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Effects of Emotion and Construal Level on Obesity Stigma

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EFFECTS OF EMOTION AND CONSTRUAL LEVEL ON OBESITY STIGMA

by
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A thesis submitted to the faculty of The University of Mississippi in partial fulfillment of
the requirements of the Sally McDonnell Barksdale Honors College.

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ABSTRACT

We conducted the present study to determine how emotion and construal level contribute to obesity bias. Specifically, we examined if different emotions, such as disgust, sadness, and happiness, played a role in several different judgments of an obese versus thin individual: 1) general impressions, 2) supporting a friend, and 3) endorsing personal versus biological/environmental causes for weight. We also investigated whether a self "me" construal or collective "we" construal influenced these judgments. We additionally considered whether emotion and these construal levels would interact to influence such judgments. The current work found that emotion and construal level did not interact to influence judgments about obese or thin individuals, but an overall obesity stigma was demonstrated for general impressions. Emotion influenced whether obese targets were given friend support, as happy (vs. sad) participants were more likely to support their obese friend. Construal level influenced whether more personal attributions for weight were given for obese targets, as those with a self construal endorsed personal attributions over biological/environmental ones to a greater extent than those using a collective construal.

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Chapter I.

Introduction

Obesity within the United States has traditionally been a public health concern, but in recent years, the rates of obesity have increased and become a nationwide epidemic. Obesity is defined as an individual with a body mass index of 30% or greater. From 1988-1994, the rate of obesity for all men over 20 years of age was 20.2%; for women of the same age, the rate was 25.4%. Unfortunately, by 2007 and 2008, the rates increased tremendously, as 32.2% of all men and 35.5% of all women (both over 20 years old) were classified as obese (Ogden & Carrol, 2010). According to the National Health and Nutrition Examination Survey taken in 2013-2014, those rates have steadily increased such that 37.9% of all United States adults are obese. Furthermore, 70.6% of all men and women are considered either overweight or obese (Fryar, Carroll, Ogden, 2016).

This rise in obesity has had devastating effects on the general well being of our population. While there is still some controversy over the recent classification of obesity as a disease by the American Medical Association (Puhl & Liu, 2015; Kyle, Dhurandhar, & Allison, 2016), there are widespread consequences of obesity for both individuals and society. For instance, obesity combined with physical inactivity caused 6 million deaths in 2004, which surpassed the mortality rate of tobacco use (Finer, 2015). Obesity is also correlated with a wide range of diseases, including non-alcoholic fatty liver, infertility,

hypertension, diabetes, stroke, and cancers of the breast, colon, uterus, and prostate, to name a few (Leite et al., 2009; Finer, 2015).

Although the physical effects of obesity are plentiful, these are not the only health issues associated with obesity. Though the reasons are currently unclear, there is a very strong association between obesity and mental health disorders. Individuals suffering with a mental health issue are at an increased risk for obesity, and vice versa. The risk of mental illnesses among obese individuals can range anywhere from 30% to 70%. The most common mental disorders associated with obesity are anxiety, depression, ADHD, and schizophrenia (Avila et al., 2015). Furthermore, many medications that are used in treatment programs for many mental disorders have obesity as a side effect (Avila et al., 2015), which raises questions about the potential causal direction of this relationship. Both the physical and mental health implications of obesity can reduce an individual's quality of life.

In addition to the health burden of obesity on an individual, there also exists a large financial impact on both the individual and the nation. Researchers in 2008 calculated that the per-person direct medical cost of being obese was $1723, while the national price tag of overweight and obesity combined was $113.9 billion (Tsai, Williamson, & Glick, 2011). These costs are from both direct health care and research costs, along with indirect costs from sources such as low productivity in the work force due to physical and mental health issues caused by being overweight and obese (Dee et al., 2014). Due to the financial, physical, and mental burden of obesity in the United States, it is important for researchers to study ways to reduce the incidence of obesity.

One promising method that researchers have delved into is focusing efforts on reducing the negative biases and stereotypes commonly aimed towards obese individuals, as evidence has shown that when individuals feel stigmatized due to their weight, they internalize those feelings and struggle harder to lose weight or become healthier in general (Major, Hunger, Bunyan, & Miller, 2014). The literature points to several reasons for the maintenance of this obesity stigma, including incorrect causal attributions (Pearl & Lebowitz, 2014) and emotions of disgust (Beames, Black & Vartanian, 2016). Many people place the blame of an individual's obesity solely on that person's character, with the assumption that obese individuals are lazy or lack willpower. However, in many cases, there are differing causes for obesity: genetics, socioeconomics, location and availability of healthy foods, and the microbiome (bacteria) of the gut, are among the vast multitude of reasons that a person might be overweight (Maes, Neale, & Eaves, 1997; Lee et al., 2014; Deweerdt, 2014). Narrowing the cause of obesity to *only* personal factors perpetuates a negative stereotype of people who are obese, causing obese individuals to be portrayed as simply unwilling to work to lose weight. This impression formation process of obese individuals has led to obesity stigma.

The purpose of the current work is to examine the social cognitive factors that might influence the expression of obesity stigma, especially as it pertains to general impressions, support for a friend suffering from an ostensibly unrelated medical issue, and endorsement of personal versus biological and environmental attributions for weight. First, this paper briefly reviews the literature on stigma, before delving into a review of the relevant social cognitive factors and theories. Lastly, a description of the current work is provided.

Stigma

Oftentimes, when an individual carries a characteristic that is less than desirable or out of the ordinary, society stigmatizes him or her. Stigma is defined as displaying a trait, behavior, or physical characteristic deemed "unworthy", which then serves as the basis for discrediting an individual and preventing the social acceptance of that person (Goffman, 1963). Expanding on this original definition, other researchers described stigma as being a "characteristic of persons that is contrary to the norm of a social unit" (Stafford & Scott, 1986). Overall, there is consensus in the wider literature that stigma ostracizes an individual with certain behaviors, traits, or characteristics from society.

Humans are social animals, and therefore perceiving a stigma against oneself can lead to increased feelings of depression, lower self-esteem, and less satisfaction with life (Sutin & Terracciano, 2013). One reason that stigmatization is associated with these decreases in well-being is because of internalized stigma. When an individual internalizes stigma, the individual begins to agree with the negative stereotype associated with their identity and may subsequently change their behavior in situations in which the stigma is salient (Major & O'Brien, 2005; Pearl et al., 2017). . This concept is known as the self-fulfilling prophecy, which occurs when an individual changes his or her behaviors in order to fit the role of a false belief placed on them by others (Rosenthal & Jacobson, 1968). Internalized stigma and the self-fulfilling prophecy both lead individuals to see themselves less positively, and their overall life satisfaction and general well being tends to decrease (Major & O'Brien, 2005). Studies have shown that individuals who internalize negative stigmas have a higher chance of developing and maintaining depression, especially in those individuals already at risk of psychosis (Pyle et al., 2015).

Furthermore, individuals who suffer from disorders such as depression might fail to seek help from professionals due to the negative stereotypes they face, further worsening their condition and their quality of life (Wang et al., 2015). Not only does stigma hurt individuals, stigma also negatively impacts society as a whole. For instance, internalized stigma can cause individuals to feel like they are not worthy of actively contributing to society (Pearl et al., 2017).

In addition to producing negative consequences in well-being, the self-fulfilling prophecy associated with obesity stigma tends to encourage the very behaviors that lead to weight gain. For instance, one study asked participants how often they experienced weight-based stigma, what form the stigmatization took (e.g., nasty comments from others, being excluded, and job discrimination), whom the negative comments typically came from, and how they coped with the stigmatization (Puhl & Brownell, 2006). In their study, 79% of participants claimed to cope with the stigma by eating more, 75% reported coping by refusing to diet, and 73% stated they used negative self-talk to deal with the pain of the stigma. Thus, obese individuals are often aware of the stereotypes that society holds about them, which then tends to make these individuals less likely to diet or eat healthier, which subsequently continues the cycle of obesity and the stigma associated with it.

Other work suggests that individuals on the receiving end of negative obesity biases can be less likely to lose weight due to a fear of being judged for exercising in public (Robinson, Boyland, Christiansen, Harrold, & Kirkham, 2014) and an increase in maladaptive eating behaviors (e.g., binging behavior, by consuming large amounts of calories in one sitting; Zuba & Warschburger, 2017). In one such experimental study,

overweight women primed with a message about the health implications of obesity

reported feeling less in control of their diet and exercise than the women who were not

primed (Seacat & Mickelson, 2009). The authors suggested that the stereotype threat

these women experienced affected their motivation and intended behaviors and also

noted that some of these women directly stated that the perceived discrimination they feel

due to their weight leads them to avoid situations in which their weight would be focused

upon (e.g., exercising).

Further work demonstrates that obesity stigma can also influence people who are

not currently obese, but who are concerned about becoming so. For instance, prior

experimental work indicates that for an individual who already believes he or she is

overweight, merely being exposed to messages that stigmatize obesity led to eating more

calories than would have occurred had they never seen the messages. This study also

found that individuals who are not currently overweight also tend to internalize these

negative stigma messages, and subsequently are more concerned about becoming

overweight in the future (Major, Hunger, Bunyan, & Miller, 2014). Therefore, many

studies show that individuals internalize the stigma associated with obesity, and that this

often leads to a self-fulfilling prophecy to act in a manner consistent with the

corresponding stereotypes.

