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An examination of attribute trade and weight stigma in online dating

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An Examination of Attribute Trade and Weight Stigma in Online Dating

by

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Abstract

Weight stigma refers to biased treatment or attitudes based on weight. This has been documented to occur in a variety of settings (including relationships) and can result in many negative consequences, but its impact in the contemporary online dating arena is largely unexplored. Therefore, Study 1 of this project examined who experiences weight stigma in online dating and what factors predicted weight stigma. It was hypothesized that a) women would be more likely than men to experience weight stigma; b) compassion, beliefs about obese persons, attitudes toward obese persons, social dominance orientation, narcissism, objectification, self-classification of overweight status, and internalized weight bias would predict likelihood of engaging in weight bias. Study 2 examined attribute trade theory in weight stigma and online dating. It was hypothesized that a) women would need more positive attributes to mitigate overweight status than would men; b) compassion, beliefs about obese persons, attitudes toward obese persons, social dominance orientation, narcissism, objectification, self-classification of overweight status, and internalized weight bias would moderate the relationship between the proportion of expected profile “hits” and the number of factors present that may potentially mitigate weight bias. Data were analyzed via logistic and multiple regressions. In Study 1, variables that predicted weight stigma included anonymous feedback condition, photo weight status, female gender of participants, and thinking of oneself as overweight. In a final regression model, self-classified weight, feedback condition, attitudes toward obese persons, and self-objectification predicted weight bias above and beyond photo weight status. In Study 2, there were no interaction effects, but there were main effects for mitigating factors, beliefs about obese persons, self-objectification, attitudes toward obese persons, and photo gender. Findings illustrated that weight bias appears to occur in online dating scenarios, though some factors may help offset the weight status of the individual.
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Statement of the Problem

Many Americans struggle with maintaining a healthy weight, and there are many adults with overweight or obesity. Specifically, in 2009–2010, 35.7% of American adults were classified as having obesity (Flegal, Carroll, Kit, & Ogden, 2012). Despite the large number of individuals with overweight or obesity, weight stigma is a pervasive problem that affects people’s lives in many ways and has been called the “final frontier” of acceptable widespread prejudice (Gapinski, Schwartz, & Brownell, 2006). Weight stigma refers to “social devaluation and denigration of people perceived to carry excess weight” (Tomiyama, 2014, p. 8). Weight stigma impacts people in health care, work, and educational settings as well as romantic relationships (Puhl & Brownell, 2006). With the increasing acceptability and popularity of online dating, and the quick nature of judgments people are able to engage in in this venue, online dating may be a new avenue allowing for increased levels of weight stigma. Indeed, early research supports that weight stigma may be more pronounced when conditions are relatively anonymous, as is the case for the internet. In a study of responses to hard-copy personal advertisements, men were more likely to respond to women who disclosed a history of drug problems, than they were to women who identified as obese (Sitton & Blanchard, 1995). Therefore, while it is clear that weight stigma occurs in a variety of settings, and there is good reason to anticipate that it may be prominent in the online dating arena, relatively little is known about the occurrence of weight stigma in online dating. This study aims to explore who is most likely to experience weight stigma in the context of online dating, as well as who may be most likely to engage in stigmatization of others based on weight in online dating. Additionally, this study aims to explore variables that may mitigate weight stigma.
Literature Review

Weight stigma

Weight stigma refers to “social devaluation and denigration of people perceived to carry excess weight” (Tomiyama, 2014, p. 8). Weight stigma occurs in a variety of settings, including work places, health care settings, and relationships (Puhl & Brownell, 2006). For example, individuals with overweight or obesity have reported negative experiences such as low expectations from others (based on weight), negative weight-based comments, and physical barriers.

Prevalence. Weight stigma has been referred to as the “final frontier” of acceptable widespread prejudice (Gapinski, Schwartz, & Brownell, 2006), but how prevalent is this phenomenon? In 1995–1996, the self-reported prevalence of experiencing weight stigma was 7.3% among adults ages 35–74 (Andreyeva, Puhl, & Brown, 2008). The percentage of perceived weight stigma rose to 12.2% between 2004 and 2006. Not only have we become more aware of weight stigma, but BMI has increased in American adults from 1980 to 1999 (Flegal, Caroll, Kit, & Ogden, 2012), thereby putting more people at risk for experiencing weight stigma and related adverse consequences. The prevalence of weight stigma among various classes of obesity is discussed later.

Obesity stigma has been found to be stronger than a variety of other forms of bias, such as bias against gay or Muslim individuals (Latner, O’Brien, Durso, Brinkman, & MacDonald, 2008). Latner and colleagues (2008) also found that weight bias may also be internalized among individuals with overweight or obesity, given that greater BMI was not associated with less weight bias. In other words, having overweight or obesity oneself does not preclude someone from endorsing weight bias. Findings suggest that weight bias is pervasive and more socially acceptable than other types of bias.
**Implicit vs. explicit bias.** Biases, such as those related to weight, can be implicit or explicit in nature. Implicit bias refers to evaluations that occur outside of one’s conscious awareness, while explicit bias refers to evaluations made via conscious self-report (Teachman, Gapiniski, Brownell, Rawlins, & Jeyaram, 2003). This is an important distinction, as what people report and what they actually feel may not always correspond. As such, weight stigma may be far more prevalent than one would garner from explicit reports. One common methodology used to measure implicit attitudes is the Implicit Association Test (IAT). This test involves an implicit measure of “differential association of 2 target concepts with an attribute” (Greenwald, McGhee, & Schwartz, 1998, p. 1464). In other words, participants are asked to first make associations that are expected to be easily accessible (e.g., flower and pleasant). Next, they are asked to make associations that are expected to be less easily accessible (e.g., insect and pleasant), and the time to make the associations is timed. The difference in completion speeds is used as an indication of implicit bias. While the IAT methodology will not be utilized for this study, it is important to review what we know about weight stigma from the IAT.

In a study of anti-fat bias, participants showed strong implicit anti-fat bias (as evidenced by slower reaction times when making positive associations with fat individuals), though there was no evidence of explicit anti-fat bias (Teachman, Gapiniski, Brownell, Rawlins, & Jeyaram, 2003). In comparison to controls, participants who were told that obesity is largely caused by lifestyle factors (i.e., overconsumption of food and lack of exercise) had higher levels of implicit anti-fat bias. Telling participants that obesity was primarily a result of genetic factors did not lower implicit bias levels. In another set of studies, participants read stories of discrimination based on weight, with the goal of eliciting empathy. Compared to a control group, implicit anti-fat bias was not lowered, except for among participants with overweight (Teachman et al., 2003).
In sum, the source to which individuals attribute the cause of obesity may influence implicit anti-fat bias, even if anti-fat bias is not explicitly reported.

The IAT has also been used to explore the relationship between weight bias and the success of weight loss attempts in individuals with overweight or obesity. Participants who demonstrated higher levels of weight bias were more likely to drop out of treatment and lose a smaller amount of weight during the self-help phase of a weight loss program (Carels et al., 2009). This is significant because weight bias may interfere with individuals with overweight or obesity and their attempts to improve their health status. These findings also relate to the concept of internalized weight bias, which is explored later.

**Consequences of weight stigma.** Obesity has been associated with a number of psychological comorbidities, including mood disorders, anxiety disorders, and binge eating disorder (Kalarchian et al., 2007). Individuals who experience weight stigma may cope in a variety of ways, some of which may worsen comorbidities. For example, in a study of how individuals with overweight or obesity experienced and coped with weight stigma, 79% of participants reported using eating as a strategy to cope with weight stigma (Puhl & Brownell, 2006). This may be related to binge eating and increase weight gain, as weight stigma has been shown to be predictive of psychological distress and binge eating in treatment-seeking individuals with obesity (Ashmore, Friedman, Reichmann, & Musante, 2008). Furthermore, psychological distress likely mediates the relationship. One example of psychological distress is experiences of weight stigma, which explained 20% of the variance in binge eating. Just as weight gain can result in weight stigma, weight stigma has been theorized to influence weight gain, which can result in a cycle (Tomiyama, 2014).
Negative self-talk was also a commonly endorsed coping mechanism, cited by 73% of participants (Puhl & Brownell, 2006). As such, negative self-talk may sustain or exacerbate depression, which has also been associated with obesity. For example, some research indicates that obesity is associated with a 25% increase in odds of a mood disorder (Simon et al., 2006). Additionally, depression rates appear to increase as BMI increases (Simon et al., 2008). Despite data suggesting a relationship between obesity and depression, the directionality of the relationship remains unclear. For example, depressive symptoms can include increased appetite and decreased energy levels, which may cause weight gain (APA, 2013). However, some research suggests that depression may be a result of obesity. A review of longitudinal research indicated that subgroups (based on the disorder that emerges first) may exist (Faith et al., 2011). Evidence that obesity precedes depression was stronger than evidence that depression precedes obesity, particularly for women. It is possible that anti-fat societal attitudes may explain part of the relationship between obesity and depression, as experiences of weight stigma may be potential sources of negative thoughts and poor self-esteem.

**Weight stigma in health care professionals.** Individuals with obesity report encountering weight stigma from a variety of sources, and studies have shown that even health care professionals are not exempt from holding anti-obesity attitudes and biases. Physicians have been ranked as a major source of weight stigma, with participants in one study ranking them second only to family members (Puhl & Brownell, 2006). Attitudes toward patients with obesity have also been associated with a negative impact on their treatment. In one study, 45% of physicians endorsed the statement that they have negative reactions regarding the appearance of patients with obesity; the majority of the sample (two-thirds) also reported feeling frustrated by treating patients with obesity (Jay et al., 2009). Lack of confidence in and discomfort with
treating patients with obesity were also associated with each other. Nurses may also hold negative beliefs about obesity. In one study, 34.7% of participants agreed that a lack of will power in relation to food consumption was a cause of obesity (Brown, Stride, Psarou, Brewins, & Thompson, 2007). Only a small percentage of participants (8.2%) agreed that patients with obesity are motivated to change. In a large study of explicit and implicit weight bias among first year medical students, 74% displayed implicit weight bias and 67% displayed explicit weight bias (Phelan et al., 2014). Weight bias was stronger than negative bias against many other groups, including racial minorities, gays, lesbians, and individuals with low incomes. Individual factors that were predictive of implicit and explicit weight bias were lower BMI, male sex, and non-Black race.

Perhaps unsurprisingly, some research shows that participants with overweight or obesity do not trust their primary care providers (PCPs). In an online survey, 21% of participants reported feeling judged by their PCPs on their weight (Gudzunea, Bennetta, Coopera, & Bleich, 2014). Participants who perceived weight-based judgment from their PCPs were less likely than participants who did not perceive such judgment to have high levels of trust in their PCP. In sum, weight stigma may impact many aspects of individuals with obesity’s lives and may serve as a barrier for many individuals to receive adequate health care.

**Weight stigma in work/educational settings.** Weight stigma may also be present in workplace and educational settings. Students in clinical psychology, physician’s assistant, and psychiatric residency programs have reported weight bias embedded within their training. Negative comments toward patients with obesity made by peers were reported by 63% of participants (Puhl, Luedicke, & Grilo, 2014). Similar comments being made by health care professionals were reported by 65% of participants, and 40% of participants reported that
instructors made negative comments about patients with obesity. The vast majority (80%) of students reported feeling confident to treat patients with obesity; however, 36% reported that they expected patients with obesity to engage in treatment noncompliance.

Weight stigma may also occur in psychology graduate school admission decisions. In one study, higher BMI was correlated with more positive adjectives in recommendation letters but was predictive of fewer post-interview offers; this was especially true for female applicants (Burmeister, Kiefner, Carels, & Mushner-Eizenmen, 2013). Overall, in spite of similar credentials and similar to higher quality of letters of recommendations, applicants with higher BMIs were still less likely to receive admission offers, potentially illustrating weight bias.

Workplace situations may also elicit weight bias. For example, in a hypothetical hiring task, photos of women who were at a pre-bariatric weight (i.e., BMI 38-41) were judged less favorably across all selection criteria than in a condition in which the same women were featured at a post-bariatric weight (i.e., BMI 22-24); (O’Brien, Latner, Ebneter, & Hunter, 2012). In another study, participants were asked to rate women of various weights based on the assigned condition: most/least likely to hire, promote, fire, select for adoption, or help following a traffic accident (Swami, Pietschnig, Stieger, Toveé, & Voracek, 2010). Results showed that women who were underweight and women with obesity experienced weight bias across the aforementioned conditions; this was strongest in the hiring condition and weakest in the helping condition.

**Impact of weight in relationships.** Weight has also been explored in relation to relationship quality and satisfaction. In one study, undergraduate women with overweight were less likely to be dating than their peers without overweight (Sheets & Ajmere, 2005). Additionally, men with overweight were more likely to be satisfied in relationships than were
women with overweight. Furthermore, 31.7% percent of students who were in exclusive relationships were told to alter their weight by their partners or made weight-related comments to their partner. Women were more likely to be told to lose weight and men were more likely to be told to gain weight; these individuals reported lower relationship satisfaction than their peers who were not told to alter their weight. In another study, women who had higher BMIs were more likely to report having lower quality relationships than thinner women (Boyes & Latner, 2009). Women with higher BMIs were also more likely to predict that their relationships would end than were women with lower BMIs. Similar relationships between male BMI and relationship quality were not found.

Additionally, marital satisfaction tends to be higher when wives are thinner than their husbands (Meltzer, McNulty, Novak, Butler, & Karney, 2011). This was found in a 4-year longitudinal research study, and was true even when controlling for a variety of potential confounds (e.g., depression, education and income levels, and whether or not the relationship ended in divorce).

Weight stigma appears to impact the evaluation of potential sexual partners, as well. In a study in which undergraduate students were asked to rank order six potential sexual partners (a “healthy” partner, a partner with obesity, a partner in a wheelchair, a partner with mental illness, a partner with sexually transmitted diseases, and a partner with a missing arm; individuals with obesity were ranked last (Chen & Brown, 2012).

**Media portrayals.** Individuals with overweight or obesity are often not afforded dignity when being portrayed in the media. In an analysis of how individuals with overweight or obesity are portrayed in online news videos, the majority of adults with overweight or obesity (65%) and children (77%) were portrayed in a negative manner (Puhl, Peterson, DePierre, & Luedicke,
Negative portrayals included individuals with overweight or obesity being shown as sedentary, wearing ill-fitting clothing, and eating unhealthy foods. It was also common for individuals with overweight or obesity to be portrayed without their faces being visible. Isolated and unflattering shots of specific body parts and shots from the back focusing on excess weight were also prominent. There was an overall lack of positive (and even neutral) depictions of this population. Individuals without overweight or obesity were less likely to be portrayed in negative ways. As such, the media is an avenue by which weight bias can be greatly perpetuated.

Recently, guidelines for portraying individuals with obesity in the media were developed, promoting awareness of weight stigma and sensitivity toward individuals with obesity (http://www.obesityaction.org/wp-content/uploads/Guidelines-for-Media-Portrayals-of-Individuals-Affected-by-Obesity.pdf).

**Access to power.** The political arena is another area in which weight stigma may emerge. In a study of perceived weight status of candidates (rated by participants) and election outcomes (using data from 2008 to 2012 U.S. Senate elections), only 1% of Senate members were judged to have obesity (Sears, Lightbourn, Keen, & Guerra, 2014). Gender differences emerged, with only 16% of women judged to have overweight and 0% had obesity, compared to male U.S. Senate members, 41% of whom had overweight and 1% of whom had obesity. Taken together, these results suggest that weight bias occurs with respect to politics/access to power, and women may be at greater risk than men for weight bias in elections.

**Internalized weight bias.** Just as bias can be explicit or implicit, it can also be directed toward others or oneself. Internalized weight bias (IWB) refers to negative weight bias aimed at the self (Durso & Latner, 2008). In addition to IWB based on traditional self-report, it can also be calculated by measuring the discrepancy between how positively participants with overweight
or obesity rate themselves and how they rate people with obesity in general. Unsurprisingly, participants who rated themselves as having more positive personality traits than the average individual with overweight or obesity were less likely to endorse depressive or binge eating symptoms (Carels et al., 2013). In another study, after controlling for demographic variables, it was found that individuals with overweight or obesity who had greater levels of IWB were more likely to have low self-evaluation; this was in turn predictive of greater depression, anxiety, and health care utilization, as well as lower global health (Hilbert, Braehler, Haueser, & Zenger, 2014).

In addition to beliefs about oneself and people with obesity globally, IWB may be related to particular world beliefs. For example, the “just world belief,” Protestant work ethic, and beliefs about the controllability of weight loss were related to weight stigma (Carels et al., 2009). The “just world belief” refers to the belief that self and others deserve what happens to them (Rubin & Peplau, 1975). Participants who had stronger “just world beliefs” had higher levels of implicit weight bias and were more likely to attribute negative characteristics to people with obesity. The Protestant work ethic refers to the belief that success is a result of hard work and determination (Mirels & Garrett, 1971). Participants with stronger belief in the Protestant work ethic were more likely to attribute negative characteristics to people with obesity (Carels et al., 2009). Participants who believed that obesity is not controllable were less likely to attribute negative characteristics to individuals with obesity. Taken together, these findings suggest that the more obesity is believed to be controllable, the more that individuals are likely to believe individuals with obesity are to blame for their situation and hold anti-fat beliefs, even if they themselves have overweight or obesity.
Factors that contribute to weight stigma. Several factors may be associated with greater likelihood of experiencing or engaging in weight stigma. Such factors include gender, race, social dominance orientation, narcissism, BMI, beliefs about the etiology of obesity, self-classified weight, and objectification.

Gender. While general prevalence rates of self-reported experiences of weight stigma were previously mentioned, women appear to be at greater risk for experiencing weight stigma than men. In a study of self-reported experiences of weight stigma, 10% of women reported experiencing weight stigma between 1995 and 1996; this figure rose to 15.5% between 2004 and 2006 (Andreyeva, Puhl, & Brown, 2008). From 1995 to 1996, 4.1% of men reported experiencing weight stigma, which rose to 8.1% in from 2004 to 2006. The increased risk of experiencing weight stigma for women was even more pronounced for those with BMIs of 30–35, as they were three times as likely to experience weight stigma as males in the same BMI range (Puhl, Andreyeva, & Brownell, 2008).

Race. Attitudes toward weight and obesity may also vary among racial and ethnic groups. In a study comparing weight stigma to the stigmatization of disabilities, college students were asked to rank drawings of same-sex peers based on how well they liked each person (Latner, Stunkard, & Wilson, 2005). The drawings consisted of six adults (one “healthy” adult, one adult with a leg brace and crutches, one adult in a wheelchair, one adult with a missing hand, one adult with a facial disfigurement, and one adult with obesity). The healthy individual was ranked the highest, and the adult with obesity was ranked second to last (the adult with the missing hand was ranked lowest). African American women viewed obesity more positively than African American men or Caucasian participants. Asian American participants also ranked the adult with obesity more highly than did Caucasian participants.
This is in-line with previous research highlighting racial differences in body image and body dissatisfaction in women. For example, African American women often report higher levels of body satisfaction than Caucasian women ($d = 0.28–0.29$), though differences are relatively small and appear to be strongest in the period of the early 20s (Grabe & Hyde, 2006; Roberts, Cash, Feingold, & Johnson, 2006). Other racial groups (such as Caucasian women and Asian American women) tend to have more similar levels of body dissatisfaction ($d = .01$; Grabe & Hyde, 2006).

Some research shows that ideal weight goals may also vary by population. For example, the average baseline BMI in a sample of African American women participating in a weight loss intervention was 38.8 kg/m$^2$ (which is categorized as class II obesity). The average reported ideal weight goal reflected a 29.2% reduction in body weight; despite this large weight reduction, the corresponding BMI (27.2 kg/m$^2$) still falls into the overweight range (Dutton, Martin, & Brantley, 2004). African American men are also more likely to idealize heavier female body shapes than are Caucasian men (Freedman, Carter, Sbrocco, & Gray, 2004). In sum, these studies indicate that cultural factors may influence racial differences in body image, attitudes toward obesity, and ideal weight goals/body types. As such, some groups may be at greater or lower risk for experiencing weight stigma.

**Social dominance orientation.** One factor that has been predictive of prejudice against many groups is social dominance orientation (SDO). SDO refers to the degree to which individuals prefer that their in-group be dominant over other groups (Pratto, Sidanius, Stallworth, Malle, & Bertram, 1994). People high on the trait of SDO are likely to prefer hierarchies in social groups. SDO has been associated with negative attitudes toward women and racial minorities (Pratto, Sidanius, Stallworth, Malle, & Bertram, 1994). Men are more likely than
women to have high levels of SDO. In relation to weight, anti-fat implicit attitudes of physical education students were correlated with SDO and low body esteem (O’Brien, Hunter, & Banks, 2007). This study aims to add to the limited literature regarding SDO and weight stigma.

**Narcissism.** In an exploratory fashion, narcissism may be another variable that is predictive of an individual being more likely to engage in weight stigmatization of others. Narcissism refers to a set of personality traits, that is believed to be characterized by an inflated (yet fragile) sense of self. Additionally, narcissistic individuals possess a sense of entitlement and are often preoccupied with success and receiving admiration from others (see review by Morf & Rhodewalt, 2001). Given that narcissistic individuals tend to view those around them as reflections of themselves, it is likely that such individuals would prefer not to have partners or friends with overweight or obesity. In turn, they may be more likely to engage in weight stigmatization of others.

**Beliefs about the etiology of obesity.** As implied earlier, certain beliefs about the etiology of obesity may lead to weight stigma. For example, after reading information regarding genetic causes of obesity, medical students reported fewer negative stereotypes about a virtual patient with obesity than medical students who read information on a control topic (Persky & Eccleston, 2010). However, their expectations of patient adherence to weight loss advice did not differ from the control group. In another study, 33% of a sample of students in physician’s assistant, clinical psychology, or psychiatric residency programs reported that patients with obesity lacked the motivation to change (Puhl, Luedicke, & Grilo, 2014). It was found that the effect of student level of weight bias affected the expectation for treatment compliance, which was partially mediated by the belief that obesity is caused by behavioral factors. Additionally, one factor that seems to influence the public’s opinions of obesity prevention policies is the perceived etiology
of obesity; individuals are less likely to support policy-level obesity interventions if they believe obesity is caused by a lack of willpower (Barry, Brescoll, Brownell, & Schlesinger, 2009).

**Objectification.** Objectification theory states that the oversexualization and emphasis on appearance faced by women and girls in our society can lead to internalization and self-objectification (Fredickson & Roberts, 1997). In essence, this refers to individuals defining themselves based on their body from third-person perspectives, rather than first-person characteristics that are not related to one’s body or appearance. Self-objectification has been associated with a variety of negative consequences for women, including body shame, restrained eating, and diminished math performance (Frederickson, Roberts, Noll, Quinn, & Twenge, 1998). While men also engage in self-objectification, women are more likely to do so (Strelan & Hargreaves, 2005). Men are also less likely to experience objectification from both men and women. Both men and women, particularly women, who engage in high levels of self-objectification have been found in turn to be more likely to objectify other men and women (Strelan & Hargreaves, 2005). As such, this variable was hypothesized to be of importance in the context of weight stigma in online dating, in that individuals who engage in self-objectification may apply similar appearance-related judgments to others.

**Self-classified weight.** Self-classified weight refers to what weight category individuals consider themselves to be a part of, regardless of the weight category to which they objectively belong. It is often measured via the Multidimensional Body Self-Relations Questionnaire (Cash, 2000), though similar variables are mentioned in the literature, including fat self-schema (Stein, 1996), weight perception (Lee et al., 2005), self-perception of body weight (Siqueira, Appolinário, & Sichieri, 2005), and perception of overweight (Fonseca & Gaspar de Matos, 2005). Regardless of what the variable is called, self-classification as overweight, particularly
when not, is a variable that is associated with a host of negative factors, such as poor body image, dietary restraint, and poor well-being (Cash & Hicks, 1990; Saules et al., 2008). This variable was included in the present study, as it was hypothesized that individuals who classify themselves as having overweight would be more likely to engage in self-objectification and apply rigid standards to others.

**Body Mass Index (BMI).** In an analysis of social networking, an exponential random graph model was used to research the influence of BMI on friend selection, while controlling for other selection variables, including gender, race, grade level, grade point average, depression, and activity participation (Schaefer & Simpkins, 2014). Participants included middle and high school students, and results showed that students with overweight were the least likely to be selected as a friend than students without overweight, though BMI influenced this finding. Students without overweight were 30% more likely to select peers without overweight than peers with overweight as friends. Overall, students with overweight appeared to be indifferent to their friends’ weight status. In this study, BMI was measured because it was hypothesized that it would predict weight bias.

**Mate Selection**

In order to understand how weight stigma may occur in online dating, it is first important to review literature on mate selection more broadly. There are two main theories that pertain to mate selection: the evolutionary psychological perspective and the social roles viewpoint. These theories attribute the mechanisms of mate selection to different sources (i.e., biology versus social influences). Each theory is described, with empirical support for each provided.

**The evolutionary psychological perspective.** One of the most commonly cited theories for mate selection comes from evolutionary psychology. This perspective argues that species
gradually evolve over time in ways that allow members of the species to better adapt to their environment and that it is advantageous to pass on one’s genes through reproduction (Matlin, 2012). One sub-theory that pertains to mate selection is the sexual strategies theory (SST). This theory states that mate selection is based on the evolutionary drive to reproduce (Buss & Schmidt, 1993). Women are presumed to have higher parental investment and thus have more interest in long-term relationships than men. Thus, women should prefer male partners who offer wealth and stability, as those are promising characteristics for caring for offspring. In contrast, SST asserts that men should prefer young, attractive female partners, as youth and attractiveness are supposed signifiers of fertility. These preferences have been found to hold up cross-culturally (Buss, 1989).

In an example of one early study of gender differences in mate selection, the above claims were generally supported. Women were more likely than men to prefer a man who was a good companion, considerate, honest, affectionate, dependable, intelligent, kind, understanding, fond of children, and well-liked by others. They also preferred men who had good earning potential and were ambitious and career-oriented (Buss & Barnes, 1986). Men were more likely to seek a woman who was physically attractive, good looking, frugal, and a good cook. In related research, college men have also shown a preference for women who are physically attractive and who possess strong domestic skills, while college women preferred partners with good financial prospects (Buss & Barnes, 1986; Henry, Helm, & Cruz, 2013).

In the contemporary online dating arena, and again consistent with evolutionary theory, research supports that men are more likely to seek attractive mates and provide status-related information in their personal advertisements to attract such mates, while women are more selective in choosing partners and more likely to value partner status (Sears-Roberts Alterovitz &
Mendelsohn, 2009). In an online survey, women were more likely than men to have high demands for partner characteristics and more likely than men to value a partner with characteristics such as wealth, intelligence, and reliability; men were more likely to value a physically attractive partner with domestic skills (Schwarz & Hasselbrauk, 2012).

In another study, participants were asked to describe themselves and their ideal partners. Women were more likely than men to describe themselves as “outgoing/sociable/extraverted,” “cheerful/optimistic,” and “caring/loving.” Women rated intelligence, stability, conscientiousness, height, education, social skills, and political/religious compatibility significantly higher than males. Men were more likely than women to describe themselves as “intelligent/competent/capable” and “good-looking/attractive.” Men rated looks higher than did women (Furnham, 2009). Additionally, participants were asked to rate positive characteristics and complete a Big Five personality measure. Most individuals sought individuals with characteristics similar to themselves; this was especially true with respect to extraversion and conscientiousness. Political and religious ideology were not rated as very important with regard to perceived compatibility, though the former was rated as more important than the latter. This reflects the idea that men tend to focus more on the physical attractiveness of their partners (presumably as a proxy for health and fertility), while women tend to focus on partner characteristics that represent stability (and presumably the ability to care for offspring).

As youth and attractiveness have been used as signs of fertility, research has shown that an individuals’ own physical attractiveness influences their selection of romantic partners, in that individuals who report higher levels of self-perception were more selective about their partners than individuals with lower levels of self-perception (e.g., Buston & Emlen, 2003). Data collected from a website that allows users to rate pictures of other site members also showed
support for the idea that individuals who were more attractive generally sought out other attractive individuals (Lee, Loewenstein, Ariely, Hong, & Young, 2008). Men were less likely to take into account their own level of attractiveness when seeking a date and more likely than women to take into account the consensus of how attractive potential dates were.

As physical attractiveness is a variable highlighted in SST, phenotype, such as waist-to-hip ratio (WHR), also appears to influence mate selection, both in terms of the desirability of the individual and the level of mate selectivity they employ. WHR refers to a measure of body fat distribution and has been associated with health, attractiveness, and reproductive capacity (see Singh, 1993 for a summary). For example, women with lower WHRs are typically considered to be more attractive than women with higher WHRs (e.g., Singh, 1993). Some research shows that women with lower WHRs are more likely to prefer partners with good resources, while women with higher WHRs were more likely to value physical attractiveness in a potential mate (Pawlowskia & Jasienskad, 2008). Commitment was rated as the most important characteristic in a long-term partner, but the preference for this trait was unrelated to female body morphology; this finding may highlight the importance of this variable for women, harkening back to SST, which states that women are seeking a mate who will be provide for offspring.

In a study of potential variables related to male physical attractiveness, the impact of waist-to-chest ratio, BMI, and WHR were explored in different socioeconomic locations (i.e., urban vs. rural settings; Swami & Toveé, 2005). When rating male images, women did not seem to place emphasis on WHR when seeking men, though in urban settings, a waist-to-chest ratio that reflected an “inverted triangle” was generally preferred. In more rural settings, participants were more likely to value BMI when making attractiveness ratings, preferring heavier figures. These findings reflect the influence of resource scarcity on mate selection.
Female mate selectivity also appears to be more malleable and context dependent than male mate selectivity (Overbeek, Nelemans, Karremans, & Engels, 2013). During a series of “speed dating” experiences, variables such as male-female ratio, which sex approached the other, and the qualities of same-sex competition were measured in relation to the number of declines of dating proposals. Women who had lower levels of facial attractiveness and higher BMIs were less likely to be selective about dating proposals, especially when there was greater competition. Women are believed to be more selective of mate characteristics because of greater parental investment and reproductive costs (Trivers, 1972); however, as previously mentioned, women with less attractive physical appearance may be perceived to be less desirable to others, thereby contributing to their being less selective.

Gender differences have also emerged regarding the preferred age of partners. In a comparison of dater preferences among various age groups (20–34, 40–54, 60–74, 75+), women were more likely to prefer older men until they reached age 75, at which point they preferred younger men (Alterovitz & Mendelsohn, 2009). Men were more likely to seek a partner increasingly younger than themselves as they progressed in age. In another study, participants ages 18–65 who were not in close relationships indicated mate characteristic preferences, including age (Schwarz & Hasselbrauk, 2012). Men accepted a partner 10 years their junior and only 4.5 years their senior. Women accepted partners who were five years their junior to eight years their senior. These findings reflect that men may associate youth with attractiveness, but older age for men might be regarded by women as having had opportunity to garner more resources to support offspring.

**Social roles approach.** The evolutionary psychology theory of mate selection is not without criticism, and some argue that mate preferences are shaped by social upbringing and
circumstance, as men and women tend to occupy different social roles (for a review, see Eagly & Wood, 1999). While the evolutionary approach emphasizes biology as the driving force for mate selection, the social roles approach emphasizes cultural and social factors. For example, women may prefer partners with stable financial resources due to the general comparative lack of resources, rather than genetic predisposition. Support for this theory comes from the finding that women are most likely to prefer partners with financial resources in countries where women tend to have limited reproductive freedom and educational opportunities (Kasser & Sharma, 1999).

In one illustration of the influence of social status on mate selection, men were most interested in the physical attractiveness of their partner during a speed dating experiment; they disliked female ambition and intelligence that exceeded their own. Women placed more importance on potential partner intelligence and race (Fisman, Iyengar, Kaminca, & Simonson, 2006). The level of selectivity that males engaged in did not vary based on group size, while women became more selective in larger groups.

**Summary.** In sum, some patterns of gender differences in preferred mate characteristics have emerged. Men tend to emphasize preferences for women who are young, physically attractive, and domestically skilled. Women tend to report preferring men who can provide financial resources and stability. Evolutionary psychology theorizes this to be because these characteristics will help increase the chances that individuals will successfully reproduce and be able to care for offspring. In contrast, the social roles approach cites cultural and social factors as explanations for mate preferences, such as lack of resources available to women.

**Online dating**

Online dating is becoming an increasingly popular way to meet people, and many meetings eventually lead to marriage. For example, of marriages that took place between 2005
and 2012 in America, 21% of couples met online through a social networking site (Hall, 2014). Those who met this way were likely to be younger, African American, and more recently married. Online dating may be a likely source of weight stigma, given the nature of quick judgments that are made, and as such, weight stigma should be explored in this domain.

**Self-presentation in online dating profiles.** Research has shown that some factors are predictive of more online dating activity. The number of messages sent was the strongest predictor of messages received (Fiore, 2004). For men, other predictors of messages received were age, level of education, and self-rated level of attractiveness. For women, not having overweight, having a photo, and having a self-rated level of attractiveness were predictors of messages received.

Given this pressure, many online daters may struggle with the conflict of wanting to be authentic while also wishing to portray their ideal self in dating profiles. For some, deception and strategic misrepresentation are tactics that may be employed in order to enhance one’s online dating profile. Men have been shown to be more likely to misrepresent their personal assets, relationship goals, interests, and attributes, while women were more likely to misrepresent their weight (Hall, Park, Song, & Cody, 2010). Men between the ages of 20 and 40 were more likely to misrepresent their age than were women; upon age 50, gender differences were no longer noted. Self-monitoring was most strongly and consistently predictive of misrepresentation of online dating profiles. In this context, self-monitoring refers to an impression management style in which an individual intentionally behaves in ways to bring about desired consequences, by carefully monitoring public appearances (Snyder, 1987). Individuals who were high on conscientiousness, agreeableness, and openness to experience were generally less likely to use strategic misrepresentation in their profiles than were individuals lower on these traits.
As deception is commonly employed in user profiles in online dating, online daters are often suspicious of profiles with very attractive photos; this suspicion is also applied to textual information presented in profiles (Lo, Hsieh, & Chiu, 2013). Despite this suspicion, when interacting with attractive online daters, people are likely to be dishonest in ways that presumably enhance themselves and increase the odds of a relationship with that person. Subtle aspects of dating profiles are of importance. For example, misspellings may lead to assumptions regarding lack of education or lack of interest in online dating (Ellison, Heino, & Gibbs, 2006). Cues related to sexuality or interest in sex may also be analyzed. Participants also described carefully managing cues in their own user profiles. Some individuals have expressed altering their profile information or online dating behavior based on feedback from others (e.g., time of day messages were sent, length of messages sent). Similarly, the language individuals use to describe their weight status has an impact on how others perceive them. In a study of ratings of personal advertisements, negative weight descriptors (e.g., "obese," "fat") were most likely to elicit negative ratings (Smith, Schmoll, Konik, & Oberlander, 2007). Positive weight descriptors (e.g., "full-figured") appeared to help negate some of the stigma related to having overweight, though when no weight descriptor was provided in the advertisement, individuals were rated most favorably. Some evidence shows that people may focus on factors about potential partners that are easy to evaluate (e.g., height and weight) more so than characteristics such as occupational and educational status when they are presented with many choices (Lenton & Franesconi, 2010).

Online daters are likely to seek out individuals similar to themselves (Fiore & Donath, 2005). Marital history, desire for children, body type and physical attractiveness, and smoking status were among characteristics for which individuals sought similar partners. This is in-line
with previously mentioned mate selection literature, which also found that individuals sought others who were similar to themselves.

**Attribute Trade**

Attribute trade theory poses that, during mate selection, some individuals may trade high levels of one characteristic for high levels of another. For example, some research shows that individuals with obesity are less likely than normal weight individuals to have physically attractive partners; this is especially true for Caucasian women (Carmalt, Cawley, Joyner, & Sobal, 2008). Some characteristics, however, were able to offset the disadvantage of overweight status for some individuals. Such characteristics included additional education, a more attractive personality, and better grooming. Both genders were found to “trade” education for a physically attractive partner. Even though attribute trade was possible for some, matching physical characteristics was the most common pattern in mate selection. Matching refers to the degree to which partners have similar levels of physical attractiveness, with physically attractive people generally seeking others who are also physically attractive (see Feingold, 1988, for a review).

The current study aims to explore the degree to which attribute trade is possible for individuals with overweight in the context of online dating profiles.

**Pilot Study**

A small qualitative pilot study consisting of semi-structured interviews was conducted to identify any important issues or variables not already gleaned from the existing literature, given that this domain is virtually unstudied. Participants consisted of four (one male and three female) undergraduate students who had participated in online dating. The university’s institutional review board (IRB) approved the pilot study (See Appendix A for IRB approval letter). Participants were recruited via the SONA research system and in-class announcements. De-identified quotes grouped by theme are provided below.
Anti-Fat Bias

“I would not want to date someone who was obese.” —Female

“Yes, I felt judged on my weight. [When I started online dating], I was thin and petite...I’m more hesitant to show a full body picture now, due to weight gain. But, I don’t want to be dishonest; if you meet someone, they will figure it out anyway.” —Female

“I’m not attracted to people who are very heavy or obese, unless it is because they have a medical condition.” —Female

“I wouldn’t want to go on a date with someone who was obese.” —Male

Distrust/Suspicion

“I’m more harsh based on appearance/weight because I don’t know the people on the online dating site.” —Female

“I would not go on a date with someone who did not have a picture.” —Female

“I wanted to see multiple pictures to see if the person looked consistent across pictures.” —Female

“...who was a [drug] addict. She did not put that in her profile.” —Male

Favorable Qualities

“I looked for someone extraverted, generous, kind, funny, tall, charismatic, and perceptive.” —Female

“I look for someone passionate, strong-willed, and determined.” —Female

“I look for someone outgoing, fun, a good sense of humor, laid back, and sarcastic.” —Female

Gender Differences.

“Females tend to read the profile, men care about pictures.” —Female

“Guys are very focused on physical appearance.” —Female

Rationale for the Present Study

While the literature demonstrates that weight bias clearly exists, it is less clear how weight bias occurs in online dating situations, which this study seeks to explore. Social
information processing theory (SIPT) may offer some guidance, as it presents an explanation of how online relationships develop in the absence of nonverbal cues (Walther, 2008). In essence, it is argued that the information typically captured in nonverbal interactions can be translated into verbal interactions, though it may require more time and a larger exchange of messages (compared to in-person interactions) in order for impressions to form (Walther, 1992). Given that this theory argues that true relationships take longer to form via online communication than via in-person communication (where more information is typically available), it may be that individuals with overweight or obesity are more likely to experience weight stigma in an online venue (as people may be less likely to take the time to get to know someone) and take mitigating variables into consideration.

In summary, weight stigma is a pervasive issue found in many domains and has been associated with a number of negative consequences. Weight stigma is worthy of exploration in the realm of online dating, as the anonymous and quick nature of judgments on the internet may increase its likelihood. Next, I outline the methods and hypotheses of the current study, which used two waves of data collection.

**Study 1**

Study 1 examined the occurrence of weight stigma in online dating. This was a between subjects design in which each participant viewed one mock dating profile featuring a photo of the opposite sex. Photos varied across conditions by weight category (thin, average, overweight). For each of the three weight categories, the provided profile information remained the same; the picture varied by weight category as previously mentioned. As such, this involved a cross-sectional design. Conditions also varied based on whether participants were asked to provide feedback regarding the individual in the mock profiles lack of success with online dating as if the
participant was friends with the individual in the mock profile vs. as if the participant’s feedback was completely anonymous.

**Study 2**

Study 2 examined attribute trade theory in relation to weight stigma in online dating using a mixed model design, with one within subjects factor (mitigating factors) and one between subjects factor (gender of photo). The question of interest was how many positive attributes were required in order to mitigate overweight status in online dating profiles. Attribute variables included SES, height, activity level, and temperament. Participants were asked to evaluate 5 profiles of individuals with overweight/obesity (of the opposite sex of the participant), with profiles varying in number of potential mitigating attributes (i.e., no mitigating variable, one mitigating variable, two mitigating variables, three mitigating variables, or four mitigating variables). Participants rated profiles by answering the following question: “Out of 100 people, how many people do you believe will contact the person in this profile?”

**Hypotheses/Analyses**

Based on the aforementioned literature and pilot study, several hypotheses were developed.

**Study 1**

1) It was expected that gender, compassion, social dominance orientation, narcissism, beliefs about the controllability of obesity, attitudes toward obese persons, internalized weight bias (for participants with overweight), self-objectification, objectification of others, and incorrect classification of oneself as overweight would be related to weight stigma (as operationalized as participants indicating that the most likely source of difficulty with online dating for the individual in the mock online dating profile is their weight). These variables were tested via logistic regressions at the bivariate level.
Variables that were significant at the bivariate level were entered into a final regression model. It was hypothesized that the variables that remain significant in the final model would be gender, weight status of the individual in mock online dating profile, beliefs about the controllability of obesity, objectification of others, and feedback condition, thus being the best predictive model of weight stigma. It was also hypothesized that BMI would moderate the relationship between predictors of weight bias and engagement in weight bias. That is, for participants who do not themselves have overweight, the effects of hypothesized mitigating factors (e.g., compassion) and exacerbating factors (e.g., social dominance) would be even more pronounced in predicting weight bias than would be observed among their counterparts with overweight.

2) It was expected that participants providing feedback under the anonymous condition would be more likely to engage in weight stigma. This hypothesis was tested by a 2 (anonymous vs. friend condition) x 2 (overweight vs. other reason) chi square, with the percent of people who identified weight as the primary reason for lack of online dating success of the individual in the profile as the dependent variable.

Study 2

1) It was hypothesized that women in mock profiles would be more likely to receive weight bias than men in mock profiles. This was tested via a multiple regression. It was expected that there would be main effects for photo gender (female) and number of factors (five mitigating factors). The dependent variable was weight bias, as measured by the proportion of expected profile hits. An interaction effect was also expected for gender of photo and mitigating factors, in that women would need a higher number of mitigating
factors than men to have a high proportion of expected hits. Female photo was expected to be a strong predictor of weight bias.

2) It was expected that compassion would moderate the relationship between the proportion of expected profile hits and the number of factors present that may mitigate weight bias. This hypothesis was tested via a multiple regression. A main effect was expected for low compassion. An interaction effect was expected for low compassion and number of mitigating variables, in that participants with low compassion would need a higher number of mitigating variables to expect participants to have a high hit rate. It was expected that low compassion would be a strong predictor of weight stigma.

3) It was expected that social dominance would moderate the relationship between the proportion of expected profile hits and the number of factors present that would potentially mitigate weight bias. This hypothesis was tested via multiple regression. A main effect was expected for high social dominance. An interaction effect was expected for high social dominance and number of mitigating variables, in that participants with high social dominance would need a higher number of mitigating variables to expect participants to have a high hit rate.

4) It was expected that narcissism would moderate the relationship between the proportion of expected profile hits and the number of factors present that may potentially mitigate weight bias. This hypothesis was tested via multiple regression. A main effect was expected for narcissism. An interaction effect is expected for narcissism and number of mitigating variables, in that participants with high narcissism would need a higher number of mitigating variables to expect participants to have a high hit rate.
5) It was expected that beliefs about the controllability of obesity would moderate the relationship between the proportion of expected profile hits and the number of factors present that may potentially mitigate weight bias. This hypothesis was tested via a multiple regression. A main effect was expected for high controllability. An interaction effect was expected for high controllability of obesity and number of mitigating variables, in that participants with high controllability beliefs would need a higher number of mitigating variables to expect participants to have a high hit rate. It was expected that high controllability beliefs would be a strong predictor of weight stigma.

6) It was expected that beliefs about individuals with obesity would moderate the relationship between the proportion of expected profile hits and the number of factors present that may potentially mitigate weight bias. This hypothesis was tested via a multiple regression. A main effect was expected for negative beliefs about individuals with obesity. An interaction effect was expected for negative beliefs about individuals with obesity and number of mitigating variables, in that participants with negative beliefs about individuals with obesity would need a higher number of mitigating variables to expect participants to have a high hit rate. It was expected that negative beliefs about individuals with obesity would be a strong predictor of weight stigma.

7) It was hypothesized that for participants with overweight/obesity, weight bias internalization would moderate the relationship between the proportion of expected profile hits and the number of factors present that may potentially mitigate weight bias. This was tested via a multiple regression. A main effect was expected for high weight bias internalization. An interaction effect was expected for weight bias internalization and number of mitigating variables, in that participants with overweight and high internalized
weight bias would need a higher number of mitigating variables to expect participants to have a high hit rate.

8) It was hypothesized that self-objectification would moderate the relationship between the proportion of expected profile hits and the number of factors present that may potentially mitigate weight bias. This was tested via multiple regression. A main effect was expected for high self-objectification. An interaction effect was expected for high self-objectification and number of mitigating variables, in that participants with high self-objectification would need a higher number of mitigating variables to expect participants to have a high hit rate.

9) It was hypothesized that objectification of others would moderate the relationship between the proportion of expected profile hits and the number of factors present that may potentially mitigate weight bias. This was tested via a multiple regression. A main effect was expected for high objectification of others. An interaction effect was expected for high self-objectification and number of mitigating variables, in that participants with high self-objectification would need a higher number of mitigating variables to expect participants to have a high hit rate. High objectification of others was expected to be a strong predictor of weight stigma.

10) It was expected that classifying oneself as overweight would moderate the relationship between the likelihood of someone contacting the individual in the profile and the number of factors present that may potentially mitigate weight bias. This was tested via a multiple regression. A main effect was expected for classifying oneself as overweight. An interaction effect was expected for classifying oneself as overweight and number of
mitigating variables, in that participants who classify themselves as overweight would need a higher number of mitigating variables to expect participants to have a high hit rate.

**Method**

**Design**

These studies were single-session cross-sectional designs. The aim of Study 1 was to investigate who is most likely to experience weight stigma in the context of online dating as well as to identify variables that are predictive of engaging in weight stigma. The aim of Study 2 was to explore the impact of the number of variables that were required to mitigate the impact of weight stigma in online dating.

**Measures**

**Demographic information.** Participants were asked to report their age, weight, height, gender, sexual orientation, race/ethnicity, employment status, income level, and marital status. See Appendix B.

**Online dating history.** Participant experience with online dating was assessed. Questions inquired whether or not participants have participated in online dating in the past three months. If they answered yes, they were asked which sites they had accounts/profiles with, how recently they logged into said accounts, when they last interacted with someone on an online dating site, when they last interacted with someone from an online dating site in-person, and to what extent they think weight/body shape influences who interacts with them and who they interact with. See Appendix C. This information was assessed in an exploratory fashion in order to have the option of investigating whether or not more experience with online dating is related to being more attuned to weight stigma.

**Mock Profiles.** In Study 1, participants viewed one mock profile of an individual of the opposite sex. Conditions varied by weight category of the individual in the profile (thin, average,
overweight). Photos of the same man and woman were used across conditions, with only weight manipulation via the photo editing application Pixlr (photos of the individuals with overweight were reduced to average and thin body silhouettes); this allowed us to hold other appearance-related variables in the photos constant. In Study 2, participants viewed and rated 5 mock profiles of the opposite sex, which contained information about the individual in the profile regarding height, SES, activity level, and temperament. Profiles information contained various combinations of attractive or unattractive qualities; profiles also varied based on the number of attractive qualities. Designing the profiles was an iterative process, involving input from the principal investigator’s research lab mates (who coded presence or absence of attributes in each profile), to help ensure the intended attributes were accurately being captured. Photos were the same across conditions and featured individuals with overweight. Mock profiles can be found in Appendix D.

**Social Dominance Orientation Scale (SDOS).** The Social Dominance Orientation Scale is a 16-item measure of an individual’s degree of preference for inequality among social groups (Pratt, Sidanius, Stallworth, & Malle, 1994). Responses are scored on a 7-point Likert-type scale ranging from *very negative* to *very positive*. Items 9–16 are reverse scored. In a sample of college students, the scale was found to be internally consistent (α = .91; Pratt, Sidanius, Stallworth, & Malle, 1994). The SDOS correlated with a scale of sexism, *r* = .51. This measure was used in this study to predict engaging in weight stigma toward others. The SDOS can be found in Appendix E.

**Unconditional Compassion Scale (UCS).** The UCS consists of 14 items that assess subjective feelings of warmth and caring, actions related to compassion, and appraisals (Catak, 2014). The scale has three factors: Helping Motivation, Emotional Understanding, and
Interpersonal Acceptance. Items are scored on a 6-point Likert-type scale ranging from 1 (not true of me at all) to 6 (very true of me). Scores can range from 14–84, with higher scores reflecting higher levels of unconditional compassion. The UCS is internally reliable (α = .88). The UCS was correlated with social connectedness (r = .25, p < .001), empathy (r = .43, p < .001), and eudaimonic well-being (r = .20, p < .001). This measure was used in this study to assess if individuals with higher levels of unconditional compassion were less likely to engage in weight stigma than those with low levels of unconditional compassion. See Appendix F.

**Stunkard Figure Rating Scale.** Participants were asked to view the Stunkard Figure Rating Scale (Stunkard, Sørensen, & Schulsinger, 1983), which contains multiple body weight silhouettes, ranging from individuals who are underweight to individuals with obesity; there are male and female figures available. Participants were asked to indicate which body shape reflects their actual body type and which body shape reflects their ideal body weight. Previous research has developed BMI anchors for each shape (Reslan, Wiedemann, & Saules, 2011). Past research in our laboratory has included work involving discrepancy between real and ideal selves. Therefore, we included this variable, though it is not associated with a specific hypothesis in the current study. See Appendix G.

**Beliefs About Obese Persons Scale (BAOPS).** The BAOPS is an eight-question survey that assesses beliefs about the causes of obesity. Items are rated on a 6-point Likert-type scale, ranging from +3 (I strongly agree) to -3 (I strongly disagree; Allison, Basile, & Yuker, 1991). Items 1, 3–6, and 8 are reverse scored. The total is summed and 24 is added to the score (to bring the score range to 0–48 and thereby prevent negative scores). Scores range from 0 to 48, with higher scores being reflective of the belief that obesity is not controllable by the individual. Research indicates the alpha reliability coefficient ranges from .65 to .82 (Allison, Basile, &
Yuker, 1991; Puhl & Brownell, 2006). This measure was included in the present study in order to assess if individuals who believe that obesity is controllable were more likely to engage in weight stigma. See Appendix H.

**Attitudes Toward Obese Persons Scale (ATOPS).** The ATOPS is a 20-item measure that assesses anti-fat bias (Allison, Basile, & Yuker, 1991). Items are rated on a 6-point Likert-type scale, ranging from +3 (*I strongly agree*) to -3 (*I strongly disagree*). Items 2–6, 10–12, 14–16, and 19–20 are reverse scored. After the total is calculated, 60 is added to the score. Scores can range from 0 to 120; higher scores indicate more positive views toward obese persons. In a sample of adults, Cronbach’s α was 0.76 (Puhl & Brownell, 2006). This measure was included in the present study in order to assess if individuals who have anti-fat attitudes were more likely to engage in weight stigma. See Appendix I.

**Weight Bias Internalization Scale (WBIS).** The WBIS is an 11-item measure that measures the internalization of weight bias (Durso & Latner, 2008). Answers are rated on a 7-point Likert-type scale, which ranges from *strongly disagree* to *strongly agree*. High scores on the measure reflect higher levels of internalized weight bias; this measure is designed to be used with individuals with overweight. The scale has high internal consistency, Cronbach’s α = 0.90, (Durso & Latner, 2008). Weight bias internalization was correlated with anti-fat attitudes (r = 0.31). The WBIS partially correlated with self-esteem (r = −0.67), drive for thinness (r = 0.47), and body image concern (r = 0.75), after controlling for BMI (Durso & Latner, 2008). This measure was included in order to assess if individuals with overweight/obesity internalized weight bias were more likely to engage in weight stigma in the present study. A screener question was asked in order to direct participants to the WBIS if necessary (“Do you consider yourself to be overweight?”); participants who answered “yes” were directed to complete the
WBIS using skip logic, while participants who answered “no” were directed to the end of the survey. See Appendix J.

**The Self-Objectification Questionnaire.** The Self-Objectification Questionnaire is a 10-item measure that assesses concern about appearance, with a judgmental component found in other measures (Noll & Frederickson, 1998). Participants are asked to rank 10 body attributes, with 0 having the least impact on physical self-concept and 9 reflecting the body attribute that has the greatest impact on physical self-concept. The measure is scored by subtracting the sum of the competence items (Items 1, 2, 4, 7, and 9) from the sum of the appearance items (Items 3, 5, 6, 8, and 10). Scores may range from -25 to 25. Higher scores represent higher levels of appearance emphasis and are interpreted as greater trait self-objectification. For women, BMI was unrelated to self-objectification ($r = .01$, ns). For men, BMI correlated with self-objectification, but only marginally so ($r = .29$, $p = .09$; Noll & Frederickson, 1998). The instructions to the measure have also been modified slightly to measure objectification of others (Strelan & Hargreaves, 2005). These measures were used in the current study to evaluate whether self-objectification and objectification of others were predictive of weight stigmatization of others. See Appendices K & L.

**The Multidimensional Body Self-Relations Questionnaire—Appearance Scale (MBSRQ-AS).** Components of body image were assessed in this study using the Multidimensional Body Self-Relations Questionnaire—Appearance Scale (MBSRQ-AS; Cash, 2000). The MBSRQ-AS is a 34-item subscale that is part of the full MBSRQ. Five scales comprise the MBSRQ-AS (Appearance Evaluation, Self-Classified Weight, Overweight Preoccupation, Appearance Orientation, and the Body Areas Satisfaction Scale) that measure cognitive and affective aspects of body image. In order to focus on the variables of most interest
and reduce participant burden, an abbreviated version of the MBSRQ-AS was used in this study. This included thirteen items from three subscales (Appearance Evaluation, Self-Classified Weight, and Overweight Preoccupation items), as they were of the most interest to the current research aims. The excluded subscales (Appearance Orientation, which measures the importance an individual places on their appearance, and the Body Areas Satisfaction Scale, which assesses satisfaction with individual body areas) were not expected to be predictive of weight stigma above and beyond the included subscales.

The Appearance Evaluation subscale measures feelings of physical attractiveness and level of appearance satisfaction. Items are presented with a 5-point Likert-type scale, with higher scores reflecting lower levels of dissatisfaction with regard to appearance evaluation. The published MBSRQ manual cites internal consistencies for the Appearance Evaluation subscale of .88 for both men and women. For men, test-retest reliability was .81. For women, test-retest reliability was .91.

The Self-Classified Weight subscale measures how participants view their weight, with options ranging from very underweight to very overweight. Items are presented using a 5-point Likert-type scale, with higher scores reflecting greater dissatisfaction. The published MBSRQ manual states that internal consistencies for the Self-Classified Weight subscale are .70 for men and .89 for women. For men, test-retest reliability was .86. For women, test-retest reliability was .74.

The Overweight Preoccupation subscale measures fat anxiety, weight vigilance, dieting, and eating restraint. Items are presented using a 5-point Likert-type scale, with higher scores reflecting greater levels of dissatisfaction with regard to overweight preoccupation. The published MBSRQ manual states that internal consistencies for the Overweight Preoccupation
subscale are .73 for men .76 for women. For men, test-retest reliability was .79. For women, test-retest reliability was .89. This measure was included in order to assess if the aforementioned weight perception problem variable is predictive of weight stigma. Only one item from the self-classified weight subscale, used in previous work (Saules et al., 2009), was used in relation to study hypotheses; the other variables were included for exploratory purposes. See Appendix M.

**Patient Health Questionnaire (PHQ-9).** The Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001) is a section of the Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PRIME-MD; Spitzer et al., 1994). The PHQ-9 uses 9 items that screen for depression and assess symptom severity. Respondents are asked, “Over the last 2 weeks, how often have you been bothered by any of the following?” An example item is “feeling bad about yourself or that you are a failure or have let yourself or your family down.” Items are scored on a 4-point Likert-type scale (0 = Not all, 1 = several days, 2 = more than half the days, 3 = nearly every day) with no reverse scored items. Scores can range from 0 to 27. Higher scores reflect higher levels of depression; scores of 5–9 indicate mild depression, scores of 10–14 indicate moderate depression, scores of 15–19 indicate moderately severe depression, and scores of 20–27 indicate severe depression. The internal reliability of the PHQ-9 was found to be high in a primary care sample (α = .89) and an obstetrics-gynecology sample (α = .84) (Kroenke, Spitzer, & Williams, 2001). Test-retest reliability was assessed over a 48-hour period (r = .84). Depression severity scores on the PHQ-9 and the Brief Beck Depression Inventory (Brief-BDI; Schmitt, & Maes, 2000) were correlated (r = .73) in a general population sample (Martin, Rief, Klaiberg, & Braehler, 2006). This measure was included should we wish to explore depression for exploratory analyses. See Appendix N.
The Narcissistic Personality Inventory-16 (NPI-16). The Narcissistic Personality Inventory-16 is a shortened version of the NPI-40 and measures narcissism (Ames, Rose, & Anderson, 2006). The measure uses a 16-item forced choice question format. Narcissistic responses are scored as 1 and non-narcissistic responses are scored as 0. The total is computed and divided by 16. Scores can range from 0–16, with higher scores indicating higher levels of narcissism. Internal consistency was good (α = .72). The NPI-16 and NPI-60 were highly correlated (r = .90; Ames, Rose, & Anderson, 2006). Test-retest reliability over a 5-week period was good (r = .85; Ames, Rose, & Anderson, 2006). Discriminant validity was demonstrated by a low correlation (r = .05) with self-cooperativeness ranking (Ames, Rose, & Anderson, 2006). This measure was included to assess if narcissism was predictive of weight bias. See Appendix O.

The Eating Disorder Examination Questionnaire (EDE-Q). The Eating Disorder Examination Questionnaire (EDE-Q) is a self-report version of the Eating Disorder Examination (Cooper & Fairburn, 1987; Fairburn & Cooper, 1993). This measure provides both total and subscale scores (shape concern, weight concern, eating concern, and restraint). The measure’s validity and reliability properties have been documented (Fairburn & Beglin, 1994; Mond, Hay, Rodgers, Owen, & Beumont, 2004a; Mond, Hay, Rodgers, Owen, & Beumont, 2004b). This measure was included should we wish to explore eating behaviors in exploratory analyses. See Appendix P.

Procedures

Recruitment for both Study 1 and Study 2. Participants were recruited from undergraduate psychology courses at EMU through the SONA research system and by contacting course professors or attending classes to announce the study. When visiting
classrooms, an explanation of the study was briefly presented, and students were directed to the SONA system or survey link. The SONA system contained a brief description of the study. This included participant eligibility requirements (e.g., being at least 18 years of age), approximate study duration, extra credit information, researcher contact information, and a link to the survey. The survey was designed and hosted using SurveyMonkey (www.SurveyMonkey.com), which is an internet-based vendor used for deploying surveys. Once participants clicked on the link for the study, they were directed to the informed consent page. This page included explanations of the study purpose, confidentiality protections, the voluntary nature of participation (i.e., participants were able to discontinue the survey at any time with no penalty), foreseeable risks (i.e., the potential for uncomfortable thoughts or emotions), benefits of participation (i.e., no direct benefits, but benefits to individuals that have experienced weight stigma in online dating experiences), and compensation. The contact information of the principal investigators was also included in the consent form, in case participants desired a summary of study results or had questions about the study (see Appendix Q). This project was approved by the university IRB (see Appendix R). Participants demonstrated their consent to participate by clicking an “I agree” button at the bottom of the informed consent page and/or clicking the “next” button, prior to accessing the survey. Participants were informed that their responses would be kept confidential, as their responses were not connected to identifying information.

Procedures specific to study 1

Following informed consent, a demographics questionnaire, and a selection of which gender they are most attracted to, participants were asked to indicate which range the last two digits of their cell phone number belonged to (i.e., 00–17, 18–33, 34–49, 50–65, 66–81, 82–99). This was used to assign participants (through skip logic) to a particular condition (regarding
weight status of the person in the mock profile, as well as whether participants were asked to provide feedback on the profile as if the person was their friend versus anonymously).

Participants were then asked to view and answer questions regarding a mock online dating profile, online dating history, the Unconditional Compassion Scale, the Stunkard Figure Rating Scale, the Beliefs About Obese Persons Scale (BOAPS), the Attitudes Toward Obese People (ATOP) Scale, the Self-Objectification Questionnaire (SOQ), a modified version of the Self-Objectification Questionnaire (OOQ; to measure objectification of others), self-classified weight (based on one item from an abbreviated version of the Multidimensional Body Self-Relations Questionnaire-Appearance Scale), the Patient Health Questionnaire (PHQ-9) depression scale, the Narcissistic Personality Inventory-16, the Eating Disorder Examination Questionnaire, the Weight Bias Internalization Scale (if they indicated thinking that they are overweight), and the Social Dominance Orientation Scale. Once these measures were completed, participants were directed to a separate survey to provide their information for extra credit, if their instructors offered it.

Via skip logic, participants were directed to evaluate a mock online dating profile after indicating what gender they were most attracted to. Participants who selected both or neither were directed to complete the remaining measures, without the evaluating a mock profile; this was due to the inability to select one profile to view. Under the pictures, the profile text read:

“Hi, my name is Ryan/Sara. I just moved to the area and am looking to meet new people. I’m pretty busy with work, but when I have free time, I like to go to the movies, read, watch TV, or go for bike rides. I’m an animal lover, so I hope you like cats! I’m a little shy at first, but once you get to know me, you’ll see that I’m kind, smart, and actually pretty funny. If my profile sparks your interest, feel free to send me a message!” Conditions varied based on feedback
circumstance, with one group being asked to provide feedback as if the person in the profile was the participant’s friend. The other condition was asked to provide feedback on the profile as if they were completely anonymous. Below the mock profiles, questions read: “Ryan/Sara is not having any luck with online dating. Which of the following reasons do you believe is causing him/her trouble? Please answer as if Ryan/Sara were a close friend of yours (i.e., the “Friend” condition) or as if your feedback were completely anonymous (Anonymous condition). Please select all answers that you feel apply.” Participants were provided with fixed choices to select (e.g., “Ryan/Sara noted that he/she is shy,” “Ryan/Sara is overweight”). The next question read: “Please select the most likely reason Ryan/Sara is not having success with online dating. Please answer as if Ryan/Sara were a close friend of yours/as if your feedback were completely anonymous.” Participants were provided with the same fixed choices to select as in the previous question. Participants were also asked to rate the level of attractiveness of the photo they viewed.

**Procedures specific to study 2.** The methodology for Study 2 was the same as Study 1 (aside from assignment to weight and feedback conditions), though in that study, participants reviewed five mock profiles. Profile pictures remained constant across conditions (all individuals had overweight), with only profile information varying; profiles varied based on the number of mitigating variables that may offset weight status (zero, one, two, three, or four variables). Mitigating variables consisted of SES, height, activity level, and temperament. After viewing each mock profile, participants were asked: “Out of 100 people, how many people do you believe will contact the person in this profile?”

**Data Analyses**

Data were analyzed using SPSS version 21 statistical software along with the PROCESS Macro (Preacher & Hayes, 2008). Upon completion of data collection, data was examined and duplicate ID codes were removed in order to minimize the chance of duplicate data (with the first
completed entry kept and subsequent entries deleted) prior to analyses. For analyses which involved an assumption of normally distributed data, data were inspected for skew and kurtosis. Skew and kurtosis were mild to moderate when present. Data were not transformed due to the robust nature of the analyses (i.e., bootstrapping moderation). Additionally, deviations from normality are of less concern in large sample sizes (Tabachnick & Fidell, 2001; Waternaux, 1976 as cited in Tabachnick & Fidell, 2001). The SPSS 21 missing data program’s Estimated Maximum Likelihood procedure was used to ensure that data were missing completely at random. Based upon this analysis, data appeared to missing at random and listwise deletion was used when data were missing.

**Dependent variables.** The dependent variable in both Study 1 and Study 2 was participant ratings of the mock profiles, particularly with regard to weight bias. In Study 1, participants were asked to rate the most likely reason for mock profile individuals’ lack of success in online dating (conditions varied based on weight level and anonymity level of the feedback; profile information remained constant). The dependent variable was the likelihood of identifying an individual’s weight as the primary source of lack of online dating success (a dichotomous variable—weight vs. all other reasons). In Study 2, participants were asked to rate how many people (out of 100) they believed would contact the individual in the profile (profile information in Study 2 varied based on the number of positive mitigating attributes present; weight level was held constant).

**Independent variables.** The independent variables in both Study 1 and Study 2 were scores on the Beliefs About Obese Persons Scale, Attitudes Toward Obese Persons Scale, Unconditional Compassion Scale, the Social Dominance Orientation Scale, the Narcissistic Personality Inventory-16, the Self-Objectification Questionnaire, a modified version of the Self-
Objectification Questionnaire (measuring objectification of others), and the Weight Bias Internalization Scale. Additionally, in Study 1, feedback condition (Friend versus Anonymous), actual weight status of the individual in the photo (Thin, Average, Overweight), and photo gender were independent variables. In Study 2, gender and number of mitigating factors were also independent variables.

Results

Study 1

Participants. All volunteers who were at least 18 years old were able to participate, but analyses for this project were limited to heterosexual participants (88% of valid cases), in order to reduce the complexity of sexual orientation variables in the study. Analyses were also limited to participants who correctly completed the validity check (i.e., “Please select the number 2”) to improve the quality of the data. Finally, analyses were also limited to participants who identified as male or female (rather than transgender or preferring not to answer), as there were not enough participants in these other groups to support statistical analyses.

In Study 1, the initial sample size was 1,599. After deleting participants who did not correctly complete the validity check, there were 1,334 participants. After limiting the sample to heterosexual participants, 1,178 participants remained. (Note: There was an unexpectedly high percentage of non-heterosexual participants, but as sexual orientation was not a planned focus of the study, and the order of deletion of invalid/duplicate cases made back tracking impractical, these participants were excluded from analyses.) Following removal of duplicate ID codes (in which the first ID was kept and subsequent entries were deleted), the sample size was 1,126. After limiting the sample to those who identified as male or female, the final sample size was 1,120.
The majority of participants were female (72.1%), White (64.6%), and single (82.5%).

The mean age was $21.33 \pm 5.59$ and the mean BMI was $25.83 \pm 6.08$, falling into the overweight range. Please see Table 1 for more information about participant characteristics.

Table 1

Study 1 Participant Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (% female)</td>
<td>807 (72.1%)</td>
</tr>
<tr>
<td>Race (% white)</td>
<td>711 (64.6%)</td>
</tr>
<tr>
<td>Age</td>
<td>$21.33 \pm 5.59$</td>
</tr>
<tr>
<td>Education (years)</td>
<td>$13.75 \pm 1.72$</td>
</tr>
<tr>
<td>BMI</td>
<td>$25.83 \pm 6.08$</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>Married, remarried, or living with partner</td>
<td>161 (14.5%)</td>
</tr>
<tr>
<td>Single</td>
<td>922 (82.5%)</td>
</tr>
<tr>
<td>Divorced or separated</td>
<td>18 (1.6%)</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>17 (1.5%)</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
</tr>
<tr>
<td>Working part time (regular hours)</td>
<td>412 (36.8%)</td>
</tr>
<tr>
<td>Economic status</td>
<td></td>
</tr>
<tr>
<td>Barely enough to get by</td>
<td>71 (6.4%)</td>
</tr>
<tr>
<td>Enough, but no more</td>
<td>276 (24.7%)</td>
</tr>
<tr>
<td>Solidly middle class</td>
<td>458 (41.0%)</td>
</tr>
<tr>
<td>Plenty of extras</td>
<td>178 (15.9%)</td>
</tr>
<tr>
<td>“Luxuries”</td>
<td>41 (3.7%)</td>
</tr>
<tr>
<td>Don’t know/unsure/prefer not to say</td>
<td>92 (8.2%)</td>
</tr>
<tr>
<td>Annual household income</td>
<td></td>
</tr>
<tr>
<td>&gt;150 thousand</td>
<td>77 (6.9%)</td>
</tr>
<tr>
<td>100–149 thousand</td>
<td>131 (11.7%)</td>
</tr>
<tr>
<td>75–99 thousand</td>
<td>140 (12.5%)</td>
</tr>
<tr>
<td>50–74 thousand</td>
<td>142 (12.7%)</td>
</tr>
<tr>
<td>25–49 thousand</td>
<td>142 (12.7%)</td>
</tr>
<tr>
<td>10–24 thousand</td>
<td>115 (10.3%)</td>
</tr>
<tr>
<td>&lt;9 thousand</td>
<td>56 (5.0%)</td>
</tr>
<tr>
<td>Don’t know/unsure/prefer not to say</td>
<td>314 (28.1%)</td>
</tr>
</tbody>
</table>

*Values are expressed as n(%) or $M \pm SD$. N = 1,120 except for age ($n = 1,117$), education ($n = 1,100$), employment ($n = 1,119$), economic status ($n = 1,116$), income ($n = 1,117$), and BMI ($n = 1,108$).*
Independent sample t-tests were performed to test for significant differences in attractiveness ratings of profile pictures between White and non-White participants. Only one of 12 tests was significant, in which White participants \((M = 2.57, SD = 1.15)\) rated the photo more highly than non-White participants \((M = 2.12, SD = 1.16)\), \(t(125) = 2.10, p < .05\). After conducting a Bonferroni correction, the result was no longer significant. As such, racial differences in attractiveness did not appear to play a significant role in ratings of attractiveness and were not further explored in this study.

Means and standard deviations for the measures linked to hypotheses can be found in Table 2.

Table 2

*Study 1 Main Measure Means and Standard Deviations*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Possible Score Range</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconditional Compassion Scale</td>
<td>14–84</td>
<td>68.68</td>
<td>10.00</td>
</tr>
<tr>
<td>Beliefs about Obese Persons Scale</td>
<td>0–48</td>
<td>17.07</td>
<td>6.63</td>
</tr>
<tr>
<td>Attitudes toward Obese Persons Scale</td>
<td>0–120</td>
<td>64.25</td>
<td>15.97</td>
</tr>
<tr>
<td>Self-Objectification Questionnaire</td>
<td>-25–25</td>
<td>0.11</td>
<td>11.97</td>
</tr>
<tr>
<td>Objectification of Others Questionnaire (men)</td>
<td>-25–25</td>
<td>2.47</td>
<td>12.00</td>
</tr>
<tr>
<td>Objectification of Others Questionnaire (women)</td>
<td>-25–25</td>
<td>6.23</td>
<td>12.31</td>
</tr>
<tr>
<td>Narcissistic Personality Inventory-16</td>
<td>0–1</td>
<td>0.30</td>
<td>0.19</td>
</tr>
<tr>
<td>Weight Bias Internalization Scale</td>
<td>11–77</td>
<td>42.75</td>
<td>16.38</td>
</tr>
<tr>
<td>Social Dominance Orientation Scale</td>
<td>16–112</td>
<td>36.74</td>
<td>17.26</td>
</tr>
</tbody>
</table>

*Note:* UCS \((n = 1,055)\), BAOP \((n = 1,097)\), ATOP \((n = 1,066)\), SOQ \((n = 900)\), OOQm \((n = 974)\), OOQw \((n = 956)\), NP1-16 \((n = 1,066)\), WBIS \((n = 485)\), SDOS \((n = 1,023)\).

A correlation matrix was computed for numeric variables of interest. See Table 3.
Table 3

Correlation Coefficients for Study 1 Numeric Variables

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. BMI</td>
<td>--</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. UCS</td>
<td>0.01</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. BAOPS</td>
<td>0.30</td>
<td>-0.03</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. ATOPS</td>
<td></td>
<td>0.09*</td>
<td>0.16*</td>
<td>0.31*</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. SOQ</td>
<td>0.00</td>
<td>-0.02</td>
<td>-0.02</td>
<td>-0.12*</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. OOQm</td>
<td></td>
<td>-0.00</td>
<td>-0.06</td>
<td>-0.03</td>
<td>-0.10*</td>
<td>0.43*</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. OOQw</td>
<td></td>
<td>-0.02</td>
<td>-0.02</td>
<td>-0.02</td>
<td>-0.11*</td>
<td>0.40*</td>
<td>0.56*</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. NPI-16</td>
<td>0.02</td>
<td></td>
<td>-0.14*</td>
<td>-0.03</td>
<td>-0.14*</td>
<td>0.06</td>
<td>0.02</td>
<td>0.01</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>9. WBIS</td>
<td>0.09</td>
<td>0.00</td>
<td>-0.03</td>
<td>-0.29*</td>
<td>0.23*</td>
<td>0.18*</td>
<td>0.17*</td>
<td>-0.16*</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>10. SDOS</td>
<td>-0.06</td>
<td></td>
<td>-0.02</td>
<td>-0.32*</td>
<td>-0.01</td>
<td>-0.02</td>
<td>-0.00</td>
<td>0.26*</td>
<td>0.10</td>
<td>--</td>
</tr>
</tbody>
</table>

Note. N = 1120, WBIS n = 485. *p < .05, **p < .01

Analyses were conducted to identify variables associated with weight bias. A t-test was conducted to test if participants who had engaged in online dating were more likely to engage in weight bias. The t-test revealed that there were no significant differences in weight stigma between participants who had participated in online dating in the last three months and those who had not, t(1104) = 0.62, p = 0.54.

Several chi-square analyses were performed to test which categorical variables were associated with weight bias (i.e., selecting the mock online dating individual’s overweight status as the main reason for their lack of success with online dating). There was a significant association between feedback condition (Friend vs. Anonymous) and weight bias, with those in the anonymous condition selecting weight status more frequently as the reason for lack of
success in online dating, $\chi^2 (1) = 8.903, p < .01$. There was also a significant association between
figure type (actual weight status of the individual in the profile photo) and weight bias, with the
participants viewing the photos of individuals with overweight selecting weight as the most
frequent reason, $\chi^2 (2) = 55.151, p < .001$. Gender was also significantly associated with weight
bias, with women being most likely to select weight, $\chi^2 (1) = 76.921, p < .001$. Self-classified
weight (i.e., overweight vs. not) was also significantly associated with weight bias, with
participants who believed they themselves were overweight selecting weight most frequently,
$\chi^2 (1) = 5.592, p < .05$. Please see Figures 1–4 for visual representation of percentages of each
group endorsing weight as the main reason for lack of online dating success.

![Figure 1. Percentage endorsing weight main reason as a function of feedback condition
Significant difference, $p < .01$.](image)
Figure 2. Percentage endorsing weight main reason as a function of photo weight status. Significant difference, $p < .001$.

Figure 3. Percentage endorsing weight main reason as a function of participant gender. Significant difference, $p < .001$. 
Figure 4. Percentage endorsing weight main reason as a function of participant perceived weight status. Significant difference, $p < .05$.

To further test what variables predicted weight bias, a series of binary logistic regression analyses were performed. Figuretype(1) refers to comparison of average relative to thin profile picture weight condition. Figuretype(2) refers to comparison of overweight relative to thin profile picture weight condition. Feedback refers to anonymous vs. friend feedback conditions. Significant predictors included participant gender; females endorsing more weight bias (OR = 0.28, CI = 0.20–0.37); attitudes toward obese persons (OR = 0.99, CI = 0.98–1.00); beliefs about obese persons (OR = 0.98, CI = 0.96–1.00); self-objectification (OR = 1.02, CI = 1.01–1.03); objectification of others (women; OR = 1.01, CI = 1.00–1.02); self-classified weight (OR = 1.33, CI = 1.05–1.69); figure type; Figuretype(1) OR = 1.47, CI = 1.08–1.99; Figuretype(2) OR = 2.98, CI = 2.21–4.01); and feedback condition (OR = 1.44, CI = 1.13–1.82), as entered individually. All indicators that predicted weight bias at the bivariate level also significantly predicted weight bias above and beyond actual weight status of the individual photo; however, in the self-objectification model, figuretype(1) was just below significance.
The final model included figure type (thin/average/overweight) in Step 1 and attitudes toward obesity, self-objectification, feedback condition, self-classified weight in Step 2, all of which remained significant. See Table 4. When the final model included BAOPS (instead of ATOPS) or OOQ women, the two variables were not significant. BAOPS was entered separately, given its high correlation with the ATOPS. The two measures assess separate, but similar concepts, with the BAOPS assessing beliefs about the causes of obesity, while the ATOPS assesses beliefs about obese people more generally. Gender was not included in the final model, as it is likely that the significant results of the gender chi-square were due to differences in photo attractiveness. The mean attractiveness for female photos was significantly higher ($M = 4.36, SD = 1.38$) than that of male photos ($M = 2.43, SD = 1.17$), $t(484.22) = -21.70, p < .001$.

Additionally, independent samples t-tests indicated no significant gender differences on the BAOPS, ATOPS, or OOQ mean scores. However, women had significantly higher mean WBIS scores ($M = 44.20, SD = 16.32$) than men ($M = 36.51, SD = 15.20$), $t(483) = -4.10, p < .001$. Women also had significantly higher mean SOQ scores ($M = 1.09, SD = 11.82$) than men ($M = -2.31, SD = 12.02$), $t(898) = -3.88, p < .001$. That is, women may be more likely to internalize weight bias, though they were not be more likely than men to engage in weight bias against others.

As seen in Table 4, with every one point increase on the SOQ, there was a 2% increased likelihood of weight bias. Relative to the Friend condition, in the Anonymous feedback condition, there was a 35% increased likelihood of weight bias. Endorsing thinking that one was overweight was associated with a 55% increased chance of weight bias. On the ATOPS (on which higher scores reflect positive views toward individuals with obesity), every 1 point
increment predicted a 2% lower chance of weight bias. The percentage of variance in the
dependent variable that the final model captures is 12.5%, based on the Nagelkerke $R^2$ value.

Table 4

**Study 1 Final Model Predicting Weight Bias**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>OR</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>48.20</td>
</tr>
<tr>
<td>Figuretype(1)</td>
<td>0.42</td>
<td>0.18</td>
<td>5.34</td>
<td>1.53</td>
<td>1.07–2.20</td>
<td>0.02</td>
</tr>
<tr>
<td>Figuretype(2)</td>
<td>1.21</td>
<td>0.18</td>
<td>45.90</td>
<td>3.37</td>
<td>2.37–4.78</td>
<td>0.00</td>
</tr>
<tr>
<td>Self-classified Weight</td>
<td>0.44</td>
<td>0.15</td>
<td>9.10</td>
<td>1.55</td>
<td>1.17–2.06</td>
<td>0.00</td>
</tr>
<tr>
<td>Feedback (1)</td>
<td>0.30</td>
<td>0.15</td>
<td>4.23</td>
<td>1.35</td>
<td>1.01–1.80</td>
<td>0.04</td>
</tr>
<tr>
<td>SOQ</td>
<td>0.02</td>
<td>0.01</td>
<td>7.88</td>
<td>1.02</td>
<td>1.00–1.30</td>
<td>0.01</td>
</tr>
<tr>
<td>ATOPS</td>
<td>-0.02</td>
<td>0.01</td>
<td>13.32</td>
<td>0.98</td>
<td>0.97–0.99</td>
<td>0.00</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.05</td>
<td>0.33</td>
<td>0.03</td>
<td></td>
<td></td>
<td>0.87</td>
</tr>
</tbody>
</table>

*Note.* SOQ = Self-objectification Questionnaire, ATOPS = Attitudes toward Obese Persons Scale

Due to the fact that only participants who indicated thinking that they were overweight
were administered the Weight Bias Internalization Scale, a separate set of binary logistic
regression analyses were performed. During the initial series of bivariate logistic regression
analyses, only figuretype(2) (OR = 2.92, CI = 1.88–4.55), SOQ (OR = 1.02, CI = 1.00–1.04),
and WBIS (OR = 1.01, CI = 1.00–1.02) significantly predicted weight main reason. In the next
regression analysis, which tested whether or not SOQ and WBIS predicted weight main reason
above and beyond figure type, both factors remained significant when entered separately. When
added together in the final model predicting weight main reason, SOQ and WBIS were not
significant. See Table 5.
Table 5

Study 1 Final Model Predicting Weight Bias in Internalized Weight Bias Sample

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>OR</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure type</td>
<td></td>
<td></td>
<td>18.68</td>
<td></td>
<td></td>
<td>0.00</td>
</tr>
<tr>
<td>Figuretype(1)</td>
<td>0.25</td>
<td>0.27</td>
<td>0.83</td>
<td>1.28</td>
<td>0.75–2.17</td>
<td>0.36</td>
</tr>
<tr>
<td>Figuretype(2)</td>
<td>1.06</td>
<td>0.26</td>
<td>17.17</td>
<td>2.88</td>
<td>1.75–4.76</td>
<td>0.00</td>
</tr>
<tr>
<td>WBIS</td>
<td>0.01</td>
<td>0.01</td>
<td>2.19</td>
<td>1.01</td>
<td>1.00–1.02</td>
<td>0.14</td>
</tr>
<tr>
<td>SOQ</td>
<td>0.02</td>
<td>0.01</td>
<td>3.73</td>
<td>1.02</td>
<td>1.00–1.04</td>
<td>0.05</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.96</td>
<td>0.35</td>
<td>7.33</td>
<td>0.39</td>
<td></td>
<td>0.01</td>
</tr>
</tbody>
</table>

Study 2

Participants. The same inclusion criteria from Study 1 was used in Study 2. Initially, 574 participants began the survey. After removal of those who did not correctly complete the validity check, 522 participants remained. Next, heterosexual participants were selected, leaving 469 participants. After duplicate ID codes were removed, 461 participants remained. Finally, the sample was limited to male or female participants, with the final sample being 457 participants.

The sample included in Study 2 was comprised of 457 participants. Participants were primarily Caucasian (70.1%), female (68.3%), and single. The mean age of the sample was 21.09 ± 5.11 and the mean BMI was 25.67 ± 5.79 (in the overweight range). See Table 6 for a summary of participant characteristics.
Table 6

**Study 2 Participant Characteristics**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (% female)</td>
<td>323 (70.1%)</td>
</tr>
<tr>
<td>Race (% white)</td>
<td>310 (68.3%)</td>
</tr>
<tr>
<td>Age</td>
<td>21.09 ± 5.11</td>
</tr>
<tr>
<td>Education (years)</td>
<td>13.76 ± 1.62</td>
</tr>
<tr>
<td>BMI</td>
<td>25.67 ± 5.79</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>Married, remarried, or living with partner</td>
<td>61 (13.4%)</td>
</tr>
<tr>
<td>Single</td>
<td>376 (82.5%)</td>
</tr>
<tr>
<td>Divorced or Separated</td>
<td>11 (2.4%)</td>
</tr>
<tr>
<td>Widowed</td>
<td>1 (0.2%)</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>7 (1.5%)</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
</tr>
<tr>
<td>Working part time (regular hours)</td>
<td>170 (37.2%)</td>
</tr>
<tr>
<td>Economic status</td>
<td></td>
</tr>
<tr>
<td>Barely enough to get by</td>
<td>23 (5.1%)</td>
</tr>
<tr>
<td>Enough, but no more</td>
<td>123 (27.1%)</td>
</tr>
<tr>
<td>Solidly middle class</td>
<td>194 (42.7%)</td>
</tr>
<tr>
<td>Plenty of extras</td>
<td>66 (14.5%)</td>
</tr>
<tr>
<td>“Luxuries”</td>
<td>13 (2.9%)</td>
</tr>
<tr>
<td>Don’t know/unsure/prefer not to say</td>
<td>35 (7.7%)</td>
</tr>
<tr>
<td>Annual household income</td>
<td></td>
</tr>
<tr>
<td>&gt;150 thousand</td>
<td>27 (5.9%)</td>
</tr>
<tr>
<td>100–149 thousand</td>
<td>51 (11.2%)</td>
</tr>
<tr>
<td>75–99 thousand</td>
<td>54 (11.8%)</td>
</tr>
<tr>
<td>50–74 thousand</td>
<td>59 (12.9%)</td>
</tr>
<tr>
<td>25–49 thousand</td>
<td>57 (12.5%)</td>
</tr>
<tr>
<td>10–24 thousand</td>
<td>50 (11.0%)</td>
</tr>
<tr>
<td>&lt;9 thousand</td>
<td>25 (5.5%)</td>
</tr>
<tr>
<td>Don’t know/unsure/prefer not to say</td>
<td>133 (29.2%)</td>
</tr>
</tbody>
</table>

*Values are expressed as n(%) or M ± SD. *N = 457 except for BMI (n = 452), age (n = 453), education (n = 453), marital status (n = 456), economic status (n = 454), and income (n = 456).

The means and standard deviations for measures linked to hypotheses in Study 2 can be found in Table 7.
Table 7

*Means and Standard Deviations of Variables of Dependent Variables in Study 2*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Possible Score Range</th>
<th>Sample Mean</th>
<th>Sample SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconditional Compassion Scale</td>
<td>14–84</td>
<td>68.06</td>
<td>10.41</td>
</tr>
<tr>
<td>Beliefs about Obese Persons Scale</td>
<td>0–48</td>
<td>17.19</td>
<td>7.22</td>
</tr>
<tr>
<td>Attitudes toward Obese Persons Scale</td>
<td>0–120</td>
<td>63.86</td>
<td>15.73</td>
</tr>
<tr>
<td>Self-Objectification Questionnaire</td>
<td>-25–25</td>
<td>-0.85</td>
<td>11.62</td>
</tr>
<tr>
<td>Objectification of Others Questionnaire (men)</td>
<td>-25–25</td>
<td>-0.70</td>
<td>11.17</td>
</tr>
<tr>
<td>Objectification of Others Questionnaire (women)</td>
<td>-25–25</td>
<td>5.64</td>
<td>12.06</td>
</tr>
<tr>
<td>Narcissistic Personality Inventory-16</td>
<td>0–1</td>
<td>0.31</td>
<td>0.20</td>
</tr>
<tr>
<td>Weight Bias Internalization Scale</td>
<td>11–77</td>
<td>42.94</td>
<td>16.45</td>
</tr>
<tr>
<td>Social Dominance Orientation Scale</td>
<td>16–112</td>
<td>38.39</td>
<td>17.66</td>
</tr>
</tbody>
</table>

*Note:* UCS (n = 430), BAOP (n = 449), ATOP (n = 428), SOQ (n = 342), OOQm (n = 363), OOQw (n = 371), NP1-16 (n = 434), WBIS (n = 187), SDOS (n = 417).

A correlation matrix was computed for the numeric variables of interest in Study 2. See Table 8.
Table 8

*Correlation Coefficients for Numeric Variables Study 2*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. BMI</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. UCS</td>
<td>0.06</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. BAOPS</td>
<td>0.01</td>
<td>-0.06</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. ATOPS</td>
<td>0.06</td>
<td>0.18*</td>
<td>0.32*</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. SOQ</td>
<td>-0.01</td>
<td>-0.09</td>
<td>0.05</td>
<td>-0.08</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. OOQm</td>
<td>-0.09</td>
<td>-0.10</td>
<td>-0.01</td>
<td>-0.09</td>
<td>0.43*</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. OOQw</td>
<td>0.03</td>
<td>-0.04</td>
<td>-0.03</td>
<td>-0.14</td>
<td>0.36*</td>
<td>0.51*</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. NPI-16</td>
<td>0.04</td>
<td>0.18*</td>
<td>-0.05</td>
<td>-0.20*</td>
<td>0.09</td>
<td>0.05</td>
<td>0.09</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. WBIS</td>
<td>0.08</td>
<td>-0.02</td>
<td>-0.14</td>
<td>-0.14</td>
<td>0.05</td>
<td>0.09</td>
<td>0.12</td>
<td>-0.21*</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>10. SDOS</td>
<td>-0.07</td>
<td>0.42*</td>
<td>-0.05</td>
<td>-0.29*</td>
<td>0.15*</td>
<td>0.13</td>
<td>0.00</td>
<td>0.31*</td>
<td>0.04</td>
<td>--</td>
</tr>
</tbody>
</table>

*Note. N = 457, WBIS N= 187. p < .05, *p < .01*

In order to explore any potential racial differences in mean expected profile hits, a series of independent samples t-tests was conducted, comparing White and non-White participants. Of 10 t-tests, 2 showed significant racial differences in mean profile hit rating, with non-White participants predicting more profile hits than White participants, \( t(182.39) = -6.08, p < .05 \) and \( t(169.97) = -2.25, p < .05 \). As such, non-White participants did not appear to respond less favorably to the White stimulus photos, and racial differences in mean profile hit ratings will not be explored further.

Prior to conducting moderation analyses with the Hayes (2008) Process macro, the database was restructured so that the repeated measures variable (expected number of hits per
profile) could be included in the model. This involved creating a variable for number of mitigating factors, resulting in five lines of data (one per profile viewed) for each participant. As such, the n for each analysis conducted is multiplied by 5 and only regression analyses that involved the mitigating factors variable were performed in this version of the database. During a statistical consultation with Dr. Chong Man Chow, it was recommended that regression predictors be centered, as it makes it easier to interpret main effects; this was also used for categorical variables, which were dummy coded. The option for heteroscedasticity-consistent standard errors was also selected.

The purpose of running a series of multiple regression analyses was to test the relationship between the number of mitigating effects present in a mock online dating profile and the number of expected profile hits, as well as the influence of potential moderators. Potential moderators were based on the variables that predicted weight bias in Study 1 that were also present in Study 2 (i.e., ATOPS, BAOPS, gender, SOQ, OOQwomen, and SCW).

Results revealed significant main effects for mitigating factors and BAOP score, but the interaction effect between the two variables was not significant. As BAOP score increased (reflecting less weight stigma/stronger beliefs that obesity is not under the person with obesity’s control), so did the number of expected profile hits. As number of mitigating factors increased, so did the number of expected profile hits. The variables accounted for a significant amount of the variance in expected profile hits, $R^2 = .11$, $F(3, 2116) = 93.62, p < .01$. See Table 9 and Figure 5.
Table 9

Beliefs About Obese Persons Main Effect on Number of Expected Profile Hits

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
<th>p</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>37.12</td>
<td>0.45</td>
<td>83.15</td>
<td>0.00</td>
<td>36.25–38.00</td>
</tr>
<tr>
<td>BAOP</td>
<td>0.29</td>
<td>0.06</td>
<td>4.62</td>
<td>0.00</td>
<td>0.17–0.42</td>
</tr>
<tr>
<td>Mitig. factors</td>
<td>5.03</td>
<td>0.31</td>
<td>16.04</td>
<td>0.00</td>
<td>4.42–5.65</td>
</tr>
<tr>
<td>Interaction</td>
<td>0.05</td>
<td>0.04</td>
<td>1.06</td>
<td>0.29</td>
<td>-0.04–0.14</td>
</tr>
</tbody>
</table>

Figure 5. Main effects of beliefs about obese persons and mitigating factors on the number of expected profile hits. BAOP = beliefs about obese persons. MF = mitigating factors. BAOP main effect significance level, \( p < .01 \). Mitigating factor main effect significance level, \( p < .01 \).

There were also main effects for mitigating factors and SOQ, but the interaction effect between the two variables was not significant. As Self Objectification score increased, so did the number of expected profile hits. As number of mitigating factors increased, so did the number of expected profile hits. The variables accounted for a significant amount of the variance in predicted profile hits, \( R^2 = .12, F(3, 1690) = 76.93, p < .01 \). See Table 10 and Figure 6.
Table 10

**Self-Objectification Questionnaire Main Effects on Number of Expected Profile Hits**

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
<th>p</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>37.06</td>
<td>0.50</td>
<td>73.73</td>
<td>0.00</td>
<td>36.08–38.05</td>
</tr>
<tr>
<td>SOQ</td>
<td>0.18</td>
<td>0.04</td>
<td>4.14</td>
<td>0.00</td>
<td>0.09–0.26</td>
</tr>
<tr>
<td>Mitig. factors</td>
<td>5.19</td>
<td>0.35</td>
<td>14.63</td>
<td>0.00</td>
<td>4.49–5.88</td>
</tr>
<tr>
<td>Interaction</td>
<td>0.03</td>
<td>0.03</td>
<td>1.01</td>
<td>0.31</td>
<td>-0.03–0.09</td>
</tr>
</tbody>
</table>

*Figure 6.* Main effects of self-objectification and mitigating factors on the number of expected profile hits. SOQ = self-objectification questionnaire. MF = mitigating factors. SOQ main effect significance level, $p < .01$. Mitigating factor main effect significance level, $p < .01$.

With regard to the model with OOQwomen, there was a significant main effect for mitigating factors, but no significant main effect for OOQwomen and no significant interaction effect between the two variables. As number of mitigating factors increased, so did the number of expected profile hits. The variables accounted for a significant amount of the variance in predicted profile hits, $R^2 = .11$, $F(3, 1830) = 74.65$, $p < .01$.

In the moderation model including Self-Classified Weight, there was a main effect for mitigating factors was present. As number of mitigating factors increased, so did the number of
expected profile hits. There was no significant main effect for SCW, nor a significant interaction effect between the two variables. The variables accounted for a significant amount of the variance in predicted profile hits, $R^2 = .11$, $F(3, 1830) = 74.65$, $p < .01$.

There were significant main effects for mitigating factors and ATOP score. As ATOP score increased (reflecting decreased weight bias/more positive attitudes toward persons with obesity), so did the number of expected profile hits. As number of mitigating factors increased, so did the number of expected profile hits. There was no significant interaction between the two variables. The variables accounted for a significant amount of the variance in predicted profile hits, $R^2 = .12$, $F(3, 2111) = 94.37$, $p < .01$. See Table 11 and Figure 7.

Table 11

<table>
<thead>
<tr>
<th>Attitudes toward Obese Persons Scale Main Effect on Number of Expected Profile Hits</th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
<th>p</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>36.90</td>
<td>0.46</td>
<td>80.50</td>
<td>0.00</td>
<td>36.00–37.80</td>
</tr>
<tr>
<td>ATOP</td>
<td>0.17</td>
<td>0.03</td>
<td>5.79</td>
<td>0.00</td>
<td>0.11–0.22</td>
</tr>
<tr>
<td>Mitig. factors</td>
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<td>0.32</td>
<td>15.62</td>
<td>0.00</td>
<td>4.40–5.66</td>
</tr>
<tr>
<td>Interaction</td>
<td>0.01</td>
<td>0.02</td>
<td>0.27</td>
<td>0.79</td>
<td>-0.03–0.04</td>
</tr>
</tbody>
</table>
Figure 7. Main effects of attitudes toward obese persons and mitigating factors on the number of expected profile hits. ATOP = attitudes toward obese persons. MF = mitigating factors. ATOP main effect significance level, \( p < .01 \). Mitigating factor main effect significance level, \( p < .01 \).

There were also significant main effects for mitigating factors and photo gender. There was no significant interaction between the two variables. For women, there was a higher number of expected profile hits. As number of mitigating factors increased, so did the number of expected profile hits. The variables accounted for a significant amount of the variance in predicted profile hits, \( R^2 = .14, F(3, 2256) = 135.08, p < .01 \). See Table 12 and Figure 8.

Table 12

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
<th>p</th>
<th>CI</th>
</tr>
</thead>
<tbody>
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<td>0.44</td>
<td>80.05</td>
<td>0.00</td>
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<td>Pic_gen</td>
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<td>1.02</td>
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</tr>
<tr>
<td>Interaction</td>
<td>-1.35</td>
<td>0.72</td>
<td>-1.86</td>
<td>0.06</td>
</tr>
</tbody>
</table>
Figure 8. Main effects of photo gender and mitigating factors on the number of expected profile hits. MF = mitigating factors. Photo gender main effect significance level, $p < .01$. Mitigating factor main effect significance level, $p < .01$.

To further explore the effect of photo gender on expected profile hits, an independent samples t-test was conducted to measure differences in mean expected profile hit rating of male and female photos. The mean rating of all five female photos was higher than the mean of all five male photos, $t(446) = -4.90, p < .001$. A follow-up series of independent t-tests was also conducted comparing the mean rating of each photo based on photo gender. For each of the five profiles, participants rated a higher number of expected hits for female profiles than male profiles. For the profile with no mitigating factors, the woman had a higher mean of expected hits, $t(182.39) = -6.08, p < .001$. For the profile with one mitigating factor (money), the woman had a higher mean of expected hits, $t(204.07) = -4.85, p < .001$. For the profile with two mitigating factors (money and height), the woman had a higher mean of expected hits, $t(449) = -3.81, p < .001$. For the profile with three mitigating factors (money, height, and activity level), the woman had a higher mean of expected hits, $t(449) = -3.58, p < .001$. Finally, for the profile
with four mitigating factors (money, height, activity level, and temperament), the woman had a higher mean of expected hits, \( t(450) = -2.95, p < .01 \). See Figures 9–13.

![Figure 9](image1.png)

*Figure 9.* Profile 1 differences in expected profile hits by photo gender. Significant difference, \( p < .001 \).

![Figure 10](image2.png)

*Figure 10.* Profile 2 differences in expected profile hits by photo gender. Significant difference, \( p < .001 \).
Figure 11. Profile 3 differences in expected profile hits by photo gender. Significant difference, $p < .001$.

Figure 12. Profile 4 differences in expected profile hits by photo gender. Significant difference, $p < .001$. 
Discussion

The aim of this project was to explore weight stigma in the realm of online dating. More specifically, Study 1 examined the presence of weight stigma in online dating as well as variables related to engaging in weight stigma. Study 2 investigated attribute trade theory in the context of online dating. This involved assessing if potential mitigating factors (high SES, desirable height, attractive activity level, and positive temperament) offset weight stigma for individuals with obesity in online dating profiles. Both studies involved a college population and focused on heterosexual participants.

Study 1

Overall, the results of Study 1 indicate that weight stigma is likely to occur in online dating scenarios for individuals with obesity. Mock online dating profile conditions varied by sex of the featured individual (male or female), weight status of the featured individual (thin, average, or overweight), and participant feedback type (instructing participants to provide feedback as if it was anonymous or as if they were friends with the individual in the profile). The
weight stigma variable of primary interest was the extent to which participants thought that weight was the primary reason the candidate was having difficulty with online dating. Specifically, participants were asked to choose the most likely reason for the individual in the profile’s lack of successful online dating experiences from a list if choices (including the individual’s weight).

Results from the feedback condition showed that weight bias was more likely to occur in the anonymous condition than in the friend condition. In other words, participants were more likely to indicate that the individual in the mock profile’s lack of success with online dating was due to their weight when the participant was instructed to respond as if their feedback was anonymous. With these strong results found in a simple hypothetical manipulation, it seems likely that the relatively anonymous nature of online dating interactions would heighten the likelihood of weight stigma occurring, relative to other dating situations where anonymity is not assured. Our findings are in-line with research indicating that anonymity affects interactions in other online venues, such as online blog commenters being more aggressive than their non-anonymous counterparts (Zimmerman & Ybarra, 2016). The literature on cyberbullying may also provide insight into how anonymity may influence online behavior. Given that cyberbullying can happen in a variety of venues, such as text messages and social media sites (Whittaker & Kowalski, 2015), it is reasonable to believe it can occur in online dating situations, as well. Among college-aged participants, 18.2% reported experiencing cyberbullying in the previous year. Anonymity has also been shown to mediate the relationship between frequency of instant messaging and cyberbullying (Barlett, 2015). In essence, anonymity in online interactions seems to embolden people to engage in negative behaviors that cannot be easily traced back to
their true identity. Thus, when online dating users have a relative level of anonymity, it likely increases weight stigma.

Similarly, the actual weight status of the individual in the mock online dating profile photo was significantly associated with weight bias, as expected. As the weight status of the individual increased, so did the likelihood of participants selecting weight as the most likely reason for the candidate’s lack of success with online dating. Research has shown that weight can affect attractiveness ratings, including increased facial adiposity being associated with lower attractiveness ratings when there are changes of least 2.38 kg/m² for women and 2.59 kg/m² for men (Re & Rule, 2016). Previous research has also indicated that for female adolescents, having a higher BMI was associated with being rated as unattractive as opposed to very attractive; this relationship was typically nonsignificant for male adolescents (Richmond, Austin, Walls, & Subramanian, 2012). The effects of gender is further discussed below.

Gender was significantly associated with weight bias, though not in the hypothesized direction. Women were more likely to engage in weight bias towards male candidates, whereas it was hypothesized that they would be more likely than men to actually experience weight bias. Some research suggests that men have stronger levels of prejudice against individuals with obesity than do women, as well as higher levels of weight bias (Magalleres & Morales, 2013; Puhl et al., 2015). Our unsupported hypothesis may be due in part to weight status manipulation issues and general attractiveness rating differences between the male and female photos. We suspect that the “thin” condition of the male photo was less successfully manipulated than that of the female photo, meaning it was more difficult to digitally slim the photo of the male. Additionally, mean attractiveness ratings for profile photos were higher for the photos of our
female candidate versus our male candidate, suggesting that weight and overall attractiveness were confounded in our manipulation.

Another important aspect that may explain the findings related to gender in this study involves gender differences in frequency of online contact. For example, women send four times fewer messages than men do in online dating arenas (Kreager, Cavanagh, Yen, & Yu, 2014). This disparity in the amount of expected online dating contact between men and women may outweigh the expectation of increased likelihood of women being the recipient of weight bias. In this study, there were no gender differences among participants with regard to mean beliefs about obese persons, attitudes toward obese persons, or objectification of others scores. However, women did have higher weight bias internalization and self-objectification scores. This seems to indicate that women may not be more likely than men to engage in weight bias against others, though they may be more likely than men to internalize weight bias. This is unsurprising, given the climate of constant media scrutiny of female bodies. For example, female celebrity bodies are routinely dissected in gossip magazines and other media. While men’s bodies are also criticized, mixed messages are promoted in such venues, with women alternately criticized and praised for being thin (McDonnell & Lin, 2016). This is in-line with research showing that both underweight and individuals with obesity are most prone to experiencing weight bias, especially women (Sikorski, Spahlholz, Hartlev, & Riedel-Heller, 2016).

Gender differences in weight stigma experiences extend to quality of life and health care. Health care discrimination is higher for individuals with severe obesity. However, women are twice as likely as men to endorse experiences of weight-based discrimination in health care settings, regardless of their weight status (Hansson, Näsland, & Rasmussen, 2010). The ways in which obesity may impact one’s quality of life appears to also vary by sex and race (Wee, Davis,
Chiodi, Huskey, & Harnel, 2015). For example, Caucasian women rated obesity-related social stigma as the most important factor related to their quality of life; quality of life domain choices were obesity-related (i.e., physical functioning, self-esteem, sexual life, public distress, and work). For Hispanic men and women, work life was most important. Additionally, research indicates that early experiences may contribute to weight stigma and lower quality of life. Specifically, experiences of childhood maltreatment increase the risk for perceived weight stigma in women (Udo & Grilo, 2016). Perceived weight stigma may also be connected to weight gain, and thus further experience of weight stigma. This suggests that the intersection of various personal identities and experiences is important to consider when assessing risk for weight stigma.

Racial differences in participant ratings of photo attractiveness were also explored as some evidence suggests that people are more open to intra-racial dating than inter racial dating, particularly women (Hwang, 2013). Some research has also indicated that profiles with White-stereotypic information are rated as more attractive than those with Black-stereotypic information (Alhabash, Hales, Baek, & Oha, 2014). The mock profiles in this study were limited to photos of White individuals in order to limit the complexity of race on the results. Our findings indicated minimal racial differences in ratings of attractiveness of the profile photos. When racial differences did emerge, White participants provided higher ratings than non-White participants, though these differences did not exist after applying a Bonferroni correction.

Self-Classified Weight (classifying oneself as overweight or not) was also significantly associated with weight bias, as participants who indicated thinking that they were overweight were more likely to engage in weight bias than those who did not believe that they were overweight. Overestimating self-classified weight is associated with a number of negative
behaviors, such as dieting, fasting, using diet pills, vomiting, using laxatives, depression, stress, and more screen time (Lim & Wang, 2013; Martin et al., 2014; Sutin & Teerracciano, 2015). As such, when one overestimates their weight, they may be likely to engage in maladaptive behaviors, many of which include dangerous attempts to lose weight. There is also support indicating that women are more likely to overestimate their weight while men are more likely to underestimate their weight (e.g., Andrade, Raffaelli, Teran-Garcia, Jerman, & Garcia, 2012; Martin, Fricsco, & May, 2009; Lim & Wang, 2013). The implications of these gender differences are that women are more likely than men to internalize the thin ideal and as a result, may be more likely to overestimate their weight, and be at risk for the aforementioned negative consequences. Men, on the other hand, may be at greater risk for negative obesity-related consequences due to not viewing one’s weight correctly.

Results are mixed with regard to the relationship between weight misperception and future risk of obesity (Sutin & Teerracciano, 2015; Sonneville, et al., 2015). Youth who incorrectly classified themselves as overweight were at risk for future obesity, while those with overweight or obesity who classified themselves as having a healthy weight were not. These findings may indicate the underestimating one’s weight may actually serve as a protective factor against future obesity. Less research on the subject has focused on men, though one study found that 25% of men with overweight or obesity underestimated their weight, when using measures of adiposity, using dual energy x-ray absorptiometry (DXA). Weight misperception was operationalized as men having DXA body fat percentage ≥ 25% and describing themselves as being underweight or “about the right weight” (Lewis, Dutton, & Affuso, 2015). This has important implications, as rates differed by race. Weight misperception was highest for Mexican American men, followed by African American men, and Caucasian men. Future studies should
further examine how misclassification of their weight may affect men’s health and psychological well-being. Health professionals should also use this information to identify men who are at the greatest risk for negative consequences of obesity due to underestimating their weight.

It was hypothesized that compassion would be significantly and inversely related to weight bias. However, a significant relationship between the two variables did not exist. Scores on the Unconditional Compassion Scale in this sample indicated that, overall, individuals are likely to view themselves as highly compassionate. The mean total score in this sample was 68.68 ± 10, though scores can range from 14–84. This scale may be subject to the influence of social desirability, priming people to answer more favorably than may be accurate. It may also be possible that the broad construct of compassion is less important when predicting weight stigma when more targeted constructs are included, such anti-fat attitudes. For example, research has shown that anti-fat attitudes influence the degree of support for “punitive” public policy regarding obesity, even when controlling for variables such as views about the controllability of obesity (Berg, Lin, Hollar, Walker, & Erikson, 2016).

While compassion for others was not significantly linked with weight bias in this study, some previous research suggests that self-compassion may be relevant when working clinically with individuals with obesity. For example, self-compassion has been linked with healthy behaviors (Sirois, Kitner, & Hirsch, 2014). In fact, self-compassion has been shown to partially mediate the relationships between self-stigma and physical and mental health variables, such as depression, somatic symptoms, and health status (Hilbert et al., 2015). As compassion was not significantly related to weight stigma in this study, other potential variables of interest will be discussed below.
Social distance may be an important construct that peripherally relates to compassion. Social distance refers to “the extent to which individuals are willing to interact or associate with others that differ from their own group” (Bogardus, 1925 as cited in Sikorski et al., 2015 p. 26). The relationship between BMI and social distance is mediated by sympathy and incomprehension (i.e., lack of understanding regarding why an individual is affected by obesity), in that participants with higher BMIs have higher levels of sympathy and lower levels of incomprehension and thus lower levels of social distance from individuals with obesity than do participants with lower BMIs (Sikorski et al., 2015). One area in which obese individuals experience the most rejection involves social interactions, such as introducing someone to a friend or a person with obesity marrying into the family. Feelings of disgust and contempt are also associated with prejudice against individuals with obesity, which is linked with social distance (Vartanian, Trewartha, & Vanman, 2016; Wirtz, Joop van der Pligt, & Doosje, 2016). These variables should be explored in future studies with regard to their impact on weight stigma in the online dating realm.

Contrary to our hypothesis, higher levels of Social Dominance Orientation were not significantly associated with weight bias. Social dominance orientation refers to the extent to which an individual supports inequality among various social groups (Pratto, Sidanius, Stallworth, & Malle, 1994). Once again, the mean social dominance orientation score in this sample was 36.74±17.26, which is on the lower bound of possible scores, which can range from 16–112 (Pratto, Sidanius, Stallworth, & Malle, 1994). Some research has found a correlation between higher SDOS scores and higher levels of anti-fat prejudice (O’Brien, Latner, Ebneter & Hunter, 2013). Anti-fat prejudice was measured using the universal measure of bias (Latner, O’Brien, Durso, Brinkman, & MacDonald, 2008). This method variance may have influenced
these differences in results, in that the UMB may be less susceptible to social desirability, and thus may provide a more accurate estimate of anti-fat prejudice (Latner, O’Brien, Durso, Brinkman, & MacDonald, 2008). However, one study indicated that when beliefs about obese persons was used as the measure of weight bias in a Hierarchical Linear Regression measuring the effect of social dominance orientation, health locus of control, and gender on obesity bias, social dominance orientation, health locus of control, and gender were not significant (Kelly & Stapleton, 2015). As such, beliefs about obese persons may better capture the issue of weight stigma than does social dominance orientation, as social dominance orientation did not seem to add to the variance explained by beliefs about obese persons.

Contrary to our hypothesis, higher levels of narcissism were not significantly associated with weight bias. This may reflect that the mean narcissism score in the sample was .30 ± .19, toward the lower end of the possible score range (0–1) and that participants may have been again been influenced by social desirability or lack of insight. Additionally, narcissism has been researched in terms of its relationship to one’s own body image (e.g., Lipowska & Lipowski, 2015; Swami, Cass, Waseem, & Furham, 2015; Thomaes & Sedikides, 2015), but to our knowledge, little to no research has explored the impact of one’s own narcissism on views toward the weight of others. Empirical studies are needed to better understand the relationship.

In this study, variables that were significantly predictive of weight bias were entered into a logistic regression model. When objectification of others (women) was included in the model, the variable was not significant; the other variables were attitudes toward obesity, self-objectification, feedback condition, and self-classified weight. This may be attributed to conflicting findings regarding the relationship between self and other objectification (Kozak, Frankenhauser, & Roberts, 2009; Zurbriggen, Ramsey, & Jaworski, 2011). In the final regression
model, attitudes toward obese persons, self-objectification, self-classified weight, and feedback condition (anonymous vs. friend) predicted weight bias above and beyond figure type (actual weight status). This indicates that most of the variables that were more directly related to weight were the most predictive of weight bias. Other forms of individual differences (narcissism, social dominance orientation, compassion) appeared to be less impactful. These findings have very important implications, as there does not appear to be a set of specific personality characteristics that is associated with an individual being likely to engage in weight bias. Instead, it is promising that weight stigma seems to be based on more socially determined variables, such as attitudes about obesity and the thin ideal, as there may be more possibility to alter these variables. Thus focusing on fostering messages and policies that promote acceptance of various weights and body types, as well as promoting education of obesity as a disease with complex biological, psychological, and environmental contributors, seems to be appropriate avenues for addressing weight bias at the public health level.

A separate final model included weight bias internalization, as only participants who endorsed thinking that they were overweight completed the measure in our study. Contrary to our hypothesis, the model was not significant. Other research has also used self-perceived weight status as to measure internalized weight bias. The researchers used a slightly modified version of the weight bias internalization scale (excluding the first item, which had poor item-total correlation) and found alphas were high and comparable (i.e., .92 and .94) for ratings made by those who classified themselves as overweight (regardless of weight status) versus those who actually had overweight, based on BMI (Lee & Dedrick, 2016). Given that women in our study had higher weight bias internalization scores than men, the inclusion of men in our model may have influenced its significance level. In other words, men who internalize weight bias may
possess characteristics that are unique from men who do not internalize weight bias, such as overvaluation of weight and shape (Pearl, White, & Grilo, 2014). Future research should explore the degree to which men and women differ with respect to internalized weight bias. If there are significant differences, gender may be an important variable to consider going forward.

In sum, weight stigma appears to be present in online dating scenarios. In addition, weight stigma was greater as the weight status of the individual in the online dating profile increased, in the anonymous feedback condition, and for the male online dating candidate. In a logistic regression predicting weight bias, it was largely the variables most directly related to weight that were significant (i.e., attitude toward obese persons, self-classified weight, self-objectification, feedback condition). Taken together, the emphasis on weight and appearance related information in online dating profiles, as well as the relatively anonymous nature of many dating sites and apps seem to lend themselves to instances of weight stigma.

**Study 2**

In Study 2, a series of multiple regression analyses were conducted to examine how potential moderators affected the relationship between weight-mitigating factors (i.e., SES, height, activity level, and temperament) and the number of expected profile hits. Potential moderators were drawn from the variables that predicted weight bias in Study 1 that were also present in Study 2 (i.e., attitudes toward obese persons, beliefs about obese persons, gender, self-objectification, objectification of others (women), and self-classified weight). There were significant main effects for mitigating factors, beliefs about obese persons, self-objectification, attitudes toward obese persons, and photo gender. Main effects were not significant for objectification of others (women) or self-classified weight. There were no significant interaction
effects. As such, no variables moderated the relationship between mitigating factors and expected number of profile hits.

The significant main effect for mitigating factors indicates that as the number of mitigating factors increased, so did the number of predicted profile contacts. This suggests that it may be possible to offset some of the disadvantage that may exist for having overweight in online dating if more traditionally desirable qualities are present. The chance to offset weight stigma was highest with the greatest number of mitigating factors present. The impact was relatively linear as number of mitigating factors increased. However, women appeared to benefit more strongly from having a higher number of mitigating factors present than did men, in that there was a steeper increase of expected profile hits for women between moderate and high numbers of mitigating factors. This implies that there may in fact be support for our original hypothesis that women are more likely to experience weight stigma, given the extra pressure they may face regarding importance of appearance.

The significant main effects for attitude toward obese persons and beliefs about obese persons indicate that as destigmatizing attitudes about obesity increased, so did the number of predicted profile contacts. This is not surprising, given that higher scores on the attitudes toward obese person reflect more positive attitudes toward individuals with obesity, and higher beliefs about obese persons scores demonstrate stronger beliefs that obesity is not controllable by the individual. Thus, it appears that participants who hold more favorable views toward individuals with obesity and do not believe that obesity is completely controllable by the individual were more likely to predict a higher number of profile hits than those with less favorable views. This implies that if individuals do not view obesity as an individual with obesity’s “fault,” they may be more likely to rate them as attractive. This is in-line with research showing that after
participating in an intervention aimed at reducing weight stigma, individuals were less likely to endorse believing that obesity is completely under the control of the individual (Diedrichs & Barlow, 2011). Additionally, individuals were less likely to espouse negative views against individuals with obesity, as well as being less likely to rate them as unattractive.

There was a main effect for photo gender, though again, it was in the opposite of the hypothesized direction. In other words, it was expected that women would have fewer predicted profile hits than men because of the greater emphasis on weight and appearance for women and men having stronger preference of attractiveness of female partners; however, the reverse was observed. The mean number of expected profile hits was higher for female profiles than male profiles when explored as the mean across photos and each photo individually. This may again be related to the differences in profile picture attractiveness.

The significant main effect for Self-Objectification indicates that participants who place higher emphasis on appearance predicted higher numbers of expected profile hits. Therefore, for those who place importance on their own attractiveness, photographic information may matter more than profile information (i.e., mitigating factors) for influencing expected profile hits.

Income was hypothesized to be an important potential mitigating factor. In a study of the effect on income level on attraction in online dating, men with the highest income level received 10 times as many profile hits as men with the lowest income level (Ong & Wang, 2015). However, men visited women of various income levels, regardless of their own income level. As mitigating factors were significant in this study, it seems to lend support for the aforementioned mate selection theories based on evolutionary psychology, in which women value financial status in male partners more than men value it in female partners (e.g., Buss & Barnes, 1986; Henry, Helm, & Cruz, 2013). This is somewhat surprising, with advances in gender equality,
particularly with regard to earning potential. It seems traditional gender roles seem to persist
despite changing economic times. This may reflect how culturally ingrained messages of
traditional gender roles are.

Height was selected as another potential mitigating factor based on mate selection
literature. For men, it was hypothesized that being taller (6’0’’ vs. 5’6’’) would help mitigate
weight status. For women, it was expected that average height (5’5’’ vs. 5’11’’) would help
mitigate weight status. For example, partner height preferences differ by sex, with men
preferring women who are 7 cm shorter then themselves, whereas women prefer men who are 25
cm taller than themselves (Stulp, Buun, Kurzban, & Verhulst, 2013). However, partner height
preferences are affected by other variables, such as the ethnicity and height of the female partner
(Furnham & McClelland, 2015). Tall individuals are also more likely to have partners who have
more education (Ponzo & Scoppa, 2015). Individuals with higher BMIs were also less likely to
have partners with high levels of education. Gender differences emerged, in which being tall was
more important for men while being thin was more important for women.

Personality was selected as a third potential mitigating factor. Research has shown that
online personal ad users pay attention to a combination of factors to develop impressions of other
user’s personalities (Weidman, Cheng, Chisholm, & Tracy, 2015). For example, length of
personal ad information was used as an indication of extraversion level. In a study comparing
perceptions of open (dressed in revealing clothing, living in a livelier area, indications of
popularity) versus traditional (i.e., more conservatively dressed, living in a less lively area,
indications of less popularity) profiles, the traditional profiles were viewed more favorably (Jin
& Martin, 2015). This appeared to be strongly related to trustworthiness, which mediated the
relationship between the type of profile and attraction.
It is interesting that in Study 2, when racial differences in predicted mean profile hits were found, it was in the direction of non-White participants expecting more profile hits for our White candidates than did our White participants. This suggests that non-White participants found the White stimulus photos to be no less attractive than did White participants. Some previous research has indicated that certain non-White racial and ethnic groups are more accepting toward individuals with larger body types compared to White individuals (e.g., Ristovski-Slijepcevic, Bell, Chapman, & Began, 2010). For example, Black women may be less susceptible to traditionally White beauty ideals. Additionally, in a study including female adolescents, those with overweight or obesity were viewed as less attractive, though racial differences emerged. The so-called “physical appearance penalties” appear to be smaller for African American female adolescents with overweight than for White female adolescents, suggesting that beauty ideals focus less on thinness for African American women than may be the case for other groups (Ali, Rizzo, & Heiland, 2013).

In summary, Study 2 demonstrated that attribute trade is possible in online dating scenarios for individuals with obesity. Results indicated that possessing mitigating factors (e.g., high income, desirable height, attractive activity level, and pleasant personality) may help offset the weight status of individuals with obesity. With regard to other variables that influenced the predicted number of profile hits, there were also main effects for self-objectification, photo gender, and attitudes/beliefs about obesity.

Limitations

While these studies had several strengths (e.g., large sample sizes), they also possessed several important limitations that must be considered when attempting to generalize findings. First, the order of the mock profiles was not counterbalanced in Study 2. This may have
influenced participant ratings of perceived hit rates, as the number of mitigating factors increased as the profiles progressed. Future research should consider including a broader range and mixed order of profiles to better understand how weight bias impacts online dating experiences and mate selection, more generally.

Second, in Study 1, the weight manipulation of the mock online dating male profile pictures may not have been as successful as the weight manipulation of the mock online dating female profile photos. This is evidenced by higher attractiveness ratings for female photos. This may have diluted the true effect of gender on the rates of weight stigma. As such, future researchers should be careful to equate the attractiveness of photos as much as possible, using more sophisticated pilot testing than was feasible in the present study.

These studies included college students. While college students are active users of online dating (Pew Research Center, 2016), weight stigma may affect other populations differently. For example, the characteristics that are important in a short-term relationship may differ from that of a long-term relationship; many college students may be more likely to seek short-term relationships, rather than long-term relationships. The construct of “dealbreakers,” or characteristics individuals would like to avoid in a partner, differs in relation to short vs. long-term dating relationships. One study found that in short-term relationships, the number 7 dealbreaker out of 10 was a partner being unattractive; this did not make the top 10 dealbreaker list for long term relationships (Jonason, Garcia, Webster, Li, & Fisher, 2015). This implies that weight stigma in online dating situations may be exacerbated in college populations.

Other follow-up studies should include using racially diverse stimulus photos, as body type and weight ideals may differ across racial and ethnic groups, as previously discussed. Additionally, further research is needed to explore how sexual orientation may or may not
impact weight bias in online dating. For example, gay men may experience a more pronounced effect of weight and appearance in online dating profiles than heterosexual men. Research shows that various appearance pressures exist in gay communities, most notable for leanness or muscularity (e.g., Varangis, Lanzieri, Hildebrandt, & Feldman, 2012; Foster-Gimbel & Engeln, 2016).

The current study did not examine which of the mitigating factors may be most beneficial to helping offset weight status. Thus, future research should explore this. Additionally, other potential mitigating factors should be examined. For example, in this study, personality was broadly explored, whereas future researchers should explore more nuanced aspects of this construct. Potential variables to explore include, sense of humor, power, assertiveness, reliability, and intellect.

Finally, weight bias was measured in a proxy way in Study 2, in that predicted profile hits may not reflect each participant’s individual weight bias beliefs. However, weight bias can be measured explicitly or implicitly, and such scores may be discordant or only marginally related to each other (e.g., Hinman, Burmeister, Kiefner, Borushok, & Carels, 2015; Tomiyama et al., 2015). In other words, when weight bias is measured explicitly (directly), individuals may not report it. When weight bias is measured indirectly, bias may be more observable. As such, this proxy measure may be more accurate.

**Conclusion**

In conclusion, the results of Study 1 demonstrated that weight bias appears to be present in online dating situations. When feedback was anonymous, participants were more likely to select weight as the reason for the person featured in the profile’s lack of success with online dating. The actual weight status of the individuals in the mock online dating profiles was also
significantly associated with weight bias, with individuals with overweight being more likely to receive weight stigma. Additionally, men were more likely to be the recipients of weight stigma. Other factors that related to engaging in weight bias included attitudes/beliefs about obesity, self-classified weight, self-objectification (across genders), and objectification of women. Taken together, findings suggest that online dating is an arena where individuals with overweight or obesity may be at increased risk for experiencing weight bias. As has been mentioned, individuals with overweight and obesity are likely to experience weight bias in a variety of domains, including work, education, health care settings, and social settings. These experiences can negatively impact one’s physical, psychological, and social well-being. Thus, it is crucial to identify ways to educate others in the interest of improving the quality of life of those who experience weight stigma.

In our second study, as the number of weight-mitigating factors increased, so did the number of expected profile hits. There were also main effects for photo gender, self-objectification, and attitudes/beliefs about obesity. These findings indicate that there are factors that may help mitigate weight bias against online daters with obesity. Continued efforts are needed in this area in order to better understand the nuances of weight stigma in online dating for various populations. This research should also be used to inform interventions to reduce weight stigma. Given that these studies explored factors related to who appears to be most likely to experience weight stigma in online dating, as well as factors associated with being more likely to engaged in the weight stigmatization of others, it provides insight into areas that may be helpful to target in interventions to designed to reduce weight stigma. For example, self-objectification and beliefs/attitudes toward obesity may serve as starting points to develop such interventions,
given their association in this study with more favorable anticipated online dating outcomes for individuals with obesity.
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DOI:10.1111/jasp.12357


APPENDICES
Appendix A:

Pilot Study IRB Approval Letter

EASTERN MICHIGAN UNIVERSITY
Education First

November 18, 2013

UH SRC Initial Application Determination: EXPEDITED APPROVAL

To: Rachel Sienko
   Eastern Michigan University - Department/School of Psychology

Re: UH SRC # 131019
   Category: Approved expedited Research Project
   Approval Date: November 18, 2013

Title: Experiences of Online Dating

The Eastern Michigan University Human Subjects Review Committee (UH SRC) has completed their review of your project. I am pleased to advise you that your expedited research has been approved in accordance with federal regulations.

Renewals: Expedited protocols need to be renewed annually. If the project is continuing, please submit the Human Subjects Continuation Form prior to the approval expiration. If the project is completed, please submit the Human Subjects Study Completion Form (both forms are found on the UH SRC website).

Revisions: Expedited protocols do require revisions. If changes are made to a protocol, please submit a Human Subjects Minor Modification Form or new Human Subjects Approval Request Form (if major changes) for review (see UH SRC website for forms).

Problems: If issues should arise during the conduct of the research, such as unanticipated problems, adverse events, or any problem that may increase the risk to human subjects and change the category of review, notify the UH SRC office within 24 hours. Any complaints from participants regarding the risk and benefits of the project must be reported to the UH SRC.

Follow-up: If your expedited research project is not completed and closed after three years, the UH SRC office will require a new Human Subjects Approval Request Form prior to approving a continuation beyond three years.

Please use the UH SRC number listed above on any forms submitted that relate to this project, or on any correspondence with the UH SRC office.

Good luck in your research. If we can be of further assistance, please contact us at 734-487-0042 or via e-mail at ga_human_subjects@emich.edu. Thank you for your cooperation.

Sincerely,

[Signature]

Dr. Jennifer Kellman Fritz
Faculty Co-Chair
University Human Subjects Review Committee
Appendix B:

Demographics Questionnaire

1. Please enter your first initial and last four digits of your cell phone number.

2. How old are you?

3. Are you
   - Male?
   - Female?
   - Transgender female?
   - Transgender male?
   - Prefer not to Answer

4. How tall are you?
   Feet
   Inches

5. How much do you currently weigh? (In pounds)

6. Some people identify themselves as belonging to one or more racial or ethnic groups. Please check the box(es) below which correspond to group(s) you belong to:
   - White or Caucasian
   - Black or African-American
   - Hispanic or Latino
   - American Native
   - Alaskan Native
   - Asian
   - Pacific Islander
   - Middle Eastern
   - Prefer not to Answer
   - Do you consider yourself to be of any other race or ethnic group? If so, what is it?
7. How many years of education have you completed? (Completing high school or its equivalent = 12 years)

8. What is your current marital status?
   Please check one:
   - Married
   - Single
   - Divorced
   - Remarried
   - Widowed
   - Separated
   - Living with partner (same sex)
   - Living with partner (opposite sex)
   - Prefer not to Answer

9. Are you
   - Heterosexual/straight?
   - Gay/Lesbian/Queer?
   - Bisexual?
   - Prefer not to Answer

10. What is your current employment status?
    Please check one:
    - Full Time (>35 hrs/wk)
    - Part Time (Regular hours)
    - Part Time (Irregular hours)
    - Unemployed, full time student
    - Unemployed, part time student
    - Retired/Disability
    - Military Service
    - Prefer not to Answer

11. What is the economic status of your current household?
    Please check one:
We have barely enough to get by
We have enough to get by, but no more
We are solidly middle class
We have plenty of “extras”
We have plenty of “luxuries”
Don’t know/unsure/prefer not to say

11. What is your annual household income?
(Select One Answer)
☐ $>150,000
☐ $100,000-$149,000
☐ $75,000-$99,000
☐ $50,000-$74,000
☐ $25,000-$49,000
☐ $10,000-$24,000
☐ <$9,000
☐ Don't know, or prefer not to say
Appendix C:

Online Dating History Questionnaire

1. Have you taken part in online dating within the last 3 months?
   - Yes
   - No

2. What dating site(s) do you have a membership or account for?

3. When was the last time you logged into your online dating account?
   - Today
   - Yesterday
   - 2-7 days ago
   - 8-14 days ago
   - More than 14 days ago
   - Never

4. When was the last time you interacted online with someone using an online dating site?
   - Today
   - Yesterday
   - 2-7 days ago
   - 8-14 days ago
   - More than 14 days ago
   - Never

5. When was the last time you interacted in-person with someone from an online dating site?
   - Today
   - Yesterday
   - 2-7 days ago
   - 8-14 days ago
   - More than 14 days ago

6. To what extent does body weight or shape influence who you will interact with using an online dating site?
   - 1 Not at all
7. To what extent do you think body weight or shape influences how others interact with you?
- 1 Not at all
- 2
- 3
- 4 Moderately
- 5
- 6
- 7 Very much

8. Do you feel like you have experienced biased treatment based on your weight or shape in online dating interactions?
- Yes
- No
Hi, my name is Sara. I just moved to the area and am looking to meet new people. I’m pretty busy with work, but when I have free time, I like to go to the movies, read, watch TV, or go for bike rides. I’m an animal lover, so I hope you like cats! I’m a little shy at first, but once you get to know me, you’ll see that I’m kind, smart, and actually pretty funny. If my profile sparks your interest, feel free to send me a message!

Sara is not having any luck with online dating. Which of the following reasons do you believe is causing her trouble? Please answer as if Sara were a close friend of yours. (vs. please answer as if your feedback were completely anonymous). Please select all answers that you feel apply.

- Sara noted that she is shy
- Sara’s weight is undesirable
- Sara’s information is too general
- Sara stated that she is busy with work
- Sara has boring hobbies
- Sara may have pets that others do not like

Please select the most likely reason Sara is not having success with online dating.
Sara noted that she is shy

Sara’s weight is undesirable

Sara’s profile information is too general

Sara stated that she is busy with work

Sara has boring hobbies

Sara may have pets that others do not like

Hi, my name is Ryan. I just moved to the area and am looking to meet new people. I’m pretty busy with work, but when I have free time, I like to go to the movies, read, watch TV, or go for bike rides. I’m an animal lover, so I hope you like cats! I’m a little shy at first, but once you get to know me, you’ll see that I’m kind, smart, and actually pretty funny. If my profile sparks your interest, feel free to send me a message!
Ryan is not having any luck with online dating. Which of the following reasons do you believe is causing him trouble? Please answer as if Ryan were a close friend of yours. (vs. please answer as if your feedback were completely anonymous). Please select all answers that you feel apply.

Ryan noted that he is shy

Ryan’s weight is undesirable

Ryan’s profile information is too general

Ryan stated that he is busy with work

Ryan has boring hobbies

Ryan may have pets that others do not like

Please select the most likely reason Ryan is not having success with online dating.

Ryan noted that he is shy

Ryan’s weight is undesirable

Ryan’s profile information is too general

Ryan stated that he is busy with work

Ryan has boring hobbies

Ryan may have pets that others do not like
Study 2
Male
No Mitigating Variables

Individual pictured is a model and is used for illustrative purposes only.

About Me

Hi, my name is Ryan. I just moved to the area, so I am looking to meet new people. When I have free time, I like to stay inside and relax, since I’m kind of a homebody. I’m on the quiet side and enjoy time to myself. Though I’m a little shy at first, once you get to know me you’ll see that I’m kind, smart, and actually pretty funny. If my profile sparks your interest, feel free to send me a message!

Study 2
Male
1 Mitigating Variable
Hi, my name is Ryan. I just moved to the area and am looking to meet new people. I recently got a promotion at work that came with a nice raise, so I like to treat myself sometimes. When I have free time, I like to stay in and relax since I am kind of a homebody. I’m on the quiet side and enjoy time to myself. Though I’m a little shy at first, once you get to know me you’ll see that I’m kind, smart, and actually pretty funny. If my profile sparks your interest, feel free to send me a message!

Study 2
Male
2 Mitigating Variables

Hi, my name is Ryan. I just moved to the area and am looking to meet new people. I recently got a promotion at work that came with a nice raise, so I like to treat myself sometimes. When I have free time, I like to stay in and relax since I am kind of a homebody. I’m on the quiet side and enjoy time to myself. Though I’m a little shy at first, once you get to know me you’ll see that I’m kind, smart, and actually pretty funny. If my profile sparks your interest, feel free to send me a message!

Study 2
Male
3 Mitigating Variables

Hi, my name is Ryan. I just moved to the area and am looking to meet new people. I recently got a promotion at work that came with a nice raise, so I like to treat myself sometimes. I’m on the quiet side and enjoy time to myself, but I’m active and enjoy running. I’m a little shy at first, but once you get to know me you’ll see that I’m kind, smart, and actually pretty funny. If my profile sparks your interest, feel free to send me a message!
Study 2
Male
4 Mitigating Variables

Gender: Male
Height: 6’ 0’’
Income: $75,000
About Me

Hi, my name is Ryan. I just moved to the area and am looking to meet new people. I recently got a promotion at work that came with a nice raise, so I like to treat myself sometimes. When I have free time, I like to be active and enjoy running. People say I’m outgoing and sociable, and I enjoy being around others. If my profile sparks your interest, feel free to send me a message!

Study 2
Female
No Mitigating Variables

Gender: Female
Height: 5’ 11’’
Income: Under $30,000
About Me

Hi, my name is Sara. I just moved to the area, so I am looking to meet new people. When I have free time, I like to stay inside and relax, since I’m kind of a homebody. I’m on the quiet side and enjoy time to myself. Though I’m a little shy at first, once you get to know me you’ll see that I’m kind, smart, and actually pretty funny. If my profile sparks your interest, feel free to send me a message!

Study 2
Female
1 Mitigating Variable

Gender: Female
Height: 5’ 11”
Income: $75,000

About Me

Hi, my name is Sara. I just moved to the area and am looking to meet new people. I recently got a promotion at work that came with a nice raise, so I like to treat myself sometimes. When I have free time, I like to stay in and relax since I’m kind of a homebody. I’m on the quiet side and enjoy time to myself. Though I’m a little shy at first, once you get to know me you’ll see that I’m kind, smart, and actually pretty funny. If my profile sparks your interest, feel free to send me a message!

Study 2
Female
2 Mitigating Variables

Gender: Female
Height: 5’ 5”
Income: $75,000

About Me

Hi, my name is Sara. I just moved to the area and am looking to meet new people. I recently got a promotion at work that came with a nice raise, so I like to treat myself sometimes. When I have free time, I like to stay in and relax since I’m kind of a homebody. I’m on the quiet side and enjoy time to myself. Though I’m a little shy at first, once you get to know me you’ll see that I’m kind, smart, and actually pretty funny. If my profile sparks your interest, feel free to send me a message!
Study 2
Female
3 Mitigating Variables

Gender: Female
Height: 5’ 5”
Income: $75,000

About Me

Hi, my name is Sara. I just moved to the area and am looking to meet new people. I recently got a promotion at work that came with a nice raise, so I like to treat myself sometimes. I’m on the quiet side and enjoy time to myself, but I’m active and enjoy running. I’m a little shy at first, but once you get to know me you’ll see that I’m kind, smart, and actually pretty funny. If my profile sparks your interest, feel free to send me a message!

Study 2
Female
4 Mitigating Variables

Gender: Female
Height: 5’ 5”
Income: $75,000

About Me

Hi, my name is Sara. I just moved to the area and am looking to meet new people. I recently got a promotion at work that came with a nice raise, so I like to treat myself sometimes. When I have free time, I like to be active and enjoy running. People say I’m outgoing and sociable, and I enjoy being around others. If my profile sparks your interest, feel free to send me a message!
Appendix E:

Social Dominance Orientation Scale

Some groups of people are simply inferior to others.
In getting what you want, it is sometimes necessary to use force against other groups.
It’s OK is some groups have more of a chance in life than others.
To get ahead in life, it is sometimes necessary to step on other groups.
If certain groups stayed in their place, we would have fewer problems.
It’s probably a good thing that certain groups are at the top and other groups are at the bottom.
Inferior groups should stay in their place.
Sometimes other groups must be kept in their place.
It would be good if groups could be equal.
Group equality should be our ideal.
All groups should be given an equal chance in life.
We should do what we can to equalize conditions for different groups.
Increased social equality.
We would have fewer problems if we treated people more equally.
We should strive to make incomes as equal as possible.
No one group should dominate in society.
Appendix F:

Unconditional Compassion Scale

Below are some statements about various feelings, thoughts and behaviors that people may have. Using the scale presented under each statement, please mark the option that best describes you.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Scale Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>I strive to help those in need.</td>
<td>1 not true of me at all 2 somewhat untrue of me 3 slightly untrue of me 4 slightly true of me 5 somewhat true of me 6 very true of me</td>
</tr>
<tr>
<td>I welcome others as they are</td>
<td>1 not true of me at all 2 somewhat untrue of me 3 slightly untrue of me 4 slightly true of me 5 somewhat true of me 6 very true of me</td>
</tr>
<tr>
<td>I can make sense of other people’s emotions</td>
<td>1 not true of me at all 2 somewhat untrue of me 3 slightly untrue of me 4 slightly true of me 5 somewhat true of me 6 very true of me</td>
</tr>
<tr>
<td>I try not to judge others for how they feel.</td>
<td>1 not true of me at all 2 somewhat untrue of me 3 slightly untrue of me 4 slightly true of me 5 somewhat true of me 6 very true of me</td>
</tr>
<tr>
<td>I feel tenderhearted towards others who are feeling sad or upset.</td>
<td>1 not true of me at all 2 somewhat untrue of me 3 slightly untrue of me 4 slightly true of me 5 somewhat true of me 6 very true of me</td>
</tr>
<tr>
<td>It is okay if someone acts in ways that I would not.</td>
<td>1 not true of me at all 2 somewhat untrue of me 3 slightly untrue of me 4 slightly true of me 5 somewhat true of me 6 very true of me</td>
</tr>
<tr>
<td>When I see that someone is feeling upset, I want to offer my consolation</td>
<td>1 not true of me at all 2 somewhat untrue of me 3 slightly untrue of me 4 slightly true of me 5 somewhat true of me 6 very true of me</td>
</tr>
<tr>
<td>When it appears someone is distressed, I can easily understand their emotional pain.</td>
<td>1 not true of me at all 2 somewhat untrue of me 3 slightly untrue of me 4 slightly true of me 5 somewhat true of me 6 very true of me</td>
</tr>
<tr>
<td>I am able to understand how others feel.</td>
<td>1 not true of me at all 2 somewhat untrue of me 3 slightly untrue of me 4 slightly true of me 5 somewhat true of me 6 very true of me</td>
</tr>
<tr>
<td>I try not to judge people who are different from me.</td>
<td>1 not true of me at all 2 somewhat untrue of me 3 slightly untrue of me 4 slightly true of me 5 somewhat true of me 6 very true of me</td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td><strong>I feel kindly for people who are struggling with problems.</strong></td>
<td></td>
</tr>
<tr>
<td>not true of me at all untrue of me of me of me true of me</td>
<td></td>
</tr>
<tr>
<td><strong>When someone appears distressed, I am willing to help.</strong></td>
<td></td>
</tr>
<tr>
<td>not true of me at all untrue of me of me true of me</td>
<td></td>
</tr>
<tr>
<td><strong>Interpreting other people’s emotions is easy for me.</strong></td>
<td></td>
</tr>
<tr>
<td>not true of me at all untrue of me of me true of me</td>
<td></td>
</tr>
<tr>
<td><strong>I am able to accept people that are different from me.</strong></td>
<td></td>
</tr>
<tr>
<td>not true of me at all untrue of me of me true of me</td>
<td></td>
</tr>
</tbody>
</table>
Appendix G:

Stunkard Figure Rating Scales

1. Choose the figure that reflects how you think you look.
2. Choose your ideal figure.
3. Choose the figure of the typical person that you date/have dated.
4. Choose the figure of the ideal person that you would like to date/have dated.
Appendix H:

Beliefs About Obese Persons Scale

1. Obesity often occurs when eating is used as a form of compensation for lack of love or attention.
2. In many cases, obesity is the result of a biological disorder.
3. Obesity is usually caused by overeating.
4. Most obese people cause their problem by not getting enough exercise.
5. Most obese people eat more than nonobese people.
6. The majority of obese people have poor eating habits that lead to their obesity.
7. Obesity is rarely caused by a lack of willpower.
8. People can be addicted to food, just as others are addicted to drugs, and these people usually become obese.
Appendix I:

Attitudes Toward Obese Persons Scale

1. Obese people are as happy as nonobese people.
   I strongly disagree
   I moderately disagree
   I slightly disagree
   I slightly agree
   I moderately agree
   I strongly agree

2. Most obese people feel that they are not as good as other people.
3. Most obese people are more self-conscious than other people.
4. Obese workers cannot be as successful as other workers.
5. Most nonobese people would not want to marry anyone who is obese.
6. Severely obese people are usually untidy.
7. Obese people are usually sociable.
8. Most obese people are not dissatisfied with themselves.
9. Obese people are just as self-confident as other people.
10. Most people feel uncomfortable when they associate with obese people.
11. Obese people are often less aggressive than nonobese people.
12. Most obese people have different personalities than nonobese people.
13. Very few obese people are ashamed of their weight.
14. Most obese people resent normal weight people.
15. Obese people are more emotional than nonobese people.
16. Obese people should not expect to lead normal lives.
17. Obese people are just as healthy as nonobese people.
18. Obese people are just as sexually attractive as nonobese people.
19. Obese people tend to have family problems.
20. One of the worst things that could happen to a person would be for him to become obese.
Appendix J:

Weight Bias Internalization Scale

1. As an overweight person, I feel that I am just as competent as anyone.

2. I am less attractive than most other people because of my weight.

3. I feel anxious about being overweight because of what people might think of me.

4. I wish I could drastically change my weight.

5. Whenever I think a lot about being overweight, I feel depressed.

6. I hate myself for being overweight.

7. My weight is a major way that I judge my value as a person.

8. I don’t feel that I deserve to have a really fulfilling social life, as long as I’m overweight.

9. I am OK being the weight that I am.

10. Because I’m overweight, I don’t feel like my true self.

11. Because of my weight, I don’t understand how anyone attractive would want to date me.
Appendix K:  
The Self-Objectification Questionnaire  

We are interested in how people think about their bodies. The questions below identify 10 different body attributes. We would like you to rank order these body attributes from that which has the greatest impact on your physical self-concept (rank this a “9”), to that which has the least impact on your physical self-concept (rank this a “0”).

Note: It does not matter how you describe yourself in terms of each attribute. For example, fitness level can have a great impact on your physical self-concept regardless of whether you consider yourself to be physically fit, not physically fit, or any fitness level in between.

Please first consider all attributes simultaneously, and record your rank ordering by writing the ranks in the rightmost column.

**IMPORTANT:** Do Not Assign the Same Rank to More than One Attribute!

When considering your physical self-concept…

…what rank do you assign to physical coordination?  
…what rank do you assign to health?  
…what rank do you assign to weight?  
…what rank do you assign to strength?  
…what rank do you assign to sex appeal?  
…what rank do you assign to physical attractiveness?  
…what rank do you assign to energy level (e.g., stamina)?  
…what rank do you assign to firm/sculpted muscles?  
…what rank do you assign to physical fitness level?  
…what rank do you assign to measurements (e.g., chest, waist, hips)?
Appendix L:

Objectification of Others

The Self-Objectification Questionnaire measure is modified to measure objectification of others with the following instructions: “This section is concerned with how people think about other people’s bodies. Listed below are 10 different body attributes. When you think about, or look at other people in general, which of these body attributes do you think is most important? Furthermore, I would like you to think about both men’s and women’s body attributes. For both men and women, I would like you to rank the attributes in order from what you think is most important in others to what you think is least important in others.”
Appendix M:

The Multidimensional Body-Self Relations Questionnaire—Appearance Scale

Below you will see a series of statements about how people might think, feel, or behave. Please indicate the extent to which each statement pertains to you personally. To preserve confidentiality, please do not write your name on any of the materials. Read each statement carefully and decide how much it pertains to you personally. Using a scale like the one below, indicate your answer by entering it to the left of the number of the statement.

<table>
<thead>
<tr>
<th>Example</th>
<th>I am usually in a good mood.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My body is sexually appealing.</td>
<td></td>
</tr>
<tr>
<td>2. I constantly worry about being or becoming fat.</td>
<td></td>
</tr>
<tr>
<td>3. I like my looks just the way they are.</td>
<td></td>
</tr>
<tr>
<td>4. I am very conscious of even small changes in my weight.</td>
<td></td>
</tr>
<tr>
<td>5. Most people would consider me good-looking.</td>
<td></td>
</tr>
<tr>
<td>6. I like the way I look without my clothes on.</td>
<td></td>
</tr>
<tr>
<td>7. I like the way clothes fit me.</td>
<td></td>
</tr>
<tr>
<td>8. I dislike my physique.</td>
<td></td>
</tr>
<tr>
<td>9. I am physically unattractive.</td>
<td></td>
</tr>
<tr>
<td>10. I am on a weight-loss diet.</td>
<td></td>
</tr>
</tbody>
</table>

There are no right or wrong answers. Just give the answer that is most accurate for you. Remember, your responses are confidential, so please be completely honest and answer all the items.

Definitely | Mostly | Neither | Mostly | Definitely
---|---|---|---|---
Disagree | Disagree | Agree Nor | Agree | Agree

Definitely

1. My body is sexually appealing.
2. I constantly worry about being or becoming fat.
3. I like my looks just the way they are.
4. I am very conscious of even small changes in my weight.
5. Most people would consider me good-looking.
6. I like the way I look without my clothes on.
7. I like the way clothes fit me.
8. I dislike my physique.
9. I am physically unattractive.
10. I am on a weight-loss diet.

For the remainder of the items use the response scale given with the item and enter your answer in the space beside the item.

11. I have tried to lose weight by fasting or going on crash diets. 

   1. Never
   2. Rarely
   3. Sometimes
   4. Often
   5. Very Often

12. I think I am: 

   1. Very Underweight
   2. Somewhat Underweight
3. Normal Weight
4. Somewhat Overweight
5. Very Overweight

13. From looking at me, most other people would think I am: ______
1. Very Underweight
2. Somewhat Underweight
3. Normal Weight
4. Somewhat Overweight
5. Very Overweight
Appendix N:

Patient Health Questionnaire (PHQ-9)

1. Over the last 2 weeks, how often have you been bothered by any of the following problems?

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1. Little interest or pleasure in doing things</td>
<td>☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2. Feeling down, depressed, or hopeless</td>
<td>☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B3. Trouble falling or staying asleep, or sleeping too much</td>
<td>☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B4. Feeling tired or having little energy</td>
<td>☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B5. Poor appetite or overeating</td>
<td>☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B6. Feeling bad about yourself - or that you are a failure or have let yourself or your family down</td>
<td>☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B7. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td>☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B8. Moving or speaking so slowly that other people could have noticed? Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual</td>
<td>☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B9. Thoughts that you would be better off dead or of hurting yourself in some way</td>
<td>☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

you checked off any problems (items B1 - B9), how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

☐ Not difficult at all
☐ Somewhat difficult
☐ Very difficult
☐ Extremely difficult

Appendix O:
### The Narcissistic Personality Inventory-16

<table>
<thead>
<tr>
<th>Narcissistic response</th>
<th>Non-narcissistic response</th>
</tr>
</thead>
<tbody>
<tr>
<td>I know that I am good because everybody keeps telling me so</td>
<td>When people compliment me I sometimes get embarrassed</td>
</tr>
<tr>
<td>I like to be the center of attention</td>
<td>I prefer to blend in with the crowd</td>
</tr>
<tr>
<td>I think I am a special person</td>
<td>I am no better or nor worse than most people</td>
</tr>
<tr>
<td>I like having authority over people</td>
<td>I don’t mind following orders</td>
</tr>
<tr>
<td>I find it easy to manipulate people</td>
<td>I don’t like it when I find myself manipulating people</td>
</tr>
<tr>
<td>I insist upon getting the respect that is due me</td>
<td>I usually get the respect that I deserve</td>
</tr>
<tr>
<td>I am apt to show off if I get the chance</td>
<td>I try not to be a show off</td>
</tr>
<tr>
<td>I always know what I am doing</td>
<td>Sometimes I am not sure of what I am doing</td>
</tr>
<tr>
<td>Everybody likes to hear my stories</td>
<td>Sometimes I tell good stories</td>
</tr>
<tr>
<td>I expect a great deal from other people</td>
<td>I like to do things for other people</td>
</tr>
<tr>
<td>I really like to be the center of attention</td>
<td>It makes me uncomfortable to be the center of attention</td>
</tr>
<tr>
<td>People always seem to recognize my authority</td>
<td>Being an authority doesn’t mean that much to me</td>
</tr>
<tr>
<td>I am going to be a great person</td>
<td>I hope I am going to be successful</td>
</tr>
<tr>
<td>I can make anybody believe anything I want them to</td>
<td>People sometimes believe what I tell them</td>
</tr>
<tr>
<td>I am more capable than other people</td>
<td>There is a lot that I can learn from other people</td>
</tr>
<tr>
<td>I am an extraordinary person</td>
<td>I am much like everybody else</td>
</tr>
</tbody>
</table>

Appendix P:
The Eating Disorder Examination Questionnaire

Instructions: The following questions are concerned with the past four weeks (28 days) only. Please read each question carefully. Please answer all the questions. Thank you.

Please click the circle to indicate the appropriate number below. Remember that the questions only refer to the past four weeks (28 days).

### 1. On how many of the past 28 days...

<table>
<thead>
<tr>
<th>Question</th>
<th>No days</th>
<th>1-5 days</th>
<th>6-12 days</th>
<th>13-15 days</th>
<th>16-22 days</th>
<th>23-27 days</th>
<th>Every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you been deliberately <strong>trying</strong> to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you <strong>tried</strong> to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2. On how many of the past 28 days...

<table>
<thead>
<tr>
<th>Question</th>
<th>No days</th>
<th>1-5 days</th>
<th>6-12 days</th>
<th>13-15 days</th>
<th>16-22 days</th>
<th>23-27 days</th>
<th>Every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you <strong>tried</strong> to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you had a <strong>definite desire</strong> to have an <strong>empty</strong> stomach with the aim of influencing your shape or weight?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you had a definite desire to have a <strong>totally flat</strong> stomach?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3. On how many of the past 28 days...


Has thinking about **food, eating or calories** made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?

Has thinking about **shape or weight** made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?

Have you had a definite fear of losing control over eating?

Have you had a definite fear that you might gain weight?

Have you felt fat?

Have you had a strong desire to lose weight?

4. For the following questions, please fill in the appropriate number in the boxes on the right. Remember that the questions only refer to the past four weeks (28 days).

**Over the past four weeks (28 days)...**

Over the past 28 days, how many times have you eaten what other people would regard as an unusually large amount of food (given the circumstances)?

On how many of these times did you have a sense of having lost control over your eating (at the time that you were eating)?

Over the past 28 days, on how many **DAYS** have such episodes of overeating occurred (i.e., you have eaten an unusually large amount of food and have had a sense of loss of control at the time)?

Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight?

Over the past 28 days, how many times have you taken laxatives as a means of controlling your shape or weight?

Over the past 28 days, how many times have you exercised in a "driven" or "compulsive" way as a means of controlling your weight,
shape or amount of fat, or to burn off calories?

Please indicate the appropriate number. Please note that for these questions the term "binge eating" means eating what others would regard as an unusually large amount of food for the circumstances, accompanied by a sense of having lost control over eating.

5. Over the past 28 days, on how many days have you eaten in secret (i.e., furtively)?
...Do not count episodes of binge eating
☐ No days  ☐ 1-5 days  ☐ 6-12 days  ☐ 13-15 days  ☐ 16-22 days  ☐ 23-27 days  ☐ Every day

6. On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight?
...Do not count episodes of binge eating
☐ None of the times  ☐ A few of the times  ☐ Less than half  ☐ Half of the times  ☐ More than half  ☐ Most of the time  ☐ Every time

7. Over the past 28 days, how concerned have you been about other people seeing you eat?
...Do not count episodes of binge eating
☐ 0 Not at all  ☐ 1  ☐ 2 Slightly  ☐ 3  ☐ 4 Moderately  ☐ 5  ☐ 6 Markedly

Please click the appropriate circle on the right. Remember that the questions only refer to the past four weeks (28 days).

8. Over the past 28 days.....

<table>
<thead>
<tr>
<th>Has your weight influenced how you think about (judge) yourself as a person?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
</tr>
<tr>
<td>☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Has your shape influenced how you think about (judge) yourself as a person?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
</tr>
<tr>
<td>☐</td>
</tr>
<tr>
<td>Question</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?</td>
</tr>
<tr>
<td>How dissatisfied have you been with your weight?</td>
</tr>
<tr>
<td>How dissatisfied have you been with your shape?</td>
</tr>
<tr>
<td>How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?</td>
</tr>
<tr>
<td>How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?</td>
</tr>
</tbody>
</table>

9. What is your weight at present? (Please give your best estimate.)

10. What is your height in inches? (Please give your best estimate, i.e., 5' 5" = 65 inches.)

11. If female: Over the past three-to-four months have you missed any menstrual periods?
    - Yes
    - No

12. If so, how many?

13. Have you been taking the "pill"?
    - Yes
    - No
Appendix Q:

Informed Consent Form (for both studies)

Thank you for your interest in participating in this survey. Before you agree to continue, you need to know why we are doing this research and what we will be asking you to do. Please read the following information carefully.

**What will you have to do?** We are asking you to fill out a survey that will take about 45 minutes to complete. Questions on the survey will ask about your gender, personality variables, and ask you to provide feedback on online dating profiles.

**Who are the researchers and what do they hope to find out?** The study is being conducted by Rachel Sienko and Dr. Karen Saules from the Department of Psychology at Eastern Michigan University. The researchers are trying to learn more about online dating.

**Who can take part?** This survey is open to individuals that are at least 18 years old.

**How will your privacy and confidentiality be respected?** Your responses are confidential, and will remain so because no personally identifying information is included in the questionnaires. Results will be presented without any individually identifying information.

**What if you decide to stop?**
Taking part in this study is completely voluntary and you have the right to end your participation at any time without any negative consequences. We appreciate as much information as you are comfortable providing.

**What are the risks of taking part in this study?**
Taking part in this study has no major foreseeable risks. If, however, answering this survey causes you distress for which you might like some assistance, please note that low cost or free psychological services may be available through the EMU Psychology Clinic (734.487.4987) or EMU Counseling & Psychological Services (734.487.1122); the latter is free to EMU students. You may also call one of the researchers, Dr. Saules (734.487.4987), and she will be happy to speak with you about other referral sources that might be able to assist you.

**What is in it for you and others?**
Sharing your experiences may not benefit you directly, but it will contribute to a greater understanding of these experiences in the scientific literature, which may benefit other individuals in the future.

**Will you be compensated for your participation?**
Compensation is not available for your participation. However, you may be eligible for extra credit, depending on the policies of your instructors.

**What will be done with the results?**
The results will be used for a doctoral dissertation and may also be sent to scientific journals for
publication and to professional conferences for presentation to the scientific community. All results will be presented in group format, without any individually identifying information, so your responses will remain completely confidential.

**Whom should you contact if you would like a copy of the results?**
For results from the study, you may contact Rachel Sienko at rsienko@emich.edu.

**Whom should you contact if you have questions about the study?**
You may contact: Rachel Sienko (rsienko@emich.edu), or Dr. Karen Saules (734.487.4987 or ksaules@emich.edu) of the Eastern Michigan University Department of Psychology if you have any questions or concerns.

**Whom should you contact if you have questions about your rights as a research participant?**
This research protocol and informed consent document has been reviewed and approved as Exempt by the Eastern Michigan University Human Subjects Review Committee (UHSRC); approval number UHSRC: # 654622-1. If you have questions about the approval process, please contact the UHSRC at human.subjects@emich.edu or call 734-487-0042.

**What should you do if you wish to take part in this study?**
If you have read all of the above information and would like to take part in this study, click the next button below. By doing so, you are giving informed consent for us to use your responses in this study. You may wish to print this page for your records.

**If you do not wish to take part in this study, just close this window.**

NEXT. I wish to participate.

No, thank you. I do not wish to participate.
Appendix R:

IRB Approval Letter

EASTERN MICHIGAN UNIVERSITY
University Human Subjects Review Committee
200 Boone Hall • Ypsilanti, Michigan 48197 • Phone: 734.487.3090 • E-mail: human.subjects@emich.edu
www.emich.edu/ord (see Research Compliance)

UHSRC Determination: EXEMPT

DATE: September 19, 2014

TO: Rachel Sienko, MS
Department of Psychology
Eastern Michigan University

Re: UHSRC: # 654622-1
Category: Exempt category [2-2]
Approval Date: September 19, 2014

Title: An Examination of Attribute Trade and Weight Stigma in Online Dating

Your research project, entitled An Examination of Attribute Trade and Weight Stigma in Online Dating, has been determined Exempt in accordance with federal regulation 45 CFR 46.102. UHSRC policy states that you, as the Principal Investigator, are responsible for protecting the rights and welfare of your research subjects and conducting your research as described in your protocol.

Renewals: Exempt protocols do not need to be renewed. When the project is completed, please submit the Human Subjects Study Completion Form (access through IRBNet on the UHSRC website).

Modifications: You may make minor changes (e.g., study staff changes, sample size changes, contact information changes, etc.) without submitting for review. However, if you plan to make changes that alter study design or any study instruments, you must submit a Human Subjects Approval Request Form and obtain approval prior to implementation. The form is available through IRBNet on the UHSRC website.

Problems: All major deviations from the reviewed protocol, unanticipated problems, adverse events, subject complaints, or other problems that may increase the risk to human subjects or change the category of review must be reported to the UHSRC via an Event Report form, available through IRBNet on the UHSRC website.

Follow-up: If your Exempt project is not completed and closed after three years, the UHSRC office will contact you regarding the status of the project.

Please use the UHSRC number listed above on any forms submitted that relate to this project, or on any correspondence with the UHSRC office.

Good luck in your research. If we can be of further assistance, please contact us at 734-487-3090 or via e-mail at human.subjects@emich.edu. Thank you for your cooperation.

Sincerely,

Alissa Huth-Bocks, PhD
Chair
CAS Human Subjects Review Committee

- 1 -