someone more overweight, she may feel that it is okay to eat more cookies than when she compares herself to someone healthy weight, or does not engage in social comparison. The fact that we do not get different effects for gender or level of BMI in the earlier studies suggests that this alternative explanation is unlikely, since women, versus men, would be more likely to compare themselves to the pictured women, and participants' own BMI would be likely to affect the outcome of a comparison process. However, it would increase our understanding to examine this alternative more directly; thus, such examination is an additional purpose of experiment 5.

Lastly, experiment 4 showed a moderating effect of the accessibility of the behavior-stereotype link by manipulating whether the people in the prime pictures were eating or not. It is important to support that it is accessibility of the link, rather than the behavior of eating, driving the moderation. Thus, a third purpose of experiment 5 is to replicate the findings of experiment 4 with a different method of increasing the accessibility of the behavior-stereotype causal link.

EXPERIMENT 5: FOCUS OF ATTENTION OR ACCESSIBILITY OF THE BEHAVIOR-STEREOTYPE LINK?

Design and Procedure

Participants were 172 English-speaking undergraduates randomly assigned to the cells of a 2 (Prime: overweight vs. healthy weight) X 2 (Focus of attention: distracted vs. focused) X 2 (Accessibility of behavior-stereotype link: low vs. high) between-subject design. Students, both male and female for broader generalizability, received course credit for participation. Ages ranged from 18 to 26, 82 were female, 81 were male, and 9 did not indicate gender. Participants completed a digital picture study with the same prime procedure as used in experiment 3; each saw a neutral picture (a tree) and a picture of either a healthy weight or an overweight woman.

Focus of attention was manipulated by the study instructions. As in experiment 4, the “distracted focus” participants were instructed to focus on the use of color and were asked, “What are the first three colors that you notice in this picture?” In the focused condition, participants were instructed to focus on the *subject* of each picture and were asked, “What are the first three things you notice about the person/object in this picture?” After viewing the picture and writing the first three colors [things about the person], participants were asked to rate either the quality of the photo (distracted) or the weight of the person in the photo (focused). The instructions either focused the attention of the participant on something different from the stereotype membership of the person (by focusing attention on the colors in the photo) or focused attention on the stereotype membership (by focusing attention on the weight of the person). If the alternative explanation is correct, focusing attention on the weight of the person will attenuate the effect of the overweight prime on the number of cookies eaten.

Next, the accessibility of the behavior-stereotype causal link was manipulated. Participants in the low accessibility condition had no further questions about the person. Those in the high accessibility condition indicated how much they thought that the person in the photo ate in a typical day (1 = less than average, 7 = more than average). Estimating the amount of food an overweight person ate should increase the accessibility of the link between eating and being overweight, attenuating the increase in consumption of cookies from seeing the overweight prime. Participants next completed a cookie taste test and then a third study, including the Twenty Statements Task (TST), a manipulation check and demographics. The TST, for which participants completed up to 20 self-descriptive statements by filling in, “I am _____” (Kuhn and McPartland 1954), was included as a free-response measure of momentary health and weight self-esteem (Smeesters and Mandel 2006).

Results and Discussion

We first examined models that included gender, whether or not the participant was currently on a diet, and BMI. None of these interacted with the independent variables and thus we collapsed across them for further analyses. We next analyzed the accessibility manipulation check (participants’ answers to complete the sentence, “I believe that the primary reason people are overweight is _____”) coded as eating-related or not. Analysis revealed a higher proportion of eating-related reasons after answering the accessibility question about daily food consumption (45.6%) than not answering this (30.1%; $\chi^2(1) = 4.12, p < .043$), supporting successful manipulation of accessibility of the stereotype-conducive nature of the behavior. It is possible that asking participants to focus on the subject of the picture could also manipulate the

accessibility of the causal link between the stereotype-conductive behavior and group membership. However, examination of the manipulation check revealed no difference in eating versus other reasons for overweight in the focus (35.7%) and no focus (39.7%) conditions ($\chi^2(1) = .28, p > .59$). Examination of perceptions of how much the stimulus person ate within the high accessibility condition with a 2 (Stereotype prime) X 2 (Focus of attention) ANOVA found only a significant effect of stereotype prime ($F(1, 93) = 143.96, p < .0001$); the overweight was perceived to eat significantly more ($M = 5.4$) than the normal weight person ($M = 3.6$).

We next verified that in the focus condition participants did notice the weight of the stimulus person with a 2 (Stereotype prime) X 2 (Accessibility of behavior-stereotype link) ANOVA. The only significant effect was that of stereotype prime ($F(1, 90) = 334.36, p < .0001$). As expected, the healthy weight subject was perceived to weigh less ($M = 4.58$ on a 12-point scale) than the overweight ($M = 8.41$). Thus, the data suggest that the accessibility conditions successfully manipulated the accessibility of the link between the behavior and the stereotype as expected, while the focus instructions did not impact accessibility. Importantly, participants in the focus condition did notice the weight of the people in the photos.

The number of cookies eaten was analyzed with a 2 (Stereotype prime) X 2 (Attention focus) X 2 (Behavior-stereotype accessibility) between-participant ANOVA. The alternative explanation that the stereotype prime effects are induced by passive processing and a lack of focus on the weight of the person was tested by examining effects of the focus manipulation, either alone or in interaction with the other independent variables. No main effect, two-way, or three-way interaction was significant (all F 's < 1). Overall, these results provide no support for the alternative explanation; whether participants were instructed to focus on the picture and use of color or the subject of the picture and her weight did not significantly impact the number of

cookies participants ate in the taste test. Even when instructed to focus on the person and rate her weight, participants ate as many cookies as when they focused on the colors of the photo.

The only reliable effects in the 2 X 2 X 2 ANOVA of the number of cookies eaten was a main effect of the accessibility of the behavior-stereotype link ($F(1, 162) = 7.8, p < .006$), qualified by a significant interaction between the prime and accessibility ($F(1, 162) = 4.93, p < .028$). As expected, the data provide a replication of the basic prime effect. When nothing was done to heighten the accessibility of the link between eating and being overweight, the overweight prime resulted in consumption of significantly more cookies ($M = 3.04$) compared to the healthy weight prime ($M = 2.35; F(1, 162) = 3.93, p < .049$). However, when accessibility of the behavior-stereotype link was heightened, the prime had no effect on the number of cookies consumed ($M = 1.79; M = 2.21, F < 1$). Importantly, the impact of exposure to the overweight prime on the number of cookies eaten was significantly attenuated when the accessibility of the behavior-stereotype link was increased ($M = 3.04$ vs. $M = 1.79; F(1, 162) = 12.11, p < .001$).

We next examined answers to the Twenty Statements Task to gain insight to the alternative self-comparison process explanation. If comparison to someone overweight lead to a positive perception of relative health and weight, we would expect to see an effect of the prime on the results of the TST. Following Smeesters and Mandel (2006) two independent coders, blind to conditions, scored responses to the TST. First, a coder identified each statement that was about the person's health and weight (e.g., "I am athletic," "I am overweight"). A different coder was then given the identified statements and rated each participant's overall health and weight self-perception on a scale of 1 to 5. These scores were analyzed with a 2 (prime) X 2 (focus of attention) X 2 (accessibility of the behavior-stereotype link) ANOVA (the sample is smaller because some participants did not use any related self-descriptors in the TST). The analysis

revealed no significant effects, including no effect of the prime X accessibility interaction ($F(1, 138) < 1$). Thus, comparison effects cannot explain the effects seen in our data. (To examine how this fits with existing research, we conducted another analysis of the TST including gender as a factor. While the prime and prime X accessibility interaction remained insignificant ($F_s < 1$, there was a significant effect of prime X gender ($F(1, 123) = 10.86, p < .005$); women had higher health and weight self esteem after seeing the overweight ($M = 3.70$) than the healthy weight woman ($M = 3.31; p < .056$), while men had higher health and weight self esteem after seeing the healthy weight ($M = 3.84$) than the overweight woman ($M = 3.31; p < .007$). This effect fits with some earlier research on women (see Smeesters et al. 2010) and suggests an interesting avenue for research on men, but cannot explain the eating effects in our data.).

In addition to providing another replication of the facilitating impact of overweight others on consumption of low-nutrient, energy-dense food, this experiment replicates the experiment 4 finding that the prime effect of an overweight other is limited when the behavior-stereotype link is accessible, using a different manipulation of accessibility. The findings further suggest that distraction from the stereotype is not essential to the effect of the prime and that the effect of exposure to an overweight person is not driven by changes in self-esteem. Thus, this research provides support for the proposed process relative to possible alternative explanations.

GENERAL DISCUSSION

The studies reported in this research provide a variety of important findings. In five experiments, using four different examples of stereotyped group members (four different overweight women) with two different types of controls—1) neutral and 2) people not from the

stereotyped group (healthy weight women)—and both male and female participants we demonstrate that an active, negative social stereotype can lead to increases in stereotype-conducive behavior. We examine the process underlying this effect, supporting that stereotype activation includes inferred goal commitment that influences the current commitment of the consumer to a continuing goal and that goal commitment partially mediates the effect of the stereotype prime on stereotype-conducive behavior (experiment 2). Experiments 3 and 4 examine two important boundary conditions: heightened accessibility of the 1) countervailing goal and 2) link between the stereotype-conducive behavior and group membership can limit the stereotype prime effect on stereotype-conducive behavior. Experiment 5 provides further evidence for the proposed framework relative to either a process based on the attention paid to the stereotype or a comparison and self-esteem process.

Implications for Research on Stereotype Activation Effects

The present research provides four contributions to the stereotype literature. First, five experiments demonstrate increases in behaviors that are believed to be causal to membership in a negatively stereotyped group. While previous work has shown increases in behaviors associated with a group (Wheeler and Petty 2001), this appears to be the first research that shows increases in behaviors that are conducive to group membership. The fact that a negative stereotype prime can increase stereotype-conducive behaviors, despite consumers' countervailing goals, contributes to understanding of the powerful influence of stereotypes.

Second, building on recent research (Aarts et al. 2004; Van Boven et al. 2010), this suggests that an activated stereotype can impact a consumer's current commitment to an ongoing

goal. While research demonstrates that a person can take on the stereotypical goals of a group (Aarts et al. 2004) our work extends these findings, showing that the level of commitment to a particular goal can also be affected by a stereotype prime. This is the first demonstration of which we are aware that stereotype activation can influence multiple goals and a person's own felt goal commitment. However, while the evidence supports the proposed activation of stereotypical goal commitment, it is possible that the stereotype activation of the goal to pursue the stereotype-conducive behavior (i.e., the goal to eat) suppresses the countervailing (i.e., health) goal (Shah, Friedman, and Kruglanski 2002). While we think that a direct activation of stereotypical goal commitment is a more parsimonious explanation, future research comparing activation of goal commitment to a goal activation and shielding process will be useful.

Recent research finds that self-focus can limit the effects of stereotype activation on behavior and emphasizes the need for research on other limiting factors (Dijksterhuis and van Knippenberg 2000; Smeesters et al. 2009). A third contribution of our research is the identification of two additional moderating factors. Experiment 3 showed that increasing the accessibility of a countervailing goal significantly attenuates the effect of a stereotype prime. Interestingly, this experiment showed that thinking about one's home did not attenuate the effect of an overweight prime, while focusing on one's health goals did, suggesting that exploration of the aspects of self-focus that limit stereotype prime effects could be fruitful. The results of experiments 4 and 5 demonstrate that increased accessibility of the link between a behavior and membership in the negatively stereotyped group attenuates the effect of the stereotype prime, demonstrating the importance of expanding consideration of priming effects to non-deterministic groups and stereotype-conducive behaviors. A question that our research does not address is the

extent to which the effect of goals is limited to goals that directly compete with the potential outcome of stereotype-conducive behavior. This is an intriguing question for future research.

A fourth contribution of this research to the stereotype literature stems from the examination of the role of focus of attention in stereotype prime effects. Experiment 5 directly manipulates focus, showing that the effect of a stereotype prime occurs even when participants consider, and even rate, the person in terms of stereotype membership. This research adds to the influential research on stereotype prime effects by demonstrating that such effects can arise with conscious recognition of the group membership of a person in a stereotyped group.

Implications for Consumers and Consumption

In addition to contributing to the theoretical literature on stereotype prime effects, the specific domain of overweight and eating is of high practical importance. The number of overweight consumers is rapidly increasing worldwide. Over 67% of U.S. adult consumers are now overweight or obese, which is associated with a variety of adverse health consequences, including Type II diabetes, heart disease, and multiple cancers (CDC 2007). While it is clear that people are gaining weight because of an imbalance between energy consumed versus expended, reasons for the precipitous increase in this imbalance are unclear. Recent research emphasizes a need to explore social and environmental factors that influence weight gain. Intriguing research suggests person-to-person, social network influences—analysis demonstrated that a person's chance of becoming obese significantly increased when a socially close other (e.g., friend, sibling, or spouse) became obese, even if the other lived at a distance (Christakis and Fowler 2007). While this research provided evidence of social influences on weight gain, the nature of

the data limited examination of how this might occur. The findings of our research are consistent with the spread of overweight through social networks and, in fact, the behavioral and goal commitment assimilation from seeing people who are overweight could be one way in which the social network effects arise. People see, both in person and in photos, the people with whom they have close social ties. When close others are overweight, our research suggests that stereotype activation could lead to increased food consumption relative to when close others are healthy weight, since merely seeing someone overweight can increase eating.

At first glance, the increase in food choice and consumption upon exposure to someone overweight demonstrated across our studies may appear inconsistent with recent research. McFerran et al. (2010b) showed that non-dieters (versus dieters) ate fewer snacks when a server was obese versus thin, while we did not find effects of BMI, current dieting behavior, or gender in our studies. However, as noted earlier, the fact that the overweight other was serving food may have increased the accessibility of the idea that eating leads to becoming overweight. Additionally, a critical difference between our work and that of McFerran et al. (2010b) is that their participants saw someone thin or obese, while ours saw someone who was perceived to be overweight (not obese) or healthy weight (not thin). As indicated by recent research, people who are obese and overweight may be perceived to be different (Smeesters et al. 2010). It is possible that seeing an obese, compared to an overweight, person increases accessibility of the link between eating and weight gain which, as shown in experiments 4 and 5, could limit the extent to which consumers eat in the presence of an obese, versus an overweight, person.

We explored this possibility by conducting a study with three manipulations of weight prime: healthy weight, overweight or obese. A pretest using a 19-point scale identified photos of women perceived to be obese ($M = 15.62$), overweight ($M = 14$) and healthy weight ($M = 6.68$);

differences were significant (obese vs. overweight: $F(1, 34) = 9.62, p < .004$; overweight vs. healthy weight: $F(1, 32) = 280.84, p < .0001$). Participants, 73 people walking through a lobby at the University of Colorado (average age = 23, range from 17 to 47; 58% male), were randomly assigned to one of the prime conditions. After completing a short questionnaire that included evaluating one of the three pictures, participants were offered candy as a thank you. ANOVA of the number of candies taken revealed a significant prime effect ($F(2, 70) = 3.45; p < .04$). The number of candies was regressed on prime condition and the prime X prime interaction; significant effects, in opposite directions, of the prime ($t(70) = 2.57, p < .01$) and the interaction ($t(70) = -2.62$) indicate a curvilinear relationship. Individuals who saw the overweight person took significantly more candies ($M = 1.4$) than those who saw the healthy weight person ($M = .83; t(70) = 2.35, p < .02$). Importantly, individuals who saw the obese person took significantly *less* candy compared to the overweight condition ($M = .86; t(70) = 2.17, p < .03$) and the same amount as in the healthy weight condition ($t(70) = .17, p > .80$).

These findings help resolve the apparent discrepancy between our findings and those of McFerran and colleagues by demonstrating that extremity of weight may lead to differential effects on eating behavior. These also provide additional evidence that the process is not one of social comparison since comparison to someone obese should lead to even better feelings about the self and own weight than comparison to someone overweight. These results suggest directions for future research on stereotype priming as well as on weight of others and consumption. Research examining the differences in the content activated by an overweight, versus obese, stereotype may offer insights into the process by which the weight of a person affects a consumer's own food choices. Smeesters et al. (2010) look at a range of body weights and show different effects on females' self esteem depending upon the extremity of the weight of

models in ads and the weight of the female herself. It is clear that there is still much to be understood about how the weight of someone else in a person's social environment—friends, servers, models, characters in TV shows, etc.—are likely to impact eating and other health-related choices. While some researchers interested in decreasing overweight bias call for increased inclusion of overweight people in the popular media (e.g., Greenberg et al. 2002; Wykes and Gunter 2005), the current research suggests the possibility of unintended consequences. Further research into the effects of greater representation of overweight people on a variety of variables including bias, goals, and eating is warranted, with particular consideration given to avoiding the ironic effect of inadvertently causing consumers to eat more indulgent food.

Implications for Future Research

A limitation of this research is that all studies examine a single stereotype-conducive behavior and one negatively stereotyped group. It would be useful to examine additional stereotype-conducive behaviors and stereotypes. The behavior examined here is consumption of indulgent foods; it would be useful to see whether the overweight stereotype is such that eating all types of foods, healthy as well as indulgent, would show the same increase or whether this would lead to a decrease in active behavior and exercise. Likewise, future research could examine other types of stereotype-conducive behaviors, such as exercising, or different negatively stereotyped groups. For example, does exposure to a smoker result in decreased commitment to health goals and thus a concomitant increase in potential to smoke? Or does exposure to the materialistic people often seen in TV shows affect a person's own extrinsic

(versus intrinsic) motivations? An important direction for future research is to examine how the strong effects seen in this research generalize beyond the overweight stereotype.

Another direction for future research is to examine the impact of stereotype exposure on different consumer groups, particularly vulnerable groups such as children or the elderly. There is currently little stereotype prime research with children. Examining the extent of these effects with children at different developmental stages would add to our overall understanding of stereotype priming. The alarming increase in overweight and obesity of young children, with obesity in children doubling over the last 30 years (CDC 2007), makes it particularly important to gain further understanding of factors that influence the eating choices that children make.

There is a growing literature on the important effects of subtle environmental factors on consumers' behavior (e.g., Meyers-Levy and Zhu 2007) and environmental factors that exert unconscious influence on eating (see Wansink 2006). In order for people to correct for the influence of such factors, they need to at least understand that there is potential influence (Bargh and Chartrand 1999). Our study on consumers' naïve theories about the influence of exposure to overweight others described in the introduction suggests that consumers are unaware of the possibility that others' overweight could increase their own eating and thus are likely to be vulnerable to these effects because they do not see a need for vigilance. By identifying the need to be vigilant and to consciously remember personal health goals when considering eating choices, especially in the presence of overweight others, we hope our results can be helpful to consumers, public policy makers and researchers, alike.

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FIGURE 1
PRETEST RESULTS FOR PERCEIVED WEIGHT OF HEALTHY WEIGHT AND
OVERWEIGHT PHOTOS: EXPERIMENT 1



M = 7



M = 12.4

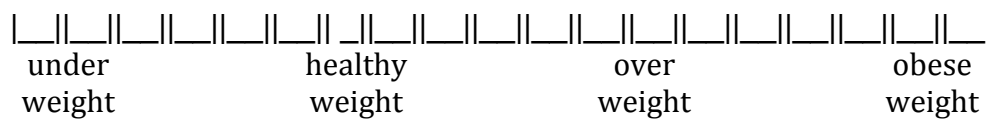


FIGURE 2

EXPERIMENT 3: THE INFLUENCE OF STEREOTYPE EXPOSURE AND ACCESSIBILITY
OF COUNTERVAILING GOAL ON COOKIES EATEN

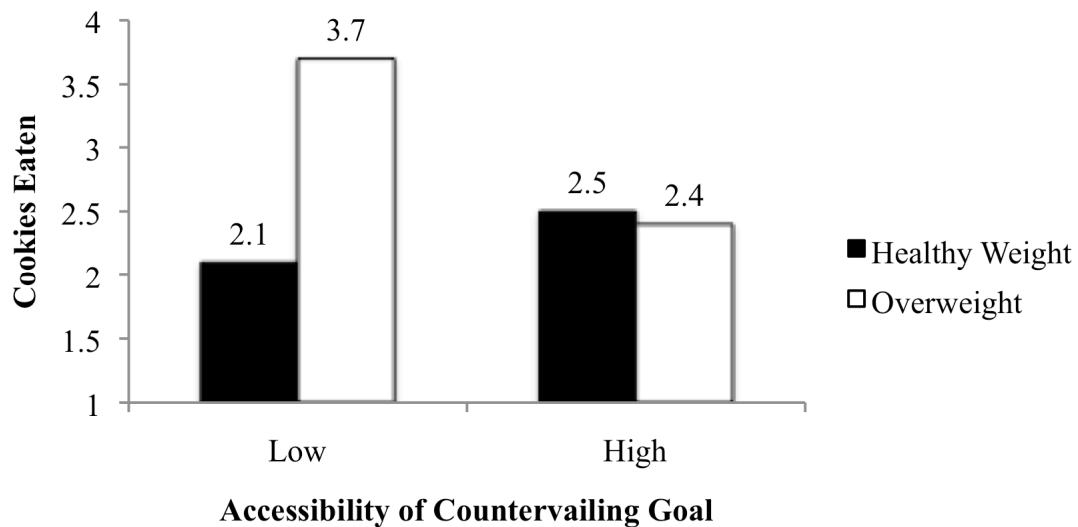


FIGURE 3

EXPERIMENT 4: THE INFLUENCE OF STEREOTYPE EXPOSURE AND ACCESSIBILITY
OF BEHAVIOR- STEREOTYPE LINK ON COOKIES EATEN