Although the widespread stigmatization of obese individuals in the general public

is certainly disheartening and hurtful, even more pressing is the fact that obesity

discrimination has been documented widely in the medical field. Studies have found that

53% of overweight and obese women stated that they had received inappropriate

comments about weight from their healthcare professionals (Puhl & Brownell, 2006), and

that this weight discrimination from their doctors caused them to avoid seeking

preventive health care, including cancer screenings (i.e., breast and cervical cancers;

Wee, McCarthy, Davis, & Phillips, 2000; Mitchell, Padwal, Chuck, & Klarenbach, 2008).

In addition to explicit discrimination against obese patients, research has shown that the

implicit bias that some physicians have against their overweight patients leads to a lower

quality of healthcare for those individuals, even if the doctor does not directly

communicate their biases to the patient (Puhl & Heuer, 2010). Although the focus of the

current work is on general public attitudes towards obese individuals, this study also

investigates the extent to which obese friends deserve medical support for a health issue.

Finally, there are many reasons why stigmatizing individuals with obesity does

not work to reduce the incidence of obesity. First, obesity has a very complex etiology,

which extends well beyond factors within an individual's control (Avis, 2015). Some of

these alternative reasons for weight gain and obesity fall under biological and

environmental factors. In terms of genetics, studies in twins have shown that genetics can

explain between 50-90% of an individual's weight (Maes, Neale, & Eaves, 1997). As for

environmental links, research has been ongoing to identify certain chemicals that can lead

to excess weight gain and a lower metabolism. As just one example, scientists have

discovered that fetal exposure to nicotine via maternal smoking is a high risk for obesity

in the child later on in life (Thayer, Heindel, Bucher, & Gallo, 2012). Therefore,

although for some people changes in diet and exercise can help, for others these changes

may not produce sufficient weight loss.

The current work therefore examines whether social cognitive factors can alter

whether people perceive an obese individual in a negative light, support a hypothetical

obese friend with a medical problem, or endorse personal causes of obesity (as compared to biological or environmental factors). Now, a brief review of the theoretical framework that serves as the basis for the current study's hypotheses is provided followed by a description of the current work.

Affect and Cognition

Affect is an umbrella term that includes moods, emotions, and evaluations (Isbell & Lair, 2013). Moods are diffuse affective states that often do not have an eliciting cause and tend to be relatively long lasting. Emotions are usually shorter affective states, which are more intense, and often have a specific eliciting cause (i.e., the traffic jam made me so angry) as compared to moods (Keltner & Lerner, 2010). Evaluations are general valence-based preferences that one experiences, such as feeling positively or negatively about something or someone. Therefore, affective experiences are ubiquitous in daily life and have a large potential to influence everyday judgments and decisions. Although some people consider affect that produces a biasing influence on cognition, in many instances affect and cognition work together to produce adaptive judgments and decisions. For example, research shows that individuals with damage to fear-related brain regions tend to make poorer and more risky decisions (Damasio, 1994). Much of the time, affect helps guide cognition in useful ways to help individuals navigate a complex social environment.

There has been much research on the role of affect in information processing. One broad body of research demonstrates that affect can influence what one thinks, with positive feelings leading to positive judgments (and vice versa), this is often referred to direct judgment effects (Wyer, Clore & Isbell, 1999). A classic study showed that

positive mood from a sunny day led people to make more positive ratings of their life satisfaction, with the opposite pattern occurring on a rainy day (affect-as-information, Schwarz & Clore, 1983). In this way, mood provides a source of information when making a judgment.

A second broad body of work demonstrates that affect can also influence how one thinks, with positive affective states tending to encourage broad, abstract, and heuristic thinking, and negative affective states tending to encourage narrow, concrete, and systematic thinking (Schwarz & Clore, 2007). These types of affect-cognitive effects are often referred to as information processing effects, because affect influences the way in which information is attended to and subsequently incorporated into judgments. For example, one study found that people experimentally induced to feel happy (vs. sad), relied more on heuristics to process information and make judgments (Bodenhausen, Kramer, & Süsser, 1994). The affect-as-information account explains that an individual in a happy mood often feels safe or certain (Smith & Ellsworth, 1985), which means he or she does not need to carefully scrutinize the situation or environment. Thus, that individual can instead rely on big, broad thought processes to quickly process information (i.e., use mental shortcuts such as heuristics). However, an individual in a negative mood often feels threatened or uncertain, which means he or she needs to analyze more details in the situation in order to stay safe (Schwarz & Clore, 2007). Sometimes, this indirect processing effect can be demonstrated by positive moods directing attention to positive information, and negative moods directing attention to negative information (Petty, Schumann, Richman, & Strathman, 1993).

Although both direct judgment and processing effects have been replicated in the broader literature (Isbell & Lair, 2013), a recent theoretical development has demonstrated that this prior view of how affect influences information processing is somewhat one-sided. In the "affect-as-cognitive-feedback" model (Huntsinger, Isbell, & Clore, 2014; Isbell, Lair, & Rovenpor, 2013), affect actually does not cause a specific information processing style, but simply gives value to the already present processing style. This means that both happy and sad emotional states can lead to either broad or narrow information processing, depending on which processing style is already active (Isbell, Lair, & Rovenpor, 2016). This model is similar to the affect-as-information model, in that the current emotional state provides signals that can help an individual think and make judgments, all while the person remains largely unconscious of this happening.

As many people process information broadly by default (Navon, 1977) and in many experimental contexts (Clore & Huntsinger, 2009), this model importantly does not contradict the vast majority of prior findings. This is because happy (vs. sad) mood still leads to broadened (vs. narrowed) information processing in these contexts. However, there are many daily tasks and situations that produce narrowed thinking, and this recent theoretical approach also accounts for how affect works in these instances - with happy (vs. sad) mood leading to narrowed (vs. broadened) information processing.

For example, recent work has demonstrated this effect in impressions of a highly stigmatized outgroup: homeless individuals. In a recent study (Isbell et al., 2016), people who were already processing information concretely and induced with a positive mood were less likely to endorse situational factors versus personal factors in causing

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homelessness as compared to those in a negative mood. The opposite effect of affect emerged on these judgments when people were processing information narrowly. These results indicate that people who ultimately used abstract processing to make causal inferences about homelessness were more likely to endorse situational or environmental factors over personal ones. Thus, the interaction of these social cognitive factors can impact how an individual perceives a stigmatized outgroup.

Although prior work has established that affect can influence currently active information processing styles, the current work seeks to extend support for this theoretical approach by investigating whether affect can influence currently active construal levels. Therefore, the paper now turns to a brief overview of construal levels and impression formation, which is a particular type of information processing style that the current work investigates with regard to affect.

Construal Levels

Information processing styles have been studied extensively (Chaiken & Trope, 1999) throughout many psychological domains. Although the affect-as-cognitive-feedback account has researched global and local processing styles extensively, there has been considerably less research focused on construal levels. Although both global/local and construal level processes are highly related and overlapping cognitive theories that rely on abstract and concrete mindsets, construal levels and affect may not always interact in the same way. An individual can construe at a high level (associated with abstract thought) in which categories are often important, whereas low-level construal (associated with concrete thought) and in which individualizing elements are often important (Trope & Liberman, 2010). This theory generally considers that people form

mental constructs of objects not directly related to oneself, and that this is how one creates memories, speculations, and predictions about the world, others, and oneself.

One of the proposed mechanisms for this type of thought processing involves psychological distance. The farther away an object is psychologically perceived, the more likely it is to be viewed abstractly than concretely. Psychological distance can be influenced by spatial (e.g., near or far), temporal (e.g., close or distant), or social (e.g., polite or informal speech) factors (Trope & Liberman, 2010). This theory also proposes that as the psychological distance between an individual and a target increases, the abstractness of the mental construal also increases. The more abstract an idea, the less details used to think about that idea and the more general information used to think about its meaning and its context (Semin & Fiedler, 1988; Trope, 1986, 1989). A large part of this work also has to do with how psychological distance influences motivational goals.

A more specific type of construal level that likely has implications for social cognition is that of the self-construal (i.e., how one views the self; Brewer & Gardner, 1996; Markus & Kitayama, 1991). In general, people use self-schemas to form impressions of others and of the world in order to maintain their own sense of self (Green & Sedikides, 2001). People additionally make judgments about others in ways that align with their view of the world, which is inherently biased by their view of themselves (Alicke & Largo, 1995; Beauregard & Dunning, 1998; Lewicki, 1983). An important distinction in self-construal that seems to affect other aspects of cognition is that of the self (independent, "me") or collective (interdependent, "we") construal, which is determined by how much one incorporates relationships with others into the sense of self. Self and collective construal use are often studied in relation to cultural differences, as

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individuals from Western cultures tend to hold a self construal, whereas individuals from Eastern cultures tend to hold an collectivist construal, suggesting that this orientation can be considered chronic (Markus & Kitayama, 1991). Yet, these construals can also be manipulated experimentally, by priming people to think in terms of "I, me, myself" as compared to "We, us, ours", suggesting a situational element also exists for this style of thinking (Brewer & Gardner, 1996; Gardner, Gabriel, & Lee, 1999).

