

Uncovering men's stereotype content (warmth and competence) associated with
a representative range of male body size categories

Amanda Baker and Arnd Florack

University of Vienna

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Box 1866, Mountain View, CA 94042, USA.

Abstract

Research indicates that 40% of men experience weight-related stigmatization. Yet perceptions of body size continue to be understudied in men and the stereotype content of men's weight status remains largely unknown. Grounded in Stereotype Content Model, the research aims to uncover men's stereotype content associated with distinct body sizes. A pilot study tested the methodological design using a representative measure of BMI-specific images among a sample of undergraduate men ($N = 80$). Study 1 included the BMI-specific images to assess stereotype content among a broad online sample ($N = 142$) and explored how participant BMI relates to such perceptions. Study 2 included images of real men to increase the ecological validity of our findings ($N = 152$). We also included empathy and protestant ethics to examine possible interaction effects. Results revealed that normal to overweight men scored highest on warmth and competence, while underweight and obese classes were perceived less favorably and, evidently, stereotype perceptions were increasingly severe with adiposity. Empathy moderated evaluations of warmth toward stigmatized groups, and protestant ethics moderated warmth appraisals for underweight and normal weight targets but did not influence perceptions of competence. Overall, weight stereotype content should be considered when understanding stigma-related experiences in men.

Keywords: weight stereotypes, men's body size, body mass index, Stereotype Content Model

1. Introduction

Individuals are often categorized and stereotyped on visual stigmata like their appearance. Such stereotyping and spontaneous inferencing typically concern a groups' attributes such as their personality traits, preferences, or abilities (Hu, Parde, Hill, Mahmood, & O'Toole, 2018; Kanahara, 2006), and can affect job status and hiring decisions (Agerström & Rooth, 2011; Finkelstein, Demuth, & Sweeney, 2007; Flint et al., 2016), the assessment of suitability for political appointments (Carpinella & Johnson, 2016; Todorov, Mandisodza, Goren, & Hall, 2005), perceived leadership potential (Flint & Snook, 2014), quality of care (Brown, 2006; Phelan et al., 2015), and diagnosis or misdiagnosis (Aaron et al., 2008; Scott, Currie, Albert, Calverley, & Wilding, 2012). Although most research efforts in the area of appearance stereotypes and bias focus on information in facial cues (e.g., Dumas & Testé, 2006; Olivola et al., 2012), a growing number of studies focus on body size stereotypes (e.g., Bryksina, Wang, & Mai-McManus, 2020; Hu et al., 2018; Klaczynski, Daniel, & Keller, 2009; Rodgers, Damiano, Wertheim, & Paxton, 2017).

Body size generally refers to a person's body mass index (BMI) and is a highly salient category used to make judgements of others. Indeed, the stigmatization of individuals based on their body size is not a new phenomenon (e.g., Harris & Smith, 1982). For example, higher weight youth are often considered unhealthy, lazy, and socially inept by their peers, whereas, lean or thin adolescents are characterized as energetic, having many friends, and being happy (Greenleaf, Chambliss, Rhea, Martin, & Morrow, 2006). Evidence also shows that children and adolescents with a BMI above the 95th percentile for age and sex, compared to those with a normal-weight status (categories defined by the Centers for Disease Control, 2018) are more likely to experience social marginalization (Strauss & Pollack, 2003). Higher weight persons also report poorer quality of life (Busutil et al., 2017; Schwimmer, Burwinkle, & Varni, 2003; Taylor, Forhan, Vigod, McIntyre, & Morrison, 2013) and punitive body size-

related stigma which is associated with poor self-esteem, body dissatisfaction, and depressive symptomology (Eisenberg, Neumark-Sztainer, & Story, 2003; Mond, van den Berg, Boutelle, Hannan, & Neumark-Sztainer, 2011). Regrettably, socially prescribed stereotypical body size attitudes are evident at a very early age – some suggest around 4 years of age for both boys and girls (Damiano et al., 2015; Rodgers et al., 2017). Evidently, such stereotypes influence a variety of behavioral intentions and may contribute to discriminatory actions (Cuddy, Fiske, & Glick, 2008).

Given the salience and consequences of body size-related stigma in today's society, it is surprising that body size stereotypes have had very little attention from a Stereotype Content Model (SCM; Fiske, Cuddy, Glick, & Xu, 2002) perspective. The stereotype content associated with different body sizes therefore remains largely unknown. In particular, it is unclear how people stereotype the vast range of body sizes observed in the population (i.e., underweight, normal weight, overweight, and obese classifications). What's more, weight stigma, like eating disorders and body image apprehensions (Grogan, 2016; Murray & Touyz, 2012), tends to be overlooked and understudied in men (Pearl & Wadden, 2018). In fact, research on body size stereotypes primarily focus on children and youth attitudes (e.g., Durante, Fasolo, Mari, & Mazzola, 2014; Musher-Eizenman, Holub, Miller, Goldstein, & Edwards-Leeper, 2004), and is frequently limited to female participants. Yet, research estimates that 40% of men report experiencing weight-based stigmatization (Himmelstein, Puhl, & Quinn, 2018). It is therefore necessary to change the direction of contemporary research and extend the focus to include weight-based stigmatization of men.

