Perceptions of Obesity Across the Lifespan

Michelle R. Hebl[1], Enrica N. Ruggs[1], Sarah L. Singletary[1] and Daniel J. Beal[1]

Objective: Previous research on obesity stereotyping has almost extensively involved looking at the perceptions that 5–21-year-old individuals have toward members of their own age in-group. Very little research has examined how people perceive obesity across the lifespan. The current research begins to address this gap by examining the extent to which individuals between 18 and 77 years of age stereotype obesity in 20, 40, and 60-year-old targets.
Methods and Procedures: A total of 106 male and 102 female white participants viewed nine standardized Adobe- cropped photos that depicted 20, 40, and 60-year-old faces on slender, large, and very large-sized bodies. After viewing each photo, participants evaluated the targets on six dimensions used in previous obesity stereotyping research.
Results: As predicted, heavier women were rated more negatively than thinner women on every dimension we examined. In addition, older women were rated more negatively than younger women on attractiveness, but more positively on every other dimension. Other main effects revealed that female (relative to male) and older (relative to younger) participants were more lenient in their ratings. Several two-way interactions revealed that the obesity stereotype for attractiveness is exaggerated when targets are younger, that males (compared to females) levy a greater penalty for increasing weight, and that this pattern is exaggerated more for younger men.
Discussion: This research shows a consistency across the lifespan in the extent to which participants, varying in weight, age, and sex, stereotype obesity. It also appears that, at least with respect to attractiveness, younger obese individuals are denigrated to a larger degree than older. In sum, this research shows prevalent and consistent patterns of obesity stereotyping across the lifespan.

Over the past century, the world's population has become increasingly heavier. In fact, there is evidence that as many as 1.6 billion people (age 15 or older) can be categorized as being overweight (1). In the United States, the prevalence is even greater with estimates suggesting that >74% of our population is either overweight or obese (1). As a result of this escalation in incidence, the number of empirical research studies that address issues related to obesity also has increased. Unfortunately, most of these studies focus on the medical issues that are associated with being heavy. Only in the past couple of decades, however, have researchers begun to examine with any regularity the social consequences of obesity (2–4). Examining such social consequences is important because the research has revealed that even more than a medical disease, being heavy seems to be a social disease. Such studies consistently reveal that there are negative stereotypes of, and a great deal of, prejudice and discrimination exhibited toward heavy individuals—they are viewed to be lazier, less disciplined, less attractive, and less desirable partners in social and work situations; they are also selected into college, social groups, and relationship less often, and are evaluated across the employment cycle more negatively than are their thinner counterparts (for review, see ref. 5), In short, obesity seems to be a particularly pernicious stigma.

It is possible that there are some variables that moderate the stereotyping of obesity. In this study, we examine the possibility that age is one of these factors. In particular, we are interested in examining perceptions of obesity across the lifespan, and there are two different ways to examine this—from the perceiver's perspective (i.e., does the age of the perceiver influence weight attitudes) and from the target's perspective (i.e., does the same person perceive weight differently in targets who are young vs. old). In the current study, we examine both perspectives by having 18–77-year old participants express their perceptions of individuals who are 20, 40, and 60 years of age. We believe such research is important for a number of reasons: (i) to our knowledge, these perceptions have, to date, gone unexamined, (ii) it may help clarify theoretical accounts of anti-fat prejudice (3), and (iii) it may help reduce obesity stereotyping by discovering the pattern, magnitude, and potential reasons for existing variations in perceptions.

Stereotypes about obesity
Past research findings converge in demonstrating the wide ranging deleterious social effects of being heavy. Though not focusing explicitly on obesity, recent work examining the content of stereotypes (4) suggests that they fall along two dimensions: warmth and competence, which are in turn associated

[1]Department of Psychology, Rice University, Houston, Texas, USA. Correspondence: Michelle R. Hebl (hebl@rice.edu)

with particular affective reactions (i.e., prejudices). Given that obesity appears to be a uniformly negative stigma (6), we anticipate (Hypothesis 1) that a precise examination of these important dimensions would reveal that obese individuals are rated as being low on competence (i.e., intelligence, job aptitude) and warmth (i.e., happiness, success at relationships, and popularity/sociability). We also include attractiveness as an additional dimension of stereotyping for three primary reasons: first, irrespective of an individual's warmth or competence, recent theorizing suggests that obese individuals are avoided because of the biologically relevant information that obesity may convey (7,8); second, prior research indicates that obese as well as older (see below) individuals are stereotyped on physical attractiveness (3,5). Third, attractiveness often is a key factor in social and work contexts (9).