In general, the collective construal is associated with more attention and sensitivity to others, which promotes paying greater attention to the individuality of others in a social setting as compared to the self construal (Kitayama, Markus, Tummula, Kurokawa, & Kato, 1990). Similarly, when describing oneself, those with a self construal orientation are more likely to use abstract traits, such as "I am friendly", whereas those with a collective construal orientation are more likely to use narrower, more concrete descriptions, such as "I play tennis on the weekend" (Cousins, 1989). These studies, and others like it, suggest that self construal is associated with abstract processing, whereas the collective construal is associated with more concrete processing.

In contrast, however, research also demonstrates that those with a collective construal are typically found to attend to and endorse situational over personal attributes as compared to those with a self construal (Masuda & Nisbett, 2001) – a phenomenon that can be associated with abstract processing (Isbell et al., 2016). Further, inducing a collective construal when group membership is salient is also is associated with greater stereotype use, which is also associated with abstract processing (Oakes, 2008). In the case of a judging an outgroup member, one would anticipate a negativity bias in impression formation tasks as there is a general negative stereotype of outgroup

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membership. However, in the case of judging an ingroup member, one could anticipate a positivity bias in such tasks because of the positive stereotype associated with ingroup membership (Turner, Brown, & Tajfel, 1979). Research supports this notion, as individuals using a collective construal are more likely to use information related to interconnectedness to make judgments about others' sociability and competence than those using a self construal (Milyavskaya, Reoch, Koestner, & Losier, 2010). Specifically, this work found that those using a collective construal judged photographed targets more positively if they felt connected to them, than if they did not feel connected to them.

Therefore, the findings on whether self or collective construals are associated with abstract or concrete processing appear to be mixed and possibly dependent on the particulars of the social judgment task at hand. For these reasons, our study also seeks to add to the literature in this area. For the current work, we sought to determine how self and collective construal levels would influence how an obese ingroup member is judged, and further how affect might influence this relationship.

The Current Work

The primary goal of this study is to advance the literature in the areas of social cognition and obesity stigma. We hope to better understand the mechanisms of affect and construal level on impression formation, and to discover if affect and self and collective construal levels interact in the same manner that affect and global and local processing styles do. Therefore in the current study, we primed participants with either a self ("me") or collective ("we") construal, before manipulating affect (happy, sad, disgust). Then, participants were presented with information about either an obese or thin target that they

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shared a group membership with (i.e., a fellow student at the university), before responding to questions about 1) their general impression of the target, 2) whether or not they would support this individual in a medical context, and 3) whether they endorsed personal versus biological/environmental causes of weight.

In general, we expected participants to exhibit a negative bias toward obese targets as compared to thin ones, because obesity is a stigmatizing attribute. The specific way in which we suspected affect and construal level interact to influence such judgments, however, draws on the affect as cognitive feedback approach described above. Therefore, we hypothesized that those primed with a self construal and who were in the happy condition would be negatively biased toward the obese target because the shared ingroup membership is not as salient for this group (and therefore the general obesity stigma should present itself). These individuals in the happy condition would also be more likely to endorse personal factors in weight over biological/environmental factors (because they should be processing more concretely). We expected those primed with a self construal and in the sad condition, however, to be less negatively biased toward the obese target because the shared ingroup membership should be more salient for this group. These individuals in the sad condition should also be less likely to endorse personal factors in weight over biological/environmental factors (because they should be processing more abstractly). If affect does indeed provide feedback on social construal levels, we expect the reverse pattern to emerge under collective construal conditions for happy and sad conditions.

Because disgust is likely to have unique influence with regard to judgments of obesity in general, we had less firm predictions about how it would influence construal

level for these social cognitive tasks, but wanted to include it as a comparison to happy and sad conditions. For instance, there is much research that shows that disgust plays an important role in prejudice, as it heightens even unconscious biases (Desteno, Dasgupta, Bartlett, & Cajdric, 2004). Researchers have also seen that disgust strongly mediates (or explains) the relationship between anti-fat attitudes and the perceived personal controllability of weight (Vartanian, 2010). It can also be noted disgust is distinct among other negative emotions and that it more strongly leads to obesity biases (Vartanian, Thomas, & Vanman, 2013). We therefore hypothesized that those participants in the disgust condition would display a stronger obesity bias than those primed with either happiness or sadness. In terms of how or whether disgust might interact with construal level for such judgments, however, was more exploratory than the happy and sad conditions and therefore we had no firm predictions.

Chapter II.

Method

Participants

Participants were 425 undergraduate students at the University of Mississippi and all were at least 18 years of age ($M = 18.96$, $SD = 2.27$). Out of the 425 participants, 290 (68.2%) were female and 135 (31.8%) were male. Participant self-reported their ethnicity and the sample was 75.8% Caucasian, 14.6% African American, 5.4% Asian, 1.9% Biracial, 1.4% Hispanic, 0.2% Native American, and 0.2% Pacific Islander. All participants were enrolled in psychology courses and received one research credit for completing the study. That credit counted toward the required research component of all introductory psychology courses and as extra credit points in upper level psychology courses. Participants were recruited through the SONA web-based system. We also employed the use of recruiting emails to direct more students to participate in the study via SONA.

Tasks and Measures

All tasks and measures were approved by the University of Mississippi's Institutional Review Board (IRB).

Construal Priming Task (A-1). In order to prime different construal levels, participants were asked to circle pronouns that were presented during a brief story about traveling to a city (Brewer & Gardner; 1996). This is a widely used measure that has been shown to reliably prime these different perspectives. Participants were randomly assigned

to either a self (independent, "me") or collective (interdependent, "we") construal condition. In the self construal condition, the text was written using singular pronouns (e.g., I, me, and my). In the interdependent condition, all pronouns were changed to plural pronouns (e.g., us, we, and ours). The participants were instructed to read the story and then circle all of the pronouns throughout the text. After this task, participants placed the completed task back in the folder on the desk and turned their attention to the computer, which presented the remainder of the study.

Emotion Manipulation Videos. Participants were randomly assigned to one of three emotion conditions (sadness, happiness, or disgust) in which they watched a short video clip. The sad video was a clip from Disney's *The Lion King* (scene where Simba's father, Mufasa falls to his death; Gross & Levenson, 1995); the happy video was a compilation of cute puppy videos; finally, the disgusting video was a clip of a bed bug infestation.

Impression Formation Tasks and Judgments (A-2). In this task, we told participants that people had provided stories about themselves in a prior study, and then those same people had designed digital avatars that looked like them to display alongside their stories. We asked participants to form an impression of Sarah and presented some basic information about Sarah, including her major (i.e., English), and her interests (i.e., attending baseball games, hanging out with friends, going to graduate school, and being involved with a few campus clubs). Alongside this information, we also displayed one of two digital avatars: one version was an obese woman, whereas the second image was a thin woman. Both images were exactly alike except with different body types so as to control for all other variables (e.g., skin color, hair color, facial expression, outfit; see

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Appendix 2). The second part of this task asked participants to rate Sarah's general favorability and asked to what extent she held certain personality traits (following commonly used impression formation measurement procedures from Isbell, 2004). In the favorability task, participants rated their feelings toward Sarah on a feeling thermometer, using a scale of 0-100 and were told, "Ratings between 50 and 100 mean you feel favorable toward the person. Ratings between 0 and 50 mean you don't feel favorable toward the person and that you don't care too much for the person." Then, in the traits task, participants were asked, "To what extent do you think the word warm describes Sarah?" and responded on a 7-point scale (1- *Not at all* to 7- *Very Much*) for 20 different traits (warm, intelligent, generous, lazy, agreeable, proud, self-controlled, adventurous, confident, organized, likeable, unfriendly, independent, slob, sociable, anxious, energetic, introverted, and cold). Negative traits were reverse scored, and then were averaged together with the positive traits to create a positive trait composite score (Cronbach's α = .86).

Friend Support for Medical Care (A-3). Participants answered questions that were created specifically for this study to assess whether someone would support Sarah in seeking or receiving medical care. The task consisted of reading a brief text that described a medical issue Sarah had been having lately. Migraines were used as the medical condition in an attempt to use an ailment with a somewhat low lay-person belief that it could be linked it to weight-related causes (as opposed to ailments such as knee pain, chest pain, or feeling out of breath). For instance, we asked participants to imagine that they were Sarah's friend and that they had recently learned about her migraine problem. For example, the vignette told participants, "Sarah has been having terrible

migraines lately… Most days, they are so bad that she lies in bed all day with a cold cloth on her head, trying to sleep to ease the pain… She also frequently becomes nauseated due to the extreme pain (for full wording see *Appendix 3*)." After presenting the participants with this information, we then asked the participants to respond to several items that assessed their support for Sarah to seek medical care on a 7-point scale (1- *Not at all* to 7- *Very Much*). For example, one item asked "If you were friends with Sarah, to what extent would you recommend that Sarah go to the doctor for her migraine symptoms?", whereas another item asked, "To what extent do you believe Sarah is accurately describing her level of pain?" These friend support items were averaged together to create a composite score for this variable (Cronbach's α = .71). At the end of this questionnaire, we additionally asked participants to respond to several exploratory, open-ended questions that could be used to inform future research, such as, "Do you think Sarah's doctor MIGHT treat her differently than another patient experience similar symptoms? Explain your answer." These items can be found in *Appendix 3*.

      Attribution Questionnaire (A-4). In this task, participants completed an attribution questionnaire containing 27 questions concerning their opinions on the cause of an individual's weight status (Pearl & Lebowitz, 2014). The task included nine items in 3 causal categories: personal attributions, biological attributions, and environmental attributions. Personal attributions included topics such as willpower and exercise habits, biological attributions included topics such as metabolic rate and gut microbiome, and environmental attributions included topics such as the marketing of various foods and a person's socioeconomic status. This questionnaire was adapted from prior work Pearl and Lebowitz, (Pearl & Lebowitz, 2014) to assess how attributing weight status to differing

causative agents can affect weight loss beliefs and stigmatizing attitudes. Participants responded on 7-point scale (1- *Not at all* to 7- *Very Much*). The nine items for personal attributes were averaged together (Cronbach's α = .76). As prior work examined internal vs. external attributions (Isbell et al., 2016), we averaged the biological and environmental items into one composite score (Cronbach's α = .83). At the end of this questionnaire, participants were also asked an exploratory, open-ended question "If there are any other reasons that you believe an individual might be a certain weight (NOT listed above), please list those attributions below." Only 18 participants out of 425 responded to this item, which indicates that many people felt that the attribution questionnaire was inclusive of most reasons why people may be overweight.

Affect Manipulation Check (A-5). To assess how participants felt while they watched the video clip, we adapted a commonly used and reliable scale, the Positive and Negative Affect Schedule (PANAS; Watson, Clark & Tellegen, 1988). This scale is an easily deliverable, relatively short, and easy to understand method for valid and reliable measures of positive and negative affect levels. We adapted the PANAS to contain 15 items that concerned the participant mood and emotions while watching the videos from the beginning of the study. Participants responded on a 5-point scale (1- *Clearly describes my feelings* to 5- *Does not describe my* feelings), meaning that low scores on the items indicate higher felt emotion. Items included the following emotions: happy, sad, disgusted, enthusiastic, upset, cheerful, sickened, depressed, grossed out, inspired, angry, amused, devastated, joyful, and anxious. From these, we combined similar items for the three target emotions: disgust (disgusted, sickened, grossed out; Cronbach's α = .93),

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happy (happy, cheerful, inspired, amused, joyful, enthusiastic; Cronbach's α = .96), and

sad (sad, upset, depressed, and devastated; Cronbach's α = .93).

Exploratory scales for later research. Before completing a demographics

questionnaire and answering some questions about the experimental session, participants

were first asked to respond to two surveys that were included as exploratory scales that

could be used in later research. Although these scales are described here so that a full

disclosure of the method is given, no analyses with these measures are included in the

current paper.

Need for Cognition. The Need for Cognition scale consists of 18 statements to be

ranked from "extremely uncharacteristic of me" to "extremely characteristic of me" and

measures a person's tendency to participate and enjoy activities that require a decent

amount of thinking (Cacioppo, Petty, & Kao, 1984). Participants responded on a 5-point

scale, (1- *Extremely Uncharacteristic of me* to 5- *Extremely characteristic of me*).

Examples items include "thinking is not my idea of fun" and "I prefer to think about

small, daily projects to long-term ones."

Disgust Propensity and Sensitivity Scale-Revised. In order to assess disgust

sensitivity, we used the Disgust Propensity and Sensitivity Scale-Revised (Olatunji et al.,

2007). Participants responded to 14 items that ask to what extent they agree with each

statement (1- *Strongly Disagree* to 5- *Strongly Agree*), such as, "If I see someone vomit,

it makes me sick to my stomach," Then they responded to 13 items that asks how

disgusting they believe each statement is (1- *Not disgusting at all* to 5- *Extremely*

Disgusting), such as, "You see someone put ketchup on vanilla ice cream, and eat it."

Demographics Information. Lastly, participants completed a basic demographic survey, in which we asked for information such as their gender, race, and age. We also asked questions about the experiment itself. For instance, an attention check question was included to determine if participants could recall that Sarah's medical condition was migraines.

Procedure and Design

We recruited participants via the participant pool in the psychology department. Participants first read and signed a consent form. After entering the computer lab to begin the study, they were instructed to complete the Pronoun Priming Perspective Task. Participants were randomly assigned to one of two conditions, the self (independent, "me") or collective (interdependent, "we") construal level. After completing this task, they then completed the remaining tasks on the lab computer through a qualtrics survey, beginning with random assignment to the video affect manipulation (happy, sad, or disgust), and random assignment to the body type presentation of the target (obese vs. thin). Then participants rated the target's favorability and likelihood to possess certain personality traits. In the next task, participants read a brief synopsis of the target's migraine problem. We then asked the participants to complete the friend support measure and the attribution questionnaire. Next, individuals completed the PANAS, which served as an affect manipulation check. Then, participants completed two exploratory measures: the Need for Cognition Survey, and the Disgust Propensity and Sensitivity Scale Revised. Lastly, participants were asked to respond to several demographic questions and answer questions about the experimental session. After these tasks and questionnaires,

participants were debriefed on the true purpose of the study and were awarded their research credit on SONA.

Participants were randomly assigned to conditions in a 3 (emotion: disgust, happy, sad) x 2 (construal: self vs. collective) x 2 (target body type: obese vs. thin) between subjects factorial design. The dependent measures of interest include impression formation judgments, friend support items, and attributions for obesity.

Chapter III.

Results

Affect Manipulation Check

In order to determine if our affect manipulation was successful, we included happy, sad, and disgusting composite self-reports as a repeated measures factor in a mixed analysis of variance (ANOVA) alongside the between subject factors of construal level (self vs. collective), emotion (happy, sad, disgust), and target body type (obese vs. thin). Our results revealed that the affect manipulation was indeed successful. There was a significant interaction between self-reported emotion and the affect manipulation, $F(4,824) = 1103.825, p < .001$. Post-hoc Bonferroni corrected simple effects (means and standard deviations shown in *Table* 1) indicate that participants in the happy condition were happier than those in the disgust condition ($MDiff = -2.67, SE = .07, p < .001$) and those in the sad condition ($MDiff = -2.55, SE = .07, p < .001$). Furthermore, participants in the sad condition reported more sadness than participants in the disgust condition ($MDiff = -2.02, SE = .09, p < .001$) and the happy condition ($MDiff = -2.83, SE = .89, p < .001$). Finally, participants primed with disgust felt more disgusted than those in the sad condition ($MDiff = -2.09, SE = .09, p < .001$) and the happy condition ($MDiff = -3.33, SE = .09, p < .001$).

When comparing participant's affective responses within each emotion condition with post-hoc Bonferroni corrected simple effects, participants primed with disgust reported feeling more disgust than happiness ($MDiff = -3.22, SE = .09, p < .001$) or

sadness (*MDiff* = -2.47, *SE* = .07, *p* < .001). Participants in the sad condition reported feeling more sadness than happiness (*MDiff* = -2.43, *SE* = .08, *p* < .001) or disgust (*MDiff* = -1.63, *SE* = .07, *p* < .001). Finally, participants in the happy condition reported feeling more happiness than sadness (*MDiff* = -2.74, *SE* = .08, *p* < .001) or disgust (*MDiff* = -2.78, *SE* = .09, *p* < .001). There was also a significant main effect of the repeated measure factor, self-reported emotion, $F(2,824) = 54.820$, *p* < .001, which only indicates that there were differences across the reports of emotion, overall. No other effects were significant (all *p*s > .38), indicating that only the emotion condition influenced self-reported emotional responses. These results indicate that our affect manipulation was successful.

A cursory examination of the remaining affect items not included in the composite emotion scores (angry and anxious) revealed that those in the sad condition reported feeling more angry (*Note.* lower scores indicate higher felt emotion; *M* = 2.55, *SD* = 1.25) than those in the disgust (*M* = 4.21, *SD* = 1.07) or happy (*M* = 4.98, *SD* = .119) conditions, $F(2,409) = 239.89$, *p* < .001. For the anxious item, those in the happy condition reported feeling less anxious (*M* = 4.71, *SD* = .72) than those in the sad (*M* = 3.20, *SD* = 1.25) or disgust (*M* = 3.41, *SD* = 1.35) conditions, $F(2,411) = 71.98$, *p* < .001.

Feeling Thermometer and Traits

In order to determine if construal level (self vs. collective), emotion (happy, sad, disgust), or target body type (obese vs. thin) influenced the general favorability of the target, a between-subjects ANOVA was conducted. Results show that participants rated the woman on the feeling thermometer as less favorable if she was obese (*M* = 61.32, *SD*

= 18.23) as compared to thin (M = 68.82, SD = 15.30), $F(1,412) = 21.28$, $p < .001$. No

other effects were significant (all ps > .17).

In order to determine if construal level (self vs. collective), emotion (happy, sad,

disgust), or target body type (obese vs. thin) influenced the endorsement of positive

personality traits, a between-subjects ANOVA was conducted. Results show the same

pattern as above, as a significant difference emerged in the participants' endorsement of

positive traits depending on if she was obese (M = 4.88, SD = .61) or thin (M = 5.19, SD

= .63), $F(1,412) = 26.89$, $p < .001$. No other effects were significant (all ps > .18). These

analyses, taken together, demonstrate that our body type manipulation was successful,

with participants generally viewing the obese target less favorably than the thin target.

Friend Support

To determine if the experimental conditions influenced the extent to which people

supported their friend in a medical context, we conducted a between subjects ANOVA.

Our results revealed there was a significant interaction between body type and emotion,

$F(2,412) = 3.98$, $p = .019$. Post hoc bonferroni corrected simple effects revealed that

participants who were primed with a sad emotion were more likely to support a thin

friend compared to an obese friend ($MDiff$ = .27, SE = .11, p = .015), whereas the

relatively opposite pattern was seen in participants primed with the happy emotion ($MDiff$

= -.17, SE = .11, p = .12). Those in the disgust condition were equally likely to support

the target ($MDiff$ = .05, SE = .11, p = .67). When comparing across emotion conditions

within each body type condition, there were no differences in friend support for the thin

body type, but there were significant differences for the obese body type, $F(2,412) =$

5.84, p = .003. Within this analysis, the only significant pair-wise difference (bonferroni

corrected) emerged between happy and sad conditions (*MDiff* = .38, *SE* = .11, *p* = .002).

This indicates that when judging an obese target, participants in the happy condition

would give more emotional support and would encourage an obese friend to seek medical

attention as compared to participants in the sad condition (*Figure 1*). The means and

standard deviations are listed in *Table* 2.

Personal versus Environmental/Biological Attributions for Obesity

To determine if the experimental conditions influenced the extent to which people

endorsed personal or environmental/biological attributions for obesity, we performed a

mixed ANOVA. There was a main effect of personal vs. biological/environmental

attributions, $F(1,412) = 903.66$, $p < .001$ (see *Table* 3 for means and standard deviations).

There was also a significant interaction between construal level, target body type, and

attribution (personal or biological) endorsement, $F(1,412) = 5.31$, $p = .02$. Overall, an

individual primed with a self construal endorsed more personal attributions than

biological/environmental attributions when presented with an obese target compared to a

thin target (see *Figure 2* and *Table 4*). In contrast, an individual primed with a collective

construal endorsed more personal attributions than biological/environmental attributions

when presented with a thin target compared to an obese target. None of the post-hoc

bonferroni corrected simple effects were significant, which makes the differences relative

ones. No other effects were significant (all *p*s > .064).

Exploratory Analyses

We additionally explored gender as a factor, as it was thought that men and

women could differ in their judgments of the target. However, because this was not a

core aspect of our research question, we had not recruited equal numbers of male and

female participants. As we only had 135 men in our sample (31.8%), and did not randomly assign to conditions on the basis of gender, the following analyses should be interpreted with caution due to low statistical power (our smallest cell for men had only 7 participants, whereas our smallest cell for women had 21 participants).

Feeling Thermometer and Traits. In order to determine if construal (self vs. collective), emotion (happy, sad, disgust), target body type (obese vs. thin), or gender (male vs. female) influenced feeling thermometer ratings of the target, a between-subjects ANOVA was conducted. Results show the same pattern as reported above, as feelings toward the woman depended on if she was obese ($M = 59.70$, $SD = 18.23$) or thin ($M = 68.28$, $SD = 15.30$), $F(1,400) = 23.58$, $p < .001$. There was also a significant difference between how men and women rated the woman, in general, $F(1,400) = 11.95$, $p = .001$, as men rated the target as slightly lower ($M = 60.94$, $SD = 17.41$) than women did ($M = 67.04$, $SD = 16.71$). No other effects were significant (all ps > .10).

In order to determine if construal (self vs. collective), emotion (happy, sad, disgust), target body type (obese vs. thin), or gender (male vs. female) influenced the endorsement of positive personality traits, a between-subjects ANOVA was conducted. Results show the same pattern as above, as a significant difference emerged in the participants' endorsement of positive traits depending on if she was obese ($M = 4.84$, $SD = .61$) or thin ($M = 5.16$, $SD = .63$), $F(1,400) = 23.92$, $p < .001$. There was also a significant difference between how men and women rated the woman, $F(1,400) = 8.28$, $p = .004$, as men rated the target as slightly lower ($M = 4.91$, $SD = .58$) than women did ($M = 5.10$, $SD = .65$). No other effects were significant (all ps > .20). These analyses, taken together, demonstrate that our body type manipulation was successful even when

considering gender, with participants generally viewing the obese target less favorably than the thin target. Importantly, although there was a general difference in favorability for men and women, this did not vary as a function of target body type, construal level, or emotion condition. For this reason, we feel confident that including both men and women in the analyses reported above was appropriate.

Questions About Experimental Session

  Task difficulty. We asked the participants how difficult they perceived the pronoun-circling task to be on a 7-point scale, (1- *Not at all* to 7- *Very*). There was a slight difference in difficulty reported between the construal level conditions, $F(1,409) = 4.89$, $p = .027$, such that participants in the self-construal condition reported the task to be easier ($M = 2.47$, $SD = 1.66$) compared to those in the collective-construal level condition ($M = 2.85$, $SD = 1.80$). These means, however, also indicate that participants thought the tasks were not very difficult, we therefore feel that this slight difference in perceived task difficult is not likely to have affected other aspects of the study.

  Identify the medical issue. In order to determine if participants read and remembered the information about Sarah's medical condition, we asked the participants to identify the medical issue that we stated Sarah suffered with the in the medical questionnaire task. We gave heart problems, migraines, and epilepsy as the 3 option choices, and an overwhelming majority (99.3%, n=422) correctly identified migraines as the medical issue.

Chapter IV.

Discussion

First, the results of our study confirmed a general bias against obese individuals – on average, participants rated the obese woman worse on the feeling thermometer and positive trait ratings than they did the thin woman, given the exact same basic information. As the only difference between the two conditions was the target's weight, this study provides additional support that people feel more negatively about overweight individuals than thin individuals. However, our hypotheses about how affect and construal level would interact to influence general impressions of the target were not upheld, nor were independent effects of emotion or construal level. This suggests that either emotion and construal level do not interact to influence such judgments, or that the obesity stigma for this judgment was so strong that it overrode any slight differences that may have emerged between such conditions.

Second, target body type and emotion influenced the level of friend support for medical care. Specifically for the friend support measure, thin targets were given equally high levels of friend support, regardless of the emotion condition, whereas obese targets were given a high levels of friend support in the happy and disgust conditions, but a lower level of support in the sad condition. When considering the relative differences between target body types within each emotion condition, those in the sad condition gave a higher level of friend support to a thin target compared to an obese target. In contrast, those in the happy condition showed the relatively reversed pattern, in which more friend

support was given to the obese target compared to the thin target. Unexpectedly, those in the disgust condition gave equally high levels of friend support to the obese and thin targets. Notably, affect and construal level did not interact to influence whether or not to support a friend with a medical issue. This suggests that either these constructs do not interact for such judgments, or that people are using affect in a different manner than we predicted. For instance, the sad and happy conditions align with prior work on how emotion can direct attention to certain types of information, such that negative emotions lead people to focus on negative information, whereas positive emotions lead people to focus on positive information (Petty et al., 1993). Therefore, instead of emotion providing feedback on construal levels, it is possible that emotion directed attention in another way in the current work. In the disgust condition, it seems that our participants may have corrected for their affect, as people are not passive during such tasks, and can consciously or unconsciously correct for their mood when making judgments in which they feel an emotion may bias their thoughts (Schwarz & Clore, 1983). Therefore, it is possible that people in the disgust condition who were presented with an obese target made an unconscious correction to eliminate the effects of emotion.

Third, target body type and construal level influenced the types of attributions made about weight. Specifically, those primed with a self construal demonstrated a larger leaning toward making personal over biological/environmental attributions for weight, as compared to those primed with a collective construal. This partially supported our hypotheses about how construal level would influence judgment of these targets, as a collective construal should lead to more situational and contextual attributions, whereas a self construal would lead people to focus more on individuating behaviors and personal

attributions. We did not, however, obtain any interaction between affect and construal level.

We had hypothesized that emotion would influence the type of construal level that participants would use when making judgments, with happiness promoting the primed construal level, and sadness negating it. Our hypothesis regarding the interaction between emotion and construal level was not supported, as emotion did not provide feedback on the construal level for any of our measures. There are several reasons these constructs might not have interacted like we thought they would. First, we based our hypotheses off of previous studies in which there was an interaction for affect and global vs. local processing styles. We thought that employing self vs. collective construals could yield similar results; however, it is possible that these perspectives do not work the same way on cognition and therefore may not be sensitive to differences in emotion. The mixed literature on whether people use abstract or concrete processing under such social construals may suggest that these constructs produce less reliable outcomes, which would reduce predictive power about their effects. Another potential explanation is that the self and collective construal still both include the individual (as the individual is still included in the "we" perspective). This may mean that there are not large enough differences in how these perspectives influence cognition for emotion to act upon them. Future work should also manipulate an outgroup or "other" construal level (e.g., they, theirs, them), as that construal level may induce a larger cognitive difference from the self or collective perspectives.

Additionally, our results suggest that judgments related to obesity may be differentially sensitive to emotion and cognition. For instance, our results show that

emotion might interact more with the social aspects of obesity stigma (the level of support given to a friend), whereas construal level influences the more cognitive aspects of obesity stigma (attributions given for being a certain weight).

Implications, Future Directions, and Limitations

First, we have added to a rather large body of evidence that shows that there is generally a more negative opinion of obese individuals than thin individuals, simply based on first judgments and appearances. This is something that our society should spend more resources on, as research described above suggests that stigma does not help people lose weight or become healthier; it actually does the opposite and contributes to the United States' increasing obesity epidemic. Second, we also found that happy (and disgusted, though we suspect correction effects occurred for this condition) individuals are more supportive (vs. sad individuals) of an obese friend in receiving treatment for a medical issue. Thus, there is a possibility that future interventions to reduce obesity stigma could include inducing more positive emotions to help people feel more empathetic and supportive of obese individuals, thus creating a more inclusive environment and helping reduce an overall bias against overweight people. Third, our results also demonstrated that although all participants were prone to believing more in personal versus biological/environmental attributions for weight, those primed with a self construal demonstrated a larger gap between these different attributions for weight, as compared to those primed with a collective construal. This is important because if we can find a way to guide people to a collective way of thinking for ingroup members, we can work on reducing the stereotype that obese individuals are solely and personally at fault for their weight.

For future studies, it would be valuable to investigate how emotion and construal level might influence medical professionals' judgments of obese and thin body types. We have particular interest in how a medical profession might react to an obese individual's medical problem differently from a thin individual's medical treatment (e.g., diagnostic error rate, treatment recommendations, believability of symptoms).

There were some limitations in our study that merit mention. First, in the impression formation task we used a digital avatar in order to control for additional confounding variables, but there is a chance the lack of realism with the avatar may have influenced the judgments that people made about our target. For instance, pictures of a real individual could have led to either more or less obesity stigma than that which we found in our study. Thus, it might be worth taking an image of a real person and manipulating the weights via photo-editing software for future work, rather than relying on a digital image. Second, although we did find some main differences in how men and women responded to the favorability of our target, we did not recruit equal numbers of men and women or randomly assign them to conditions, which precluded our ability to make robust statistical comparisons within our experimental factors. Future work should therefore attempt to recruit equal numbers of men and women to examine the role that gender may play in these judgments.

Overall, we found evidence that emotion and construal level do influence judgments about obese individuals, but did not find evidence that they interacted to jointly influence judgment. This work, however, provides an initial step for future research into how subtle emotional or cognitive manipulations can influence judgments about a stigmatized identity, which could eventually lead to developing interventions that

could combat this stigma. Our society needs to find a way to accept obese individuals the same way we accept thinner individuals. It is only through equal encouragement, empathy, and understanding that our country has a chance in fighting our current obesity epidemic and improving the overall health of our nation's population.

A-1

Construal Priming Task (Brewer & Gardner, 1996)

1. Independent (Self) Perspective Task

Please read the following paragraphs and circle all of the times you see the following words: I, me, my, you, yours, yourselves. Please read carefully and play close attention to make sure you have circled each one.

I recently went on a trip and I had the best time! I went to the city and really had so much fun! To me, the city is the best place to be. You have so many opportunities to see and do different things, and there are tons of new people for you to meet. I went to the city to visit my friends and to do some sightseeing by myself. I met up with my friends for breakfast on the first day at a café. I was so excited to see everyone because it had been a long time since we had hung out together. I was also excited to try out the café because it is supposed to be one of the best ones in the city! And I certainly think it lived up to its reputation, I doubt there's anywhere else where you could get such delicious pastries! The coffee was really good too! I had heard people complain that the portions weren't very big, but there was more than enough to satisfy me! Plus, across the street from the café was a park where some people were playing music. That was really cool because then I got to enjoy the live music while I ate my breakfast; it was like being at a free concert!

Afterwards I decided to go sightseeing and catch up with my friends later in the day after they left work. I agreed to meet up with them for dinner. There was another restaurant that I'd heard had great reviews and wanted to try. My friends thought it sounded like an awesome idea and since the restaurant was new, they had never tried it before either. That's one thing I really love about the city; you can always get the best food there! I think I could eat at a different restaurant for every meal and always get something new and tasty. Before I left the café I asked my

friends for recommendations of places to visit while I was in town. I already wanted to stop by the historic district and have a look around. My friends told me that I should also check out another part of the town where there are a lot of interesting art galleries, coffee shops, and bars; "It's a great spot for people watching!" they told me. It sounded like a fun idea, so I made sure to flag the area on my GPS app. I then said my goodbyes to my friends and set off on my way!

I decided to make my visit to the historic district the first part of my day. I love looking at all the interesting old buildings and learning about all the different things that have happened in the city. I like to learn about all the famous people who have lived there, and hear about their lives. It's also fascinating to think about how much has changed over time. I sometimes wonder what it would have been like for me to have been alive back then. I also really enjoy learning about the spookier parts of the city's history; it's a bit cheesy but I really enjoy going on ghost tours. I'm not sure whether or not I believe half of the things they tell you, but you can still learn a lot of neat facts along the way. Lastly, whenever I'm in a historic area I like to stop by the different gift shops and buy postcards or small trinkets for my family.

After going through the historic area I went down to the other part of town that my friends recommended I spend time in. There were lots of unique boutiques, interesting art galleries, casual bars, and even some street performers! I thought it was really different and cool and I had a fun time doing some people watching. I walked into some of the galleries and looked at the artwork. Some of the art was really beautiful, but some of it was a bit odd in my opinion. After that I went into some of the stores, each one sold something different. Some sold clothes, some sold souvenirs, some sold records and music, some sold books, and others sold a variety of things. I really enjoyed window shopping, though a lot of the items in the stores were too expensive in my opinion. Afterwards I got a snack from a food truck and sat on a bench enjoying the pretty weather. That's another thing I really enjoy about the city, the weather is always really nice; you are never too hot or too cold. After spending some time watching the street performers I went back to my hotel to take a nap before I met my friends for dinner.

All in all I really enjoyed my trip to the city. I was very happy to get to see my friends. I also had a ton of fun checking out the historic area, and people watching and window shopping in the trendier part of town. I always have fun when I go to the city; it's really the best place! The food is delicious and there's so much to see and do. You are really guaranteed to have a great time no matter who you are if you visit. Everyone should go some time!

2. Interdependent (Collective) Perspective Task

Please read the following paragraphs and circle all of the times you see the following words: we, they, them, us, ours, ourselves). Please read carefully and play close attention to make sure you have circled all of them.

We recently went on a trip and we had the best time! We went to the city and we really had so much fun! To us, the city is the best place to be. We had so many opportunities to see and do different things, and there were tons of new people for us to meet. We went to the city to visit our friends and to do some sightseeing by ourselves. We met up with our friends for breakfast on the first day at a café. We were so excited to see them because it had been a long time since we had hung out with them. We were also excited to try out the café because it is supposed to be one of the best ones in the city! And we certainly think it lived up to its reputation, we doubt there's anywhere else where you could get such delicious pastries! The coffee was really good too! We had heard people complain that the portions weren't very big, but there was more than enough to satisfy us! Plus, across the street from the café was a park where some people were playing music. That was really cool because then we got to enjoy the live music while we ate our breakfast; it was like we were at a free concert!

Afterwards we decided to go sightseeing and catch up with our friends later in the day after they left work. We agreed to meet up with them for dinner. There was another restaurant that we'd heard had great reviews and wanted to try. Our friends thought it sounded like an awesome idea and since the restaurant was new, they had never tried it before either. That's one thing we really love about the city;

you can always get the best food there! I think we could eat at a different restaurant for every meal and always get something new and tasty. Before we left the café we asked our friends for recommendations of places to visit while we were in town. We already wanted to stop by the historic district and have a look around. Our friends told us that we should also check out another part of the town where there are a lot of interesting art galleries, coffee shops, and bars; "It's a great spot for people watching!" they told us. It sounded like a fun idea, so we made sure to flag the area on our GPS app. We then said goodbye to our friends and set off on our way!