1.1. The Stereotype Content Model

The SCM is based on a comprehensive theory of implicit bias to facilitate the classification of people's judgements of others (Fiske et al., 2002). The SCM posits that the most relevant criteria in intergroup relations and stereotype perceptions are the social group member's *warmth*, otherwise known as communion (Abele, & Wojciszke, 2007), morality

(Wojciszke, 1994), other-profitableness (Peeters, 1983), or trustworthiness (Oosterhof, & Todorov, 2008), and *competence*, also known as agency (Abele, & Wojciszke, 2007), self-profitableness (Peeters, 1983), or instrumentality (Parsons, & Bales, 1955). These two dimensions of social cognition have consistently emerged in classic and contemporary studies of perception and social judgement (Cuddy, Fiske, & Glick, 2008; Rosenberg, Nelson, & Vivekananthan, 1968; Wojciszke, Bazinska, & Jaworski, 1998) and are identified as universal dimensions of interpersonal and intergroup social cognition (e.g., across cultures and regions; Cuddy et al., 2009; Fiske, Cuddy, & Glick, 2007).

The theory proposes that judgements of warmth and competence are not necessarily related, but that the combination of the two help forecast people's cognitive, emotional, and behavioral tendencies in a given context. For example, Fiske et al. (2002) found that rich and poor people are categorized as relatively low on warmth, but the rich are judged high on competence whereas the poor are judged low. A more recent example revealed that gay men portrayed on television are often depicted as effeminate and judged by viewers as warmer and less competent compared to male characters portrayed as masculine (Sink, Mastro, & Dragojevic, 2018). Moreover, higher weight persons are consistently perceived as less competent compared to lean persons (Bryksina et al., 2020; Davison & Birch, 2004; Tiggemann & Anesbury, 2000; Vartanian & Silverstein, 2013). Meanwhile, research also shows that heavy targets are perceived as warmer and friendlier compared to thin targets (Bryksina et al., 2020; Tiggemann & Rothblum, 1988), as less warm and friendly compared to thin targets (Tiggemann & Anesbury, 2000), or as having no significant difference across the two groups (Vartanian & Silverstein, 2013). Albeit, the discrepant results are based on studies solely investigating two body size groups.

In general, the SCM postulates that only reference groups and societal prototype groups, such as the middle-class, are perceived as both warm and competent. However, many groups receive ambivalent stereotypes involving a positive evaluation on one dimension and

a negative evaluation on the other. For instance, elderly persons are often perceived as warm but not competent (Cuddy & Fiske, 2002; Fiske et al., 2002). Positive stereotypes on one dimension do not automatically reduce discrimination or bias. Rather, the negative stereotype tends to be reinforced and in turn justifies unfair treatment (Cuddy et al., 2008). According to the SCM, ambivalent stereotypes predict specific emotions that often provoke certain behavior. Perceived competence and coldness, for example, elicit envy which is ambivalent in itself, involving both resentment and respect but might also denote injustice or inferiority. Perceived warmth and incompetence on the other hand, elicit pity which comprises of compassion and sadness concurrently, and might stem from a sense of superiority (Cuddy et al., 2008). Identifying the stereotype content associated with salient groups, and whether the stereotype content is ambivalent, provides the groundwork for understanding perceptions and misperceptions. Hence, we investigate the stereotype content associated with men's body size to shed light on stereotype perceptions related to weight status and adiposity.

Furthermore, the SCM posits that individual differences moderate how much people endorse the model (Fiske, 2015). For example, slight ingroup favoritism tends to emerge when students are asked to evaluate other students, across nations, showing preference for their own country (Cuddy et al., 2008). People also favor themselves and people like themselves on their stronger dimension. For instance, higher status groups show increased partiality on competence while lower-status groups reveal more warmth (Oldmeadow & Fiske, 2010). For this reason, our study of interpersonal perceptions also considers individual characteristics that might moderate men's body size perceptions and clarify for whom the stereotypes may be more or less tolerant.

In line with previous research (e.g., Schmalz, 2010; Schwartz, Vartanian, Nosek, & Brownell, 2006), we take BMI class of the perceiver into account to investigate whether weight stereotypes are widely shared social representations or whether they differ between people based on how similar they are to perceived others. Although some research suggests

that higher weight persons hold anti-fat attitudes to the same extent as normal weight persons (Wang, Brownell, & Wadden, 2004), other evidence shows that the magnitude of anti-fat biases is significantly weaker among people with high BMIs compared to those with low BMIs (Schwartz et al., 2006). It is important to note however, that Schwartz et al. (2006) also emphasized the lack of evidence of a pro-fat bias among persons classified as obese. Even the heaviest of these weight groups tend to show an implicit preference for thin people relative to higher weight people. Thus, we examine the moderating role of participant BMI on perceptions of warmth and competence to further understand its influence.