Stereotypes about age

It is possible that perceptions of obesity are complicated by age, but we consider the stereotypes of age independently before considering how age might act in concert with obesity. Most stereotype research shows the presence and use of both positive and negative stereotypes toward older people. For instance, stereotype research has shown that respondents display positive stereotypes of older people such as the "perfect grandparent," (i.e., family-oriented, happy, generous, wise, and enjoying life) but also judge older people as having severe impairments, perceive them to be less attractive, and discriminate against them on the job (5,10–13). These findings are consistent with the stereotype content model, which suggests that older people are perceived as high in warmth (i.e., tolerant, sincere, good-natured, happier, content, and embedded in important relationships) but low in competence (i.e., intelligence, competence, confidence; see refs. 4,5). Following past research, we predict (Hypothesis 2) that older individuals will be negatively stereotyped on attractiveness and competence dimensions (i.e., intelligence, job aptitude) but not on warmth and related dimensions (happiness, success at relationships, popularity/sociability).

Why age might moderate obesity stereotyping

As stated earlier, there has been little research examining obesity stereotypes across the lifespan; however, one exception to this is research conducted by Rand and Wright (14,15). In their first study, they examined perceptions of ideal body weight by asking four sets of participants (11–12, 16–18, 19–22, and 32–59 years of age) to rate the ideal body sizes of line-drawn stimuli representing individuals from five age groups (i.e., babies, children, young adults, middle age adults, and older adults). Results revealed that regardless of one's age there was a general tendency for individuals to perceive medium-sized bodies as ideal, and to perceive very thin and obese body sizes as the most unacceptable. In their second study, they found that younger adults were more likely to prefer thinness in women than babies, children, or men. Though we are encouraged by the research question and complex design that was used, there are some limitations of this study. First, line drawings were used and introduce a range of methodological problems (see ref. 6).

In fact, when observing the stimuli that were presented to participants, the only way to tell the difference between the three adult groups was from the label, and there was very little difference between the drawings of the adults and the children as well. Thus, it may not be surprising that few differences were found across the lifespan. Second, the researchers grouped all 32–59 year olds together as "middle aged adults" and did not look for potential variations within this group. Thus, such data and the conclusions are somewhat preliminary at best.

We believe that obesity may be less of a stigma for older individuals, particularly on the dimension of attractiveness (16). First, heightened attention is placed on individuals' appearances during their late adolescence/young adulthood, and they often are victims of social rejection if they vary from the normative expectations about appearance (7). Second, late adolescence typically marks a time period in which individuals focus heavily on dating, which may put additional pressures on individuals to look their best (and be thin). Third, older individuals are more likely to be heavy than younger individuals (17). As such, weight may provide less of a cue for stigmatizing older adults. According to the justification–suppression model of prejudice (18), people use observed stereotypes (which often align with the stereotype content model) to either justify or suppress displaying prejudices. Although obesity typically is negatively stereotyped, it may be that people are more likely to suppress negative stereotypes for older individuals because weight loss is assumed to be easier in younger individuals. Using the stereotype content model as well as the justification–suppression model (14,15,18), we predict (Hypothesis 3) that participants will use obesity as a negative cue in evaluating younger targets, particularly on attractiveness, more than they will use it to evaluate older targets. We do not make any other predictions about formal target weight by age interactions on the other dimensions; instead, we examine these and other higher-order interactions in an exploratory way.

METHODS AND PROCEDURES
Participants

Participants included 102 men and 106 women ranging from 18 to 77 years of age (M = 39.41, s.d. = 17.44). The average BMI was 26.38 (s.d. = 6.29), which is consistent with the larger population (M = 27.5) upon which our sample is based. Participants were recruited from various places (e.g., university campus, malls, coffee shops, book stores). To simplify the design and avoid the confounds that exist with ethnicity (6), this study only involved white participants and targets.

Materials

To create our standardized stimuli, we began by asking older white women to give us photos of their faces at the ages of 20, 40, and 60. All photos had to be frontal facing and depict neutral to slightly positive facial expressions. All women signed a consent form, allowing us to use their pictures for research and were told that their faces would be morphed onto different bodies. In addition, we selected only faces that had clear photographic quality and if hairstyles reflected a particular period of time

(i.e., the 70s), then we cropped hairstyles to reflect a generic one that would be acceptable across decades. Using a virtual morphing technology intended to show online shoppers how certain clothes fit their physique, we developed three body sizes that depicted a woman who was 5′5″ and had: (i) a slender frame (120 lbs), (ii) a large frame (180 lbs), and (iii) a very large frame (350 lbs). We specifically chose a thin individual and two heavier individuals (one who was somewhat heavy and the other who was unmistakably heavy) because past research has often examined the stereotypes about obesity by examining reactions to only slightly heavy individuals (see ref. 19). The morphing program also allowed us to depict women wearing one of nine different business casual outfits, all of which could be morphed automatically to fit the respectively sized frames. Using Adobe Photoshop, we then morphed the faces to different body frames and put different outfits on the targets. As a result, then, we were able to develop three versions of nine surveys, each of which depicted a total of nine different female composites: three in each of the weight categories, three in each of the age ranges, all wearing different outfits.

A questionnaire was adapted from previous research (6) to assess perceptions of each target picture across six dimensions: attractiveness, intelligence, happiness, job aptitude, success at relationships, and popularity/sociability. For each item, participants responded on 7-point Likert-type scales (1 = "not at all", 3 = "somewhat", and 7 = "very much"). Participants also completed basic demographic information (i.e., sex, age) about themselves.

Procedure
Participants were recruited to take part in a "Person Perception Study" and were asked to "view photographs of individuals and make ratings of them on a variety of scales." Participants were randomly assigned to one of the 27 sets that we developed (i.e., three weights, three ages, three versions). Upon viewing each photograph, participants recorded their immediate perceptions on the six dimensions. Then, they proceeded to the next photo, and completed these ratings for each of the nine photographs.

RESULTS
Because participants viewed only 9 of the 27 possible conditions (three weights, three ages, and three versions), we could not employ a standard repeated measures ANOVA analysis framework. Instead, we treated the variables as random effects and adopted a mixed model regression framework using the analysis program HLM 6. In the analyses that follow, responses to each photograph are nested within participants. Each participant received a random assortment of nine photographs that varied across conditions and versions. This approach allowed us to reduce the number of photographs each volunteer participant rated, yet still allowed for powerful tests of our main hypotheses.

Because of the full crossing of multiple participant and target factors in this study, there were many tests for which we had no hypotheses. Because of the increased number of potential effects, we decided to use a more conservative alpha level to protect against interpreting effects that potentially were Type I errors. As such, we report only effects significant at the $P < 0.01$ level.

Before conducting our primary analyses, we wished to rule out the particular version of stimulus materials as a factor of interest. Across all six dependent variables, version exhibited no significant main effects or interactions. Further analyses revealed that including or excluding version had no influence on any of the other effects in our analyses. As such, we collapsed across version and focus our report on the effects for the primary study variables of age and weight. We also wished to rule out participant BMI as a potential factor in our analyses. Across all six dependent variables, BMI exhibited no significant main effects or interaction. Therefore, we decided not to include participant BMI as a factor in the results reported below. Finally, we should mention that all models reported below contain significant random intercept effects, but as none of the random slopes were significant, we treated these as fixed effects. Table 1 presents means, s.d., and intercorrelations of all of the measured variables in the study.

Attractiveness
Table 2 presents the results for all independent variables and the six dependent variables. We have included only main effects and two-way interactions, as no higher-order interaction was significant at the $P < 0.01$ level. The regression model predicting ratings of attractiveness revealed significant main effects for participant sex, participant age, target age, and target weight, as well as significant interactions for target age by target weight, target

Table 1 Means, s.d., and intercorrelations of the primary study measures

		Mean	s.d.	1	2	3	4	5	6	7
1	Age	39.41	17.44							
2	Sex	0.51	0.50	−0.01						
3	Attractiveness ratings	3.76	0.98	0.34	0.33					
4	Intelligence ratings	4.74	0.60	0.21	0.22	0.51				
5	Job aptitude ratings	4.94	0.70	0.15	0.22	0.36	0.86			
6	Success in relationships ratings	4.65	0.65	0.20	0.16	0.60	0.72	0.75		
7	Happiness ratings	4.88	0.63	0.02	0.13	0.49	0.57	0.54	0.79	
8	Popularity/sociability ratings	4.78	0.64	0.13	0.15	0.58	0.62	0.57	0.82	0.82

Ratings reflect average ratings across different targets. N = 208. Correlations <0.18 are significant at the $P < 0.01$ level.

Table 2 Summary of effects for target age, target weight, participant age, participant weight, and participant sex

Predictor variable	Dependent measure					
	Attractiveness	Intelligence	Happiness	Job aptitude	Success in relationships	Popularity/ sociability
Main effects						
Ppt sex	0.24*	0.12*	0.08	0.13*	0.09	0.10
Ppt age	0.24*	0.11*	0.02	0.07	0.11*	0.08
Target age	−0.07*	0.05*	0.15*	0.10*	0.10*	0.11*
Target weight	−0.24*	−0.17*	−0.10*	−0.12*	−0.11*	−0.06*
Two-way interactions						
Ppt age × sex	−0.12*	−0.06	−0.05	−0.07	−0.06	−0.10*
Target age × sex	0.03	−0.00	0.00	0.02	0.00	0.01
Target weight × sex	0.06*	0.00	−0.00	−0.00	0.01	−0.00
Ppt age × target age	0.05	−0.01	−0.04	−0.03	0.01	−0.01
Ppt age × target weight	−0.03	−0.02	−0.05	−0.02	−0.05	−0.03
Target age × target weight	0.10*	0.04	0.06	0.04	0.06	0.07

All coefficients are estimates of standardized regression weights. Interactions above second order were all found to be nonsignificant, both by our more conservative $P < 0.01$ criterion as well as the more traditional $P < 0.05$ criterion. Therefore, for the sake of simplicity, we have removed these effects from the table.
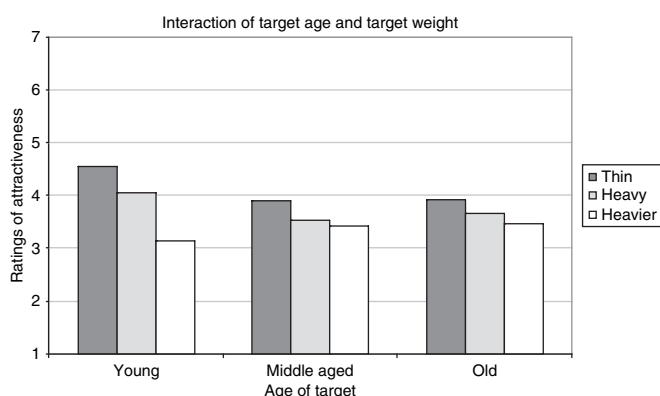Ppt, participant.
*$P < 0.01$.

Figure 1 Interaction between target age and target weight on perceived attractiveness.

Figure 2 Interaction between target weight and participant sex on perceived attractiveness.

weight by participant sex, and participant age by participant sex. The main effect of sex revealed that male participants rated targets as less attractive than female participants. The main effect of participant age indicated that as participant age increased, so did ratings of attractiveness. The main effect of target age indicated that as target age increased, ratings of attractiveness decreased. Finally, the main effect of target weight indicated that as target weight increased, ratings of attractiveness decreased.

Graphs of the significant interactions for attractiveness are presented in **Figures 1–3**. We have presented cell means in bar charts for all cases where categories of the independent variables are discrete (i.e., target age, target and participant sex, and target weight); in cases where an independent variable is continuous (i.e., participant age), we depict the effects as regression lines. As can be seen in **Figure 1**, target weight appears to have its greatest effect when the targets are young. The effect of weight is reduced at middle age and old age. Notably, however, the pattern for weight is consistent across all target ages.
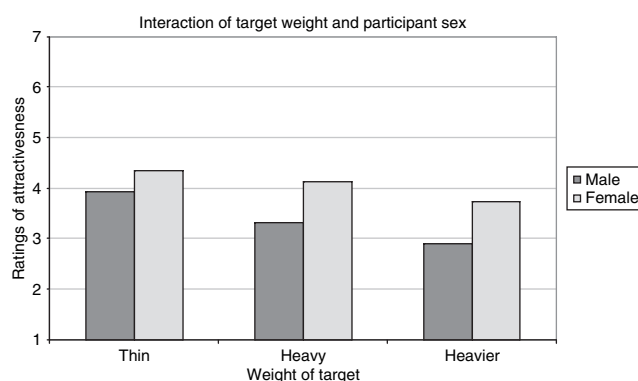
Figure 2 presents the interaction of target weight by participant sex. The source of the interaction here appears to be that, relative to female participants, male participants levy a greater penalty on attractiveness ratings as target weight increases. The final interaction for ratings of attractiveness, involving participant age and participant sex, is presented in **Figure 3**. As can be seen, the relation between participant age and ratings of attractiveness is stronger for male participants than female participants. Given the main effect of participant sex, however, the male participants always have lower ratings of attractiveness than female participants, regardless of age.

Intelligence

Much like the results for attractiveness, we found support for the main effects of participant sex, participant age, target age, and target weight. Furthermore, the directionality of these effects was largely consistent with the attractiveness ratings, with one exception. Specifically, increases in target age were
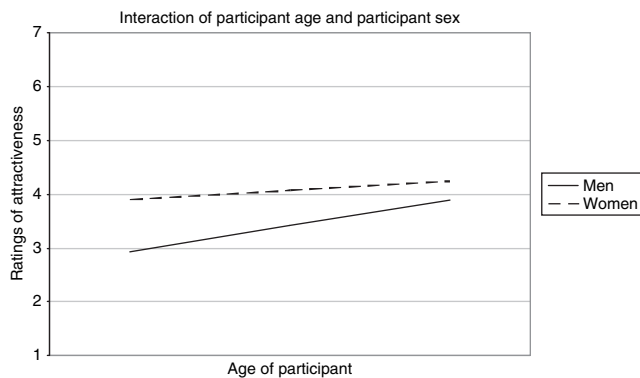
Figure 3 Interaction between participant age and participant sex on perceived attractiveness.

Figure 4 Interaction between participant age and participant sex on perceived popularity/sociability.

slightly but significantly associated with increased intelligence (as opposed to decreased attractiveness). Additional effects revealed that female participants rated all targets as more intelligent than did male participants. Also, as age of participant increased, so did ratings of intelligence for all targets. Finally, as target weight increased, ratings of intelligence decreased. No significant interactions were observed.

Happiness

The regression model predicting ratings of happiness revealed only two significant effects: a main effect for target age and a main effect for target weight. As target age increased, ratings of happiness also increased. As target weight increased, ratings of happiness decreased. No interactions were significant.

Job aptitude

The regression model predicting ratings of job aptitude was much like that for ratings of happiness; however, in addition to main effects for target age and target weight, there also was a main effect of participant sex. The main effects for target age and target weight again suggested that older targets have increased job aptitude and that heavier targets had decreased job aptitude. The main effect for participant sex indicated that females rated all targets as having greater job aptitude. No interactions were significant.

Success at relationships

The regression model predicting success at relationships revealed three main effects and no interactions. Much like other effects for participant age, the effect for relationship success suggested that as participant age increased, so did ratings of the target's relationship success. Similarly, as target age increased, so did perceptions of target's relationship success. Finally, as target weight increased, perceptions of the target's relationship success decreased.

Popularity/sociability

The regression model predicting popularity/sociability revealed two main effects and one interaction. In particular, the consistent main effects of target age and target weight again were observed. As target age increased, so did ratings of the target's
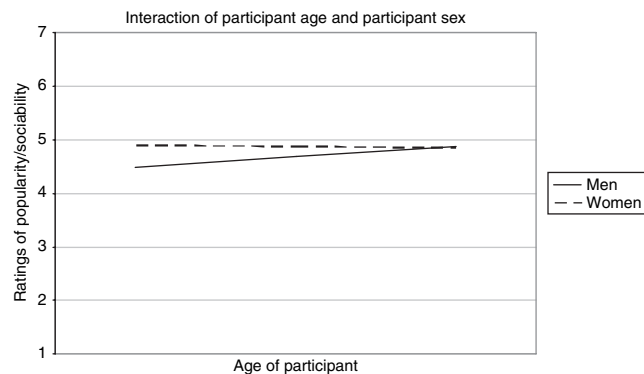
popularity/sociability; however, as target weight increased, ratings of the target's popularity/sociability decreased. The significant interaction involved participant age and participant sex and is depicted in **Figure 4**. As can be seen, the pattern is very similar to the analogous interaction observed for attractiveness ratings; the relation between participant age and ratings of popularity/sociability is positive and stronger than the relation is for female participants. Also like the pattern for ratings of attractiveness, female participants exhibited consistently higher ratings of target popularity/sociability, regardless of their age.

DISCUSSION

Results from the current research at least partially supported all of our hypotheses. That is, heavy targets were denigrated more than were thinner targets on all dimensions, thereby fully supporting Hypothesis 1. These results are consistent with previous research that shows the overwhelmingly negative attitudes and behaviors that are directed toward heavy individuals. It is important to note that the size of participants (measured via BMI) had no influence whatsoever on these ratings. Thus, unlike many stereotyped groups (i.e., ethnic minorities, women), heavy participants did not show favorability toward other in-group members; in fact, they rated them just as negatively as did out-group members.

Consistent with Hypothesis 2, older targets were rated more negatively than younger targets on attractiveness and were rated more favorably on all warmth dimensions (i.e., happiness, relationship success, and popularity/sociability). However, older targets were not penalized, as predicted, on competence dimensions (i.e., job aptitude, intelligence); in fact, they were rated more favorably on these dimensions relative to younger targets. One explanation for this pattern may be that our oldest group of targets (60 year olds) was not old enough to evoke negative stereotypes along competence dimensions as seen in previous literature (4,5). Similarly, people seem to distinguish between young–old (55–64) and old–old (75 and older), and view the young–old as "wise old owls" but the old–old with negativity (20).

The current research is important for a number of reasons. First, it provides evidence that there are differences in obesity

stereotyping across the lifespan. Results showed two of the anticipated main effects were qualified by interactions involving target weight, revealing that obesity is viewed differently according to the age of the target. For instance, a target age by target weight interaction revealed—consistent with our hypotheses (Hypothesis 3)—that thinness makes the greatest difference in attractiveness ratings for the younger targets. Fluctuations in weight did not influence perceptions of older targets (see **Figure 1**). This pattern is consistent with the idea that being obese carries a greater penalty when people are young, but this is only on the dimension of attractiveness. This suggests that ideals of beauty are significantly influenced by both age and weight. This may also suggest that people in fact do use the justification–suppression model when evaluating obese individuals who vary in age. As predicted, our results suggest that people are likely to suppress negative attitudes concerning obesity when evaluating older individuals and feel more justified in displaying negative attitudes when evaluating younger obese individuals, although this was particularly the case for young men rating young women. A second interaction involving target weight (by participant sex) revealed that male participants were particularly likely to penalize targets on attractiveness as a function of their weight. Again, this interaction was restricted to the attractiveness dimension and confirms some of the pressures that young women face from opposite sex members.

Second, the current study shows variation in the extent to which participants stereotype obesity vs. age. Whereas perceptions of obesity seem to be consistent (i.e., those who are heavy are consistently evaluated more negatively), perceptions of age significantly differ depending on the particular domain being rated. Third and similarly, very little research has previously examined the extent to which stereotypes about obesity vary across the lifespan. One of the strengths of the current research is not only that it begins to fill this void but that it also does so with a set of stimuli that is standardized, realistic, and controls for many confounds. No known research has measured stereotyping of age across the lifespan by using photos of the same targets depicted at different ages, despite the fact that this provides nice standardization because an individual's level of attractiveness is highly stable across time (21). In addition, the development of 27 different sets of photos reduces confounds introduced by idiosyncratic clothing, hairstyles, face–body combinations, any particular version of stimuli presented, or other appearance features. It is also important to note that individuals did not suspect that the stimuli were morphed. Thus, the stimuli that we worked from allow us to feel confident that stereotypes about obesity vary to some extent across the lifespan.

Fourth, the current research may provide additional insight regarding the social factors that may contribute to weight gain across the lifespan. Previous research (17) has revealed that there is a general tendency for individuals to gain weight as they age for a number of medical reasons (e.g., loss of muscle mass). Results from the current study indicate that younger individuals may be bound by social norms dictating attractiveness more so than their older counterparts. As a result, older individuals may be less inclined to maintain lower weights

because they are denigrated to a lesser extent for being heavy. More research is needed to examine these relationships and clarify how age influences different motivations for gaining and losing weight.

In this study, we also found consistent participant sex effects across all dependent measures. Namely, female participants consistently rated targets more favorably than did male participants. Such a finding has been dubbed "the female positivity effect" (22). In addition to these main effects that emerged, there were few cases in which participant sex interacted with age and/or weight. In particular, it appears that men exhibit stronger negative relations between weight and attractiveness, and age and attractiveness than do women. Women did impose a similar penalty on attractiveness for being older and being heavier; however, the patterns were stronger for men.

Although the current research had a number of strengths, it also had limitations. In an ideal world, we would like to have examined the intersection between respondents of all ages, sexes, ethnic backgrounds, and sizes making evaluations of targets of all ages, sexes, ethnic backgrounds, and sizes. Although ongoing research in our lab is attempting to take a broader look at stereotypes people hold about obesity based on such characteristics, it is very difficult and quickly becomes very complex to add everything into a single design. Future research should continue to examine the generalizability of our results with other samples, and the attributions that are assigned to heavy individuals as a function of age.

DISCLOSURE

The authors declared no conflict of interest.

REFERENCES

1. World Health Organization. *Obesity and Overweight*. 2006. <http://www.who.int/mediacentre/factsheets/fs311/en/index.html>.
2. Brownell KD, Puhl RM, Schwartz MB, Rudd L. *Weight Bias: Nature, Consequences, and Remedies*. Guilford Publications: New York, 2005.
3. Crandall CS, Nierman A, Hebl M. Prejudice toward weight. In: Nelson T (ed). *Handbook of Prejudice, Stereotyping, and Discrimination*. Psychology Press: New York, NY, 2008.
4. Fiske ST, Cuddy AJ, Glick P, Xu J. A model of (often mixed) stereotype content: competence and warmth respectively follow from perceived status and competition. *J Pers Soc Psychol* 2002:82:878–902.
5. Cuddy AJ, Fiske ST. Doddering but dear: process, content, and function in stereotyping of older persons. In Nelson T (ed). *Ageism*. MIT Press: Cambridge, MA, 2002, pp 3–26.
6. Hebl M, Heatherton TF. The stigma of obesity in women: the difference is Black and White. *Pers Soc Psychol Bull* 1998;24:417–426.
7. Klaczynski AP. There's something about obesity: culture, contagion, rationality, and children's responses to drinks "created" by obese children. *J Exp Child Psychol* 2007;99:58–74.
8. Park JH, Schaller M, Crandall CS. Pathogen-avoidance mechanisms and the stigmatization of obese people. *Evol Human Behav* 2007;28:410–414.
9. Dion K, Berscheid E, Walster E. What is beautiful is good. *J Pers Soc Psychol* 1972;24:285–290.
10. Hummert ML. Multiple stereotypes of elderly and young adults: a comparison of structure and evaluations. *Psychol Aging* 1990;5:182–193.
11. Kite ME, Stockdale GD, Whitley BE Jr, Johnson BT. Attitudes toward younger and older adults: an updated meta-analytic review. *J Soc Issues* 2005;61:241–266.

12. Roscigno VJ, Mong S, Byron R, Tester G. Age discrimination, social closure, and employment. *Soc Forces* 2007;86:313–334.

13. Erber JT, Danker DC. Forgetting in the workplace: attributions and recommendations for young and older employees. *Psychol Aging* 1993;10:565–569.

14. Rand CSW, Wright B. Continuity and change in evaluation of ideal and acceptable body sizes across a wide age span. *Int J Eat Disord* 2000;28:90–100.

15. Rand CSW, Wright B. Thinner females and heavier males: who says? A comparison of female to male ideal body sizes across a wide age span. *Int J Eat Disord* 2001;29:45–50.

16. Brownell KD, Puhl RM, Schwartz MB, Rudd L. *Weight Bias: Nature, Consequences, and Remedies*. Guilford: New York, 2005.

17. Lovejoy JC. The influence of sex hormones on obesity across the female life span. *J Womens Health* 1998;10:1247–1256.

18. Crandall CS, Eshleman A. A justification-suppression model of the expression and experience of prejudice. *Psychol Bull* 2003;129:414–446.

19. Crocker J, Cornwell B, Major B. The stigma of overweight: affective consequences of attributional ambiguity. *J Pers Soc Psychol* 1993;64:60–70.

20. Hummert ML. Physiognomic cues and the activation of stereotypes of the elderly in interaction. *Int J Aging Human Dev* 1994;39:5–20.

21. Zebrowitz LA, Olson K, Hoffman K. Stability of babyfaceness and attractiveness across the life span. *J Pers Soc Psychol* 1993;64:453–466.

22. Winquist LA, Mohr CD, Kenny DA. The female positivity effect in the perceptions of others. *J Res Person* 1998;32:370–388.