We decided to make our visit to the historic district the first part of our day. We love looking at all the interesting old buildings and learning about all the different things that have happened in the city. We like to learn about all the famous people who have lived there, and hear about their lives. It's also fascinating to think about how much has changed over time. I sometimes wonder what it would have been like for us to have been alive back then. We also really enjoy learning about the spookier parts of the city's history; it's a bit cheesy but we really enjoy going on ghost tours. We're not sure whether or not we believe half of the things they tell you, but you can still learn a lot of neat facts along the way. Lastly, whenever we're in a historic area we like to stop by the different gift shops and buy postcards or small trinkets for our family.

After going through the historic area we went down to the other part of town that our friends recommended we spend time in. There were lots of unique boutiques, interesting art galleries, casual bars, and even some street performers! We thought it was really different and cool and we had a fun time doing some people watching. We walked into some of the galleries and looked at the artwork. Some of the art was really beautiful, but some of it was a bit odd in our opinion. After that we went into some of the stores, each one sold something different. Some sold clothes, some sold souvenirs, some sold records and music, some sold books, and others sold a variety of things. We really enjoyed window shopping, though a lot of the items in the stores were too expensive in our opinion. Afterwards we got a snack from a food truck and sat on a bench enjoying the pretty weather. That's another thing we really enjoy about the city, the weather is always really nice; it is

never too hot or too cold. After spending some time watching the street performers we went back to my hotel to take a nap before we met our friends for dinner.

All in all we really enjoyed our trip to the city! We were very happy to get to see our friends. We also had a ton of fun checking out the historic area, and people watching and window shopping in the trendier part of town. We always have fun when we go to the city; we really think it's the best place! The food is delicious and there's so much to see and do. Everyone is really guaranteed to have a great time no matter who they are if they visit. We think everyone should go some time!

Impression Formation Tasks/Favorability and Trait Rating Task (Isbell, 2004)

Impression Formation Task:

In this study, we are interested in how people form impressions about a variety of different individuals. In a prior study, we surveyed students about some recent life events, and general information about them. The students then created their own digital avatar in order to protect their identity, and they constructed the avatar to match their characteristics.

Below is a randomly presented student description from that study. Please read the description and then try to form an impression.

This student presented below is Sarah. She is a senior English major who enjoys hanging out with her friends on the weekend and is interested in attending graduate school. She likes going to baseball games and is involved in a few clubs on campus.

Once you feel like you've had enough time to form an impression of Sarah, please continue to the next page. [*Note*. Only one image was displayed to participants.]

Favorability:

 Please rate Sarah using the "feeling thermometer". You may type in any number from 0 to 100 for rating. Ratings between 50 and 100 mean you feel favorable toward the person. Ratings between 0 and 50 mean you don't feel favorable toward the person and that you don't care too much for the person. Please insert the appropriate number below.

Trait Rating:

 Please select to what extent the student in the previous image, Sarah, has the following personality traits on a scale from 1-7 (1- *not at all*, 4 - *somewhat*, 7 - *very much*).

1. To what extent do you think the word warm describes Sarah?
2. To what extent do you think the word intelligent describes Sarah?
3. To what extent do you think the word generous describes Sarah?
4. To what extent do you think the word lazy describes Sarah?
5. To what extent do you think the word agreeable describes Sarah?
6. To what extent do you think the word proud describes Sarah?
7. To what extent do you think the word self-controlled describes Sarah?
8. To what extent do you think the word adventurous describes Sarah?
9. To what extent do you think the word confident describes Sarah?
10. To what extent do you think the word organized describes Sarah?
11. To what extent do you think the word likeable describes Sarah?
12. To what extent do you think the word unfriendly describes Sarah?
13. To what extent do you think the word independent describes Sarah?
14. To what extent do you think the word slob describes Sarah?
15. To what extent do you think the word sociable describes Sarah?
16. To what extent do you think the word anxious describes Sarah?
17. To what extent do you think the word energetic describes Sarah?
18. To what extent do you think the word extroverted describes Sarah?
19. To what extent do you think the word introverted describes Sarah?
20. To what extent do you think the word cold describes Sarah?

A-3
Friend Support Measure

We are not only interested in how people form impressions of other people, but also how people might give advice to others. Thinking back to Sarah, imagine you are her friend and you've learned the following information recently.

Sarah has been having terrible migraines lately. For the past few months, twice a week she wakes up with a terrible headache. Most days, they are so bad that she lies in bed all day with a cold cloth on her head, trying to sleep to ease the pain. She keeps the curtains closed and avoids turning on any lights or listening to music or watching television because even normal levels of light and sound make her pain worse. She also frequently becomes nauseated due to the extreme pain. She has not found any over-the-counter medications that work. Due to her pain, nausea, and sensitivity to light and sound, Sarah cannot go to work, cannot do any physical activity, and cannot even interact with her family or friends when she is having a migraine.

Answer the following questions, thinking about the information that you just read. Select you answer on a scale from 1-7 (1 - *not at all*, 4 - *somewhat*, 7 - *very much*).
.
1. If you were friends with Sarah, to what extent would you recommend that Sarah go to the doctor for her migraine symptoms?
2. To what extent would you feel sympathy for Sarah?
3. To what extent do you believe that Sarah's doctor should give her prescription pain medications for her migraines?
4. To what extent do you believe Sarah is accurately describing her level of pain?
5. To what extent do you think that Sarah's family and friends should help support Sarah (such as getting food, cleaning, or accomplishing necessary tasks) when her migraines occur?
6. Sarah's doctor recently read a new study that came out stating that moderate exercise can help relieve migraine symptoms, and in some cases, even completely eliminate migraines all together. To what extent do you think Sarah's doctor should suggest she try exercising to help with her symptoms?
7. Sarah's doctor also read about the benefits of eating more vegetables, whole grains, fruits, lean proteins, and healthy fats and eating less added sugar and saturated fat to lower intensity of migraines. To what extent do you think her doctor should suggest these diet modifications to Sarah?
8. To what extent do you think that Sarah's doctor should question (disbelieve) her stated level of pain?

Exploratory Items for Future Research: Please answer the following open-ended questions so that we may understand more about your thoughts on Sarah and her migraines.

1. Please explain why you would or would not recommend Sarah see a doctor for her symptoms.
2. Do you think Sarah's doctor MIGHT treat her differently than another patient experiencing similar symptoms? Explain your answer.
3. Do you think Sarah's doctor SHOULD treat her differently than another patient experiencing similar symptoms? Explain your answer.
4. Do you think Sarah's doctor would give other patients the same advice concerning exercise for migraine relief as he gives Sarah? Please explain your answer.
5. Do you think Sarah's doctor would give other patients the same advice concerning diet modifications for migraine relief as he gives Sarah? Please explain your answer.

Attribution Questionnaire (adapted from Pearl & Lebowitz, 2014)

Using your own opinions, please rank to what extent you think one's weight is due to the specific cause on a scale of 1-7 (1 - *not at all*, 4 - *somewhat*, 7 - *very much*).

Biological Attributions: 1, 4, 9, 12, 15, 18, 21, and 25
Environmental Attributions: 2, 5, 7, 10, 13, 16, 19, 23, and 26
Personal Attributions: 3, 6, 8, 11, 14, 17, 20, 22, and 24

(*Indicates attributions not included in the original questionnaire by Pearl and Lebowitz)

1. To what extent do you believe one's weight is due to their genetics?
2. To what extent do you believe one's weight is due to their amount of nutritional knowledge/nutritional education?
3. To what extent do you believe one's weight is due to their amount of willpower?
4. To what extent do you believe one's weight is due to their brain chemical levels?
5. To what extent do you believe one's weight is due to their accessibility to healthy food due to location or other geographic factors (the available of healthy food options in rural towns vs. large cities)?
6. To what extent do you believe one's weight is due to their physical brain health (ex: an injury to the brain could change level of control of appetite)?
7. *To what extent do you believe one's weight is due to their belief towards the cost of healthy vs. junk foods?
8. *To what extent do you believe one's weight is due to their amount of sleep?
9. To what extent do you believe one's weight is due to their hormone levels (ex: fat-storage hormones, appetite controlling hormones)?
10. To what extent do you believe one's weight is due to their financial resources?
11. To what extent do you believe one's weight is due to the foods they eat?
12. To what extent do you believe one's weight is due to their metabolism?
13. *To what extent do you believe one's weight is due to their environmental pollution status?
14. To what extent do you believe one's weight is due to their caloric intake/portion sizes?
15. To what extent do you believe one's weight is due to their presence/absence of mood disorders (ex: anxiety, depression)?
16. *To what extent do you believe one's weight is due to their medications/supplements?
17. *To what extent do you believe one's weight is due to their stress levels?

18. *To what extent do you believe one's weight is due to their gut microbiome (the bacteria that live in our intestines and help with digestion of foods)?
19. *To what extent do you believe one's weight is due to the mass marketing of healthy foods vs. unhealthy foods?
20. To what extent do you believe one's weight is due to their eating patterns (ex: skipping breakfast, eating 3 meals a day, meal timing)?
21. *To what extent do you believe one's weight is due to their age, race, gender, ethnicity, or other facet of demographics?
22. To what extent do you believe one's weight is due to their level of physical exercise or activity?
23. To what extent do you believe one's weight is due to their family's and/or social circle's eating habits?
24. To what extent do you believe one's weight is due to their level of self-respect/care about their body?
25. To what extent do you believe one's weight is due to the habits his/her biological mother had while pregnant with him/her (ex: eating and exercise patterns, smoking, drinking)?
26. To what extent do you believe one's weight is due to their favorite public figures' endorsement of certain foods/activities?
27. If there are any other reasons that you believe an individual might be a certain weight (NOT listed above), please list those attributions below. If you have no other beliefs concerning the causes, simply type "N/A".

Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988)

We are now interested in how you felt while watching the video earlier in this session Please answer the following questions regarding your feelings/emotions during the video clips you watched at the beginning of the study (scale: 1 - *clearly describes my feelings*, 2 - *mostly describes my feelings*, 3 - *moderately describes my feelings*, 4 - *slightly describes my feelings*, 5 - *does not describe my feelings*).

1. To what extent did you feel happy while watching the video?
2. To what extent did you feel sad while watching the video?
3. To what extent did you feel enthusiastic while watching the video?
4. To what extent did you feel upset while watching the video?
5. To what extent did you feel cheerful while watching the video?
6. To what extent did you feel sickened while watching the video?
7. To what extent did you feel depressed while watching the video?
8. To what extent did you feel grossed out while watching the video?
9. To what extent did you feel inspired while watching the video?
10. To what extent did you feel angry while watching the video?
11. To what extent did you feel amused while watching the video?
12. To what extent did you feel devastated while watching the video?
13. To what extent did you feel joyful while watching the video?
14. To what extent did you feel anxious while watching the video?

Table 1. *Means and Standard Deviations of self-reported emotion as a function of emotion condition;* SD*s are given in parentheses.*

		Affect Condition		
		Disgust	Sad	Happy
	Happy Composite	4.85 *(.35)*	4.74 *(.45)*	2.18 *(.90)*
Self-Reported Emotion	Sad Composite	4.1 *(.88)*	2.1 *(.93)*	4.92 *(.28)*
	Disgust Composite	1.64 *(.93)*	3.74 *(.91)*	4.96 *(.28)*

Table 2:

Table 2. *Means and standard deviations for Friend Support as a function of Emotion Condition and Target Body Type;* SD*s are given in parentheses.*

	Affect Condition		
	Disgust	Sad	Happy
Obese Target	5.84 *(.66)*	5.62 *(.80)*	6.00 *(.56)*
Thin Target	5.89 *(.60)*	5.89 *(.65)*	5.83 *(.63)*

Table 3. *Means and Standard Deviations of Personal and Biological/Environmental Attributions for Obesity as a function of construal level and target body type*; SD*s are given in parentheses.*

	Construal Level	
	Self "Me"	Collective "We"
Obese Target	1.03 *(.63)*	.87 *(.65)*
Thin Target	.89 *(.69)*	1.02 *(.64)*

Table 4. *Means and Standard Deviations of the Attribution Difference Score (Personal minus Biological/Environmental) as a function of target body type and construal level*; SD*s are given in parentheses.*

	Construal Level	
	Self "Me"	Collective "We"
Obese Target	5.40 *(.76)*	5.41 *(.71)*
Thin Target	4.37 *(.76)*	4.52 *(.69)*

Figure 1. *Friend Support Measure as a function of emotion condition and target body type.*
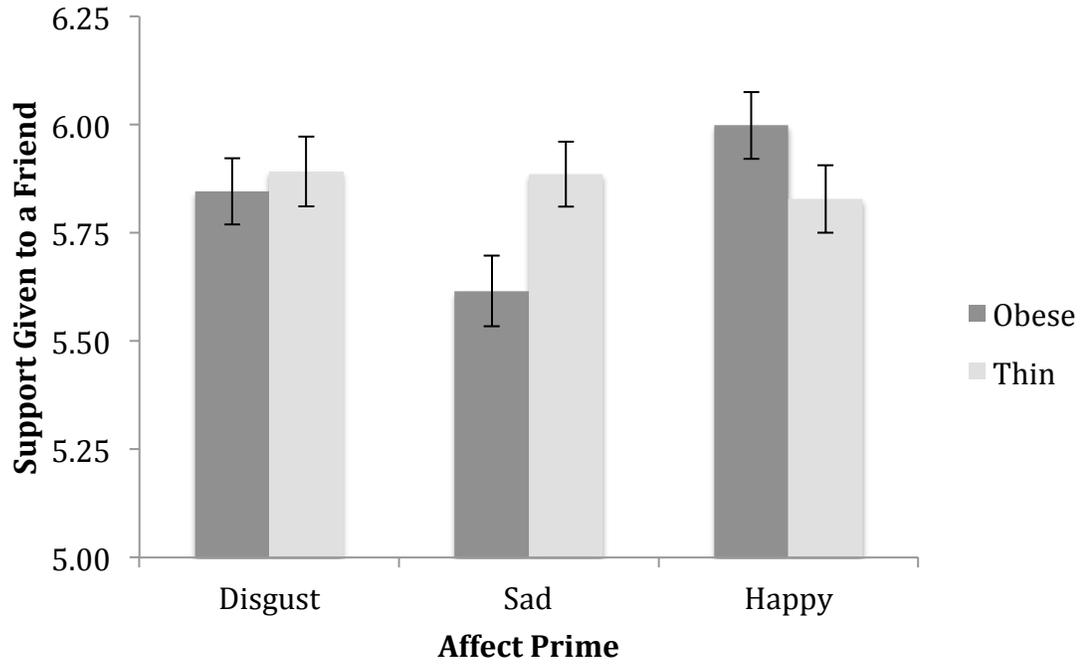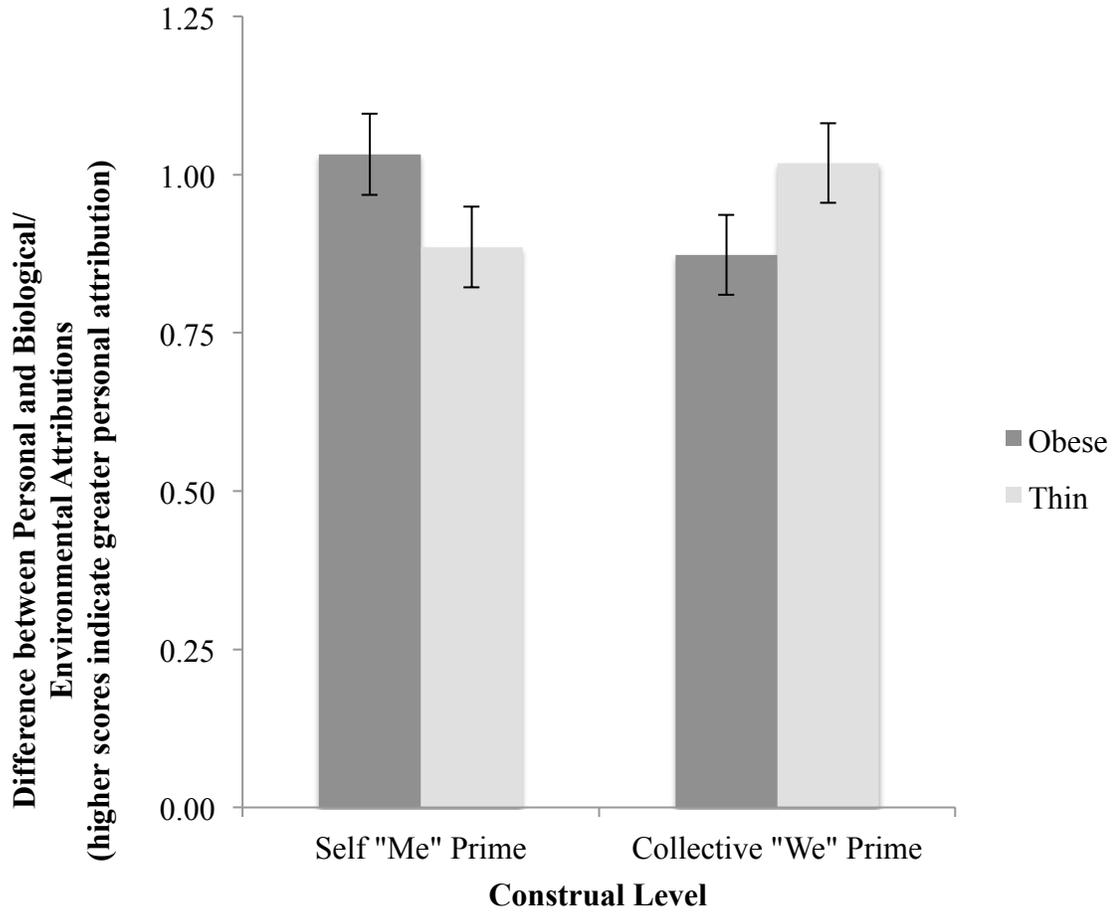
Figure 2. *Difference between Personal and Biological/Environmental Attributions as a function of target body type and construal level.*

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