In order to further elucidate the individual differences that might influence body size perceptions, the literature also alludes to the role of empathy. Empathy, in its two basic forms, cognitive and emotional empathy, has long been studied as a variable that improves intergroup perceptions (e.g., Stephan & Finlay, 1999). Cognitive empathy refers to taking the perspective of another person and is useful in acquiring and considering knowledge about an outgroup including coming to understand the worldviews of members from another group and learning about their cultural practices, norms, values, beliefs, standards and rules, as well as learning about how the outgroup may view the ingroup. Emotional empathy refers to having concern for another person or group and sharing the same or similar feelings of the other. Indeed, previous research shows that both forms of empathy reduce dissimilarity perceptions, promotes intergroup attitudes, and lessens antagonistic perceptions (e.g., Gloor & Puhl, 2016; Stephan & Finlay, 1999; Vescio, Sechrist, & Paolucci, 2003). Hence, we expect that empathy may reduce harsh body size stereotypes.

In addition, research on protestant ethics, as a core belief that hard work, discipline, and impulse control promote success and proficiency, explains individual differences that predict responses toward stigmatized groups (Kay & Jost, 2003). For instance, studies demonstrate that people who score high on protestant ethic beliefs are more likely than people who score low on protestant ethics to depreciate members of disadvantaged groups

such as African Americans (Biernat, Vescio, & Theno, 1996) and higher weight persons (De Vries, 2007; Quinn & Crocker, 1999). Quinn and Crocker (1999) demonstrated that women who endorse the protestant ethic and who are extremely high weight actually evaluated their own wellbeing and self-control more severely compared to medium and slightly low weight women. In general, the protestant ethic belief that hard work leads to successful outcomes and lack of success is caused by failings of self-indulgence and lack of self-discipline can evidently, impact perceptions associated with body size and weightism.

1.2. The Present Studies

The aim of the research was to examine the stereotype content associated with a representative range of BMI-specific categories using the SCM framework. In line with Hansson, Naslund, and Rasmussen (2010) and Himmelstein and colleague's (2018) work that shows men classified as obese experience the greatest stigma, we predicted that perceptions of competence would be lower for overweight and obese BMI classes compared to underweight and normal weight targets (Hypothesis I). In accordance with SCM, stereotype content is often ambivalent with the exception of reference groups. Thus, we also predicted that perceptions of warmth would, in general, be higher for men classified as overweight and obese compared to targets classified as underweight and normal weight (Hypothesis II).

We also included participant BMI, level of empathy and protestant ethic beliefs as moderators to determine how these characteristics might influence perceptions of body size. We expected that participant's own BMI would influence their judgements of others. The more closely aligned or similar a participant's BMI is to the pictorial or target displayed, the more positive the stereotype content might be (Hypothesis III). We also predicted that empathy would reduce perceived differences such that men with high levels of empathy and concern for others might demonstrate enhanced perceptions of warmth and competence, particularly for stigmatized groups, compared to those with low levels of empathy. In other words, we hypothesized that empathy would decrease the strength of the relationship between

portrayed BMI targets and perceptions of warmth (Hypothesis IVa) and competence (Hypothesis IVb).

Lastly, we hypothesized that increased protestant ethic beliefs would increase the strength of the relationship between portrayed BMI targets and perceptions of competence thereby amplifying levels of competence for underweight to normal weight targets and amplifying levels of incompetence for overweight and obese targets (Hypothesis V). However, we did not assume that such beliefs would lead to pronounced perceptions of warmth. In contrast, we presumed that protestant ethic beliefs might decrease the strength of the relationship between targets and perceptions of warmth. According to Crandall (1994), a variety of conservative social attitudes are associated with anti-fat attitudes including protestant ethics which forecasts increased dislike and overall negative attitudes toward those who are perceived as lacking discipline and non-contributing. We therefore predicted that those with strong protestant ethics would evaluate overweight and obese men the lowest on the dimension of warmth compared to underweight and normal weight men, and compared to those with low levels of protestant ethics (Hypothesis VI).

2. Pilot Study

A pilot study was conducted to ensure that the pictorials reliably captured and tested the stereotype content of BMI-specific body size categories (Hypothesis I and II). We also examined the relationship between participant BMI and stereotype content (Hypothesis III).

2.1. Method

2.1.1. Participants

Participants were recruited through the Laboratory Administration for Behavioral Science subject pool at the University of Vienna ($N = 80$). Participants' age ranged between 18 and 33 years ($M = 21.98$, $SD = 2.83$). Self-reported weight and height were used to calculate their BMI. Participants' BMI ($M = 22.49 \text{ kg/m}^2$, $SD = 2.19$) averaged around

normal weight according to the World Health Organization (WHO) classification system (2003).

2.1.2. Stimuli and Procedure

The pictorials used in the study were originally developed and validated by Harris, Bradlyn, Coffman, Gunel, and Cottrell (2008). The pictorials were created from images of adults with known BMI values which were subsequently photoshopped to systematically construct a realistic and reliable BMI-specific Body Size Guide (BSG) for men and women ranging from underweight ($\text{BMI} < 18.5$) to class III obesity ($\text{BMI} \geq 40$). Importantly, the face across each pictorial is that of the same person and the muscularity volume is quite minimal across each body size. The bodies therefore change only in adiposity around the waist and abdomen, legs, arms, and face shape (see Harris et al., 2008 for a depiction). The instrument comprises of 10 images of men and 10 images of women that are approximately 3-points apart on the BMI scale. According to prior testing, adults are able to discriminate between body sizes with this degree of difference, thereby illustrating clear distinctions between each weight category (Harris et al., 2008).

Participants first completed general questions about their demographics and were then asked to evaluate all pictorials (BMI categories) presented to them. In order to mitigate social desirability effects, we employed the indirect questioning approach (Fisher, 1993) because this is a standard method in stereotype research (e.g., Fiske et al., 2002). Research has shown that subjects project their own true beliefs and evaluations in the indirect response situation (i.e., when answering with the perspective of another person or group in mind; Fisher, 1993). We therefore asked participants to consider and respond based on how persons from the general public would respond rather than through direct introspection. Participants' received partial course credit in exchange for their participation.

2.1.3. Measures

2.1.3.1. Body size. The independent variable was measured using the BMI-specific male pictorials described (Harris et al., 2008). The images range from size 1 to 10, where 1 = underweight (BMI < 18.5); 2 and 3 = normal weight (BMI 18.5 – 24.9); 4 = overweight (BMI 25.0 – 29.9); 5 and 6 = obese class I (BMI 30.0 – 34.9); 7 and 8 = obese class II (BMI 35.0 – 39.9); 9 and 10 = obese class III (BMI $\geq$ 40). The 10 images were manipulated using GIMP 2.10 to alter the color of the clothing thus creating additional sets of images to improve reliability. Participants saw a total of 40 images and the four shirt colors (red, blue, green, yellow) were averaged to compute a final score for each body size.

2.1.3.2. Warmth and competence. The two stereotype dimensions (Fisk et al., 2002) were measured using slider scales. In order to reduce common method variance concerns (CMV; systematic variance resulting from the use of the same method thereby artificially inflating observed relationships between variables; Spector & Brannick, 2010) associated with 'common scale format' for multiple items, we employed separate scales to measure each construct (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The warmth construct was described as being good-natured, warm-hearted and having good intentions toward others. Participants were asked to rate each figure using the vertical slider scale ranging from -50 (*least warm*) to +50 (*most warm*) and the midpoint was neutral. Competence was described as being intelligent, capable and having the ability to succeed in reaching one's goals. Competence was measured on a horizontal slider scale ranging from 0 (*not at all competent*) to 100 (*exceedingly competent*). The order of questions and images were randomized to control for order effects.

2.1.3.3. Average and ideal weight perceptions. Participants were asked to rate how close or far each of the 10 original pictorial images were from the average body size using a scale ranging from 1 (*furthest*) to 10 (*closest*). The survey did not provide any information about the nation's factual average body size since the goal was to capture participant perceptions. Similarly, participants were asked to rate how close or far each pictorial image

was from the ideal body size (the body size men strive for) ranging from 1 (*furthest*) to 10 (*closest*). Given that the question was not a ranking type, participants could choose more than one body size as closest, or furthest, to the average/ideal body size.

Demographic information was recorded including age, weight and height. BMI was calculated using self-reported weight and height.

2.2. Results

2.2.1. Manipulation check

To explore the assumption that the color of pictorial clothes had no association with participants' warmth and competence scores, we examined the consistency between the 4 items measuring the same body size as well as checked the average scores across colors for each item. We found that the evaluations per body size category had acceptable reliabilities on the dimension of warmth (ranging from $\alpha = .81$ to $.91$), and mostly tolerable reliabilities on competence (ranging from $\alpha = .60$ to $.75$). Although we found lower than desirable reliabilities in some cases, the average scores and standard deviations on BMI-specific stereotype content for each target's color shirt were relatively comparable and thus, increased our confidence in the items. Our main analyses therefore employed the average scores across colors on each body size to explore the effects of body size on men's stereotype perceptions.

Next, we explored the notion that body size relates to men's perceptual content by conducting repeated-measures correlations between the respective variables using the *rmcorr* R package (Bakdash & Marusich, 2017). Repeated-measures correlations estimate the correlation coefficient between two measures assessed multiple times, while taking dependence of observations into account. The results revealed a significant negative correlation between pictorial body size and warmth, $r(3119) = -.33, p < .001$, 95% *CI*s $[-.301, -.245]$, and body size and competence, $r(3119) = -.14, p < .001$, 95% *CI*s $[-.150, -.084]$.

2.2.2. Main analyses

2.2.2.1. Effect of pictorial body size and participant BMI on men's stereotype content

To test the relationship between body size and stereotype content, we applied a mixed-effects model analysis using SPSS (2005; Shek & Ma, 2011). The main advantage of mixed models is their flexibility and ability to handle clustered individuals and repeated measures. The model involved participant BMI, pictorial body size and their interaction as the independent variables, while warmth and competence scores were the dependent variables. Given our within-subjects design, the model included a random intercept and pictorial body size was treated as the fixed factor.

The results revealed that perceived warmth significantly differed per body size, $F(9, 3093) = 17.99, p < .001$ (see Table 1). The overweight male (pictorial size 4) scored the highest on perceived warmth ($M = 12.50, SD = 13.28$). Following a more thorough pairwise comparison through the compare main effects command (adjusting for multiple comparisons) in the mixed model function, we found four 'clusters' of warmth stereotypes. The normal BMI figures (size 2 and 3) and mildly overweight pictorial (size 4) formed the warmest or most friendly and well-intentioned group compared to the moderately warm group comprised of the underweight (size 1) and overweight (size 5) pictorials, μ difference = -6.91, $p < .001$, 95% *CI*s [-8.76, -5.06], the obese class I to obese class III pictorials (size 6 to size 9), μ difference = 5.63, $p < .001$, 95% *CI*s [3.87, 7.38], and the obese class III pictorial (size 10), which was perceived as especially cold in comparison, μ difference = 9.09, $p < .001$, 95% *CI*s [6.60, 11.57].

We also found that perceived competence significantly differed per body size, $F(9, 3093) = 5.33, p < .001$ (see Table 1). A clear linear relationship emerged. Underweight (size 1) and normal weight male pictorials (size 2 and 3) were perceived as the most competent compared to the overweight and obese class I (size 4 to 6), μ difference = 3.16, $p = .001$, 95% *CI*s [.924, 5.39], obese class II (size 7 and 8), μ difference = 4.44, $p = .008$, 95% *CI*s [1.94, 6.94], and obese class III pictorials (size 9 and 10), μ difference = 7.01, $p < .001$, 95% *CI*s [4.51, 9.51].

Important to this line of work, we did not find a significant effect of participant BMI category on evaluations of warmth, $F(2, 77) = 0.026$, $p = .975$, or competence, $F(2, 77) = 0.022$, $p = .978$. However, the interaction between pictorial body size and participant BMI was significant on warmth, $F(18, 3093) = 2.90$, $p < .001$, and competence, $F(18, 3093) = 1.79$, $p = .021$ (see Supplemental Material for visual representations).

2.2.2.2. Perceptions of pictorial body size as average or ideal weight

We also examined how close or far each pictorial was rated from the perceived average and ideal weight in society and how the perceived closeness to the average or ideal is related to measures of warmth and competence. We found that the higher the perceived closeness to the *average* weight, the higher the perceived warmth, $r(3119) = .23$, $p < .001$, 95% CIs [.206, .274], and competence, $r(3119) = .05$, $p = .011$, 95% CIs [.049, .113], although very weakly correlated with competence. Moreover, the higher the perceived closeness to the *ideal* weight, the higher the perceived competence, $r(3119) = .13$, $p < .001$, 95% CIs [.115, .170], although again a relatively weak relation. Perceived closeness to the *ideal* weight was also significantly correlated with perceived warmth, $r(3119) = .38$, $p < .001$, 95% CIs [.321, .377]. Participants' BMI did not have a significant effect on the relative perception of closeness to average, $F(2, 77) = 0.01$, $p = .987$, or ideal body size, $F(2, 77) = 0.23$, $p = .793$.

2.3. Discussion

The pilot study revealed first indications that men's stereotype content is distinct across BMI categories. The findings indicate that weight status is an important characteristic that men use to shape stereotype perceptions about other men. Based on the results, normal and overweight BMI sizes are perceived as the warmest, while normal weight sizes are perceived as the most competent, compared to all other BMI categories.

Contrary to our hypotheses, the correlations for warmth across the various body sizes demonstrate that as BMI surpasses overweight status, perceptions of warmth decrease. This

might be, in part, explained by the premise that those who are perceived as more similar to the self are evaluated more positively, whereas, those who are perceived as increasingly dissimilar are evaluated more negatively. In this case, the student sample averaged around normal healthy weight status which might explain the preference for normal weight pictorials above all else, and the increasingly harsh evaluations toward obese targets. Albeit, the results must be interpreted with caution as the student sample did not have an equal distribution of BMI classes.

Moreover, consistent with our hypotheses, underweight and normal weight men were perceived as more competent compared to other BMI categories suggesting that as obesity levels grow, perceptions of competence decrease. Beyond our expectations however, perceived warmth tends to reveal a moderately positive correlation with perceived closeness to average and ideal body size compared to perceptions of competence.

3. Study 1

Study 1 builds on the pilot study by investigating the stereotype content of BMI-specific categories using the same approach in a broad online sample (Hypothesis I and II). We also examine the moderating role of participant BMI on stereotype content (Hypothesis III).

3.1. Method

3.1.1. *Participants*

The sample was comprised of 142 men. Participants' age ranged between 19 and 70 years ($M = 35.04$, $SD = 9.76$). The majority were American (71.8%), followed by Indian (21.9%), German (1.4%), Italian (1.4%), Brazilian (.7%), Canadian (.7%), Irish (.7%), Portuguese (.7%), and Venezuelan (.7%). Participant's identified as heterosexual (84.5%), bisexual (12.0%) or homosexual (2.8%), and one participant chose not to disclose this information. Participant's reported being single (46.5%), married (41.5%), dating (9.2%), or divorced (2.8%). Self-reported weight and height were used to calculate BMI. Participants'

BMI ($M = 25.97 \text{ kg/m}^2$, $SD = 4.32$) averaged around overweight status according to the World Health Organization classification system (2003). In fact, 44.4% of participant's were of normal weight status, 40.8% were overweight, 9.9% were considered obese class I, and 4.9% were obese class II.

3.1.2. Stimuli and Procedure

The study design was similar to the pilot study but this time we asked participants to evaluate a total of 20 images (two color sets of the pictorial images ranging from size 1 to 10) to measure men's stereotype content. Participants were recruited through the Mechanical Turk (MTurk) web-based platform. Previous research suggests that MTurk is adequate for studies measuring attitudes related to body weight (Buhrmester, Kwang, & Gosling, 2011; Paolacci & Chandler, 2014). Participants were compensated \$2.00 USD for 15 minutes of their time.

3.1.3. Measures

The same measures were used as the pilot study. In addition, we included a demographic question to capture marital status and an attention check was used to identify participants who failed to devote attention to the task at hand. We asked participants to indicate their level of agreement to the statement "At some point in my life, I have had to consume water in some form" (Abbey & Meloy, 2017), using a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A response of 4 or 5 was considered appropriate.

3.2. Results

3.2.1. Preliminary analyses

Data screening and testing assumptions were performed using SPSS (Tabachnick & Fidell, 2007). A missing values analysis (MVA) revealed that no data was missing. Of 150 respondents, 6 identified as being female, 1 used the midpoint on each scale repeatedly, and 1 answered the attention check incorrectly, and were therefore omitted from further analysis. Inspection of the means and standard deviations of each variable included in the main

analyses indicated that all values were within theoretical range (see Table 2). We coded participant BMI into weight classes (and merged obese classes) which reduced issues with skewness and used this variable in subsequent analyses. Values of kurtosis and skewness were within acceptable range for all other variables of interest. Bivariate scatterplots and the distribution of standardized residuals appeared relatively normal confirming linearity and homogeneity of variance. Furthermore, to test the basic assumption that the color of pictorial clothes had no association with participant warmth and competence scores, we examined the reliabilities. The scores per pictorial color and body size had acceptable reliabilities on the dimensions of warmth and competence ranging from $\alpha = .72$ to $.88$ and $\alpha = .81$ to $.95$, respectively. We therefore relied on the amalgamated averages across colors, per body size, to further test perceptions of warmth and competence in our main analyses.

To examine the relationship between target body size and men's perceptual content, we conducted repeated-measures correlations between the respective variables using the *rmcorr* R package (Bakdash & Marusich, 2017). Not surprisingly, the results revealed a significant negative correlation between body size and warmth, $r(2697) = -.25, p < .001$, 95% *CI*s $[-.285, -.219]$, and a strong negative correlation between body size and competence, $r(2697) = -.67, p < .001$, 95% *CI*s $[-.685, -.650]$, indicating that pictorial body size relates to men's underlying stereotype perceptions.

3.2.2. Main analyses

3.2.2.1. Effect of pictorial body size and participant BMI on men's stereotype content

To test the relationship between body size and stereotype content, we similarly applied mixed-effects model analyses using SPSS (2005; Shek & Ma, 2011). The results revealed a significant association between body size and perceptions of warmth $F(9, 2671) = 22.08, p < .001$ (see Figure 1). The results across the 10 body size assessments and contrast tests are displayed in Table 2. Similar to the pilot study, the more obesity level grew, the more perceived warmth decreased. There was no main effect of participant BMI class on

warmth scores, $F(2, 139) = 0.22, p = .801$, and no significant interaction effect between pictorial body size and participant BMI class, $F(18, 2671) = 1.25, p = .212$. Hence, obese participants were not necessarily more tolerant compared to other BMI classes in their evaluations of warmth toward other obese men. This lack of interaction contradicts the similarity hypothesis that those who are in similar weight categories may be evaluated less harsh. It is important to note that there are too few participants categorized as obese to confidently analyze trends in stereotype content associated with participant BMI.

The results also showed that perceived competence significantly differed per body size, $F(9, 2671) = 278.99, p < .001$ (see Table 2 and Figure 2). Normal weight (size 2 and 3) to overweight pictorials (size 4) were perceived as the most competent compared to underweight and obese class pictorials. In line with previous research and similar to the pilot study, the more obesity surpassed overweight status, the more perceived competence or ability to attain goals decreased. Hence, obese class III men were rated as having the lowest degree of competence. There was no main effect of participant BMI class on competence scores, $F(2, 139) = 0.26, p = .769$; however, a marginally significant interaction effect emerged, $F(18, 2671) = 1.52, p = .073$.

Given that the results showed slight curvature between target body size 1 and 4, in the next step we added the quadratic term to compare the linear effect with a quadratic effect on both warmth and competence. The dominant linear effect confirmed that perceived warmth generally decreased with body size ($\beta = -1.52, SE = .33, p < 0.001$). In line with the contrast tests (Table 2), the quadratic term revealed a significant curvilinear component ($\beta = -.31, SE = .03, p < .001$). The deceleration in warmth scores was found after body size 3. Comparing the linear trajectory and quadratic term, there was a decline in the residual variance of 5.42 (167.16 to 161.74). This suggested that about 5% of the variation in perceptions of warmth was associated with a quadratic component. Similarly, the linear term revealed that perceived competence also significantly decreased with body size, as aforementioned ($\beta = -4.55, SE =$

0.26, $p < .001$). The quadratic term revealed a significant curvilinear component ($\beta = -.42$, $SE = .03$, $p < .001$). Comparing the linear trajectory and quadratic term, there was a decline in the residual variance of 10.53 (148.79 to 138.26). This suggested that about 10% of the variation in competence was associated with curvature. Overall, the results explicate that normal and slightly overweight body sizes are stereotyped more positively.

3.2.2.2. *Perceptions of pictorial body size as average or ideal weight*

We also examined how close or far each pictorial is perceived from the average and ideal weight as well as how the perceived closeness to the average or ideal is related to measures of warmth and competence (see Supplemental Material). Similar to the pilot study, we found that the higher the perceived closeness to the *average* weight, the higher the perceived warmth, $r(2697) = .24$, $p < .001$, 95% *CI*s [.208, .275], and competence, $r(2697) = .52$, $p < .001$, 95% *CI*s [.496, .548]. Moreover, the higher the perceived closeness to the *ideal* weight, the higher the perceived warmth, $r(2697) = .28$, $p < .001$, 95% *CI*s [.246, .305], and competence, $r(2697) = .71$, $p < .001$, 95% *CI*s [.693, .722]. The results show that competence is particularly strongly associated with perceptions of average and ideal body weights suggesting that adult men tend to perceive normal weight and mildly overweight men to have the highest ability to succeed in reaching their goals compared to underweight and obese status men. Participants' BMI did not have a significant effect on the relative perception of closeness to average, $F(2, 139) = 0.28$, $p = .759$, or ideal body size, $F(2, 139) = 0.14$, $p = .874$.

3.3. Discussion

In line with the pilot study, body size is an important aspect of stereotype perceptions in men. The findings reveal that across a general sample of adult men, normal weight and overweight BMI categories are perceived as more competent and warmer, while underweight men and obese class I men are perceived as moderately warm and competent, and obese class II and III men are rated the least warm and least competent. This contradicts the literature

which suggests that overweight and obese persons are typically seen as warmer compared to their lower BMI counterparts (e.g., Durante et al., 2014). One explanation could be that those who are more similar to ourselves in terms of body size, are perceived as warmer and competent, and these days, normal to overweight BMI statuses are the status quo. Given that the sample averaged around overweight status, the preference for those who resemble such BMI statue might be evaluated more favorably. When we explored the role of participant BMI as a potential buffer on men's stereotype content, the results revealed a trend for this preference on competence. Obese participants might be less harsh in their stereotype evaluations of other obese men compared to normal weight participants. Of course, it is important to take into account that our sample did not represent each BMI group equally and thus, the findings are not conclusive on the role of BMI.

4. Study 2

Study 2 builds on the first two studies by investigating real images of men to increase the study's ecological validity and generalizability, as well as includes additional moderating variables to explore the role of empathy and protestant ethic beliefs.

4.1. Method

4.1.1. Participants

The sample was comprised of 152 men. Participants' age ranged between 21 and 66 years ($M = 36.28$, $SD = 10.02$). The majority were American (75.7%), followed by Indian (21.1%), Italian (1.3%), German (.7%), Brazilian (.7%), and Portuguese (.7%). Participant's identified as heterosexual (85.5%), bisexual (8.6%), or homosexual (5.9%). Participant's reported being married (55.3%), single (30.9%), dating (11.8%), divorced (1.3%), or widowed (.7%). Participants' were generally well educated. The majority had obtained a university or college degree (44.7%), a secondary school diploma (21.1%), a Master's degree (10.6%), some higher education training (6.3%), a doctorate degree (2.1%), or didn't complete secondary school (2.1%). Self-reported weight and height were used to calculate

their BMI. Participants' BMI ($M = 25.53$, $SD = 4.57$) averaged around overweight status according to the World Health Organization classification system (2003). In fact, 42.8% of participant's were of normal weight status, 37.5% were overweight, 13.2% were considered obese class I, 2.6% were obese class II, and 3.9% were underweight.

4.1.2. Stimuli and Procedure

The stimuli used in the study included 48 pictures of men varying in body size from Pinterest. Given that previous research indicates that adults are able to discriminate between body sizes with relative ease (Harris et al., 2008), we used 4 distinct weight categories (i.e., underweight, normal weight, overweight and obese) based on the BMI-specific Body Size Guide from the pilot study and Study 1 to help guide the selection of images. Each distinct body size category had 12 images. Images were included if they met several criteria including: the man had to be alone in the photo (no other humans, animals, or miscellaneous content), the man had to be fully dressed to reduce the focus on perceptions associated with muscularity, he could not be in formal wear such as a business suit (to prevent perceptions of competence based on attire), he had to be a young adult (no children or older adults were observed), he had to be Caucasian to prevent perceptions of ethnicity to interfere with judgements, and he had to appear in the photo with a neutral background (e.g., plain wall indoors, concrete wall outdoors). We covered men's faces using GIMP 2.10 to avoid stereotype perceptions associated with facial cues.

Participants were recruited through MTurk and were compensated \$2.50 USD. Participants first completed general questions about their demographics. Afterward, they evaluated targets and responded to questions pertaining to empathy and protestant ethics.

4.1.3. Measures

4.1.3.1. Warmth and competence. Participants randomly viewed 6 images from each body size category for a total of 24 images from the pool of 48 male images. They viewed

and immediately rated each target on warmth and competence before moving to the next image. The scale was identical to that in the pilot study and Study 1.

4.1.3.2. *Perceived body size.* Participants were asked to identify, using the pictorial scale provided (Harris et al., 2008), which body size best represents the body size of the target in each photo. This manipulation check would ensure that the stimuli were consistently perceived as portraying a single body size category. Similar to the pilot study and Study 1, the scale ranged from 1 (underweight) to 10 (class III obesity). Following the manipulation check, the scores for each image would be averaged to form a single scale score per body size category and included in the main analyses.

4.1.3.3. *Multidimensional Empathy Scale.* The Multidimensional Empathy Scale comprises of four 7-item subscales (Davis, 1980), each of which taps into a separate aspect of the global concept of empathy. We included the perspective-taking subscale which contains items that assess attempts to adopt the perspectives of other people and see things from their point of view, and the empathic concern subscale which examines participants' feelings of warmth, compassion, and concern for others. Items asked participants "to what extent does each statement describe you". Sample items include "Before criticizing somebody, I try to imagine how I would feel if I were in their place" (perspective-taking) and "When I see someone being treated unfairly, I sometimes don't feel very much pity for them" (reversed score item; empathic concern). Responses ranged from 1 (*does not describe me at all*) to 5 (*describes me very well*). The study revealed acceptable reliabilities of .78 and .77 on perspective-taking and empathic concern, respectively.

4.1.3.4. *Protestant Ethic Scale.* The Protestant Ethic Scale was developed to measure the value attached to hard work, discipline and efficiency (Mirels & Garrett, 1971). The scale comprises of 19 items including; "Any man who is able and willing to work hard has a good chance of succeeding" and "A distaste for hard work usually reflects a weakness of character". Participants were asked to rate how much they agree or disagree with each

statement on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The study revealed an acceptable reliability of .89.

4.1.3.5. Demographics. Demographic information was recorded including age, nationality, sexual orientation, marital status, education level, weight and height. BMI was calculated using self-reported weight and height.

4.2. Results

4.2.1. Manipulation check

A manipulation check was performed to determine if each target suitably represented a single body size category. The mean and median were used to evaluate the level of agreement between participants. Targets were evaluated as underweight (scores ≤ 2.0), normal weight (scores between 2.01 – 4.0), overweight (scores between 4.01 – 7.0), or obese (scores between 7.01 – 10.0) using the BMI scale (Harris et al., 2008). Only 1 target was identified as being of normal weight status (*Mean* = 2.64, *Median* = 2.0) when in fact, the authors believed his weight to represent the underweight category (BMI <18.5). Since participants did not demonstrate consistency in their reporting and the mean and median tend to be closer to a normal weight range, the image was omitted from the underweight category and ultimately, removed from further analyses.

4.2.2. Preliminary analyses

Data screening and testing assumptions were performed using SPSS (Tabachnick & Fidell, 2007). The MVA revealed no missing data. Inspection of the means and standard deviations of each variable indicated that values were within theoretical range (see Table 3). We coded participant BMI in classes (and grouped the obese classes), which ultimately reduced the variables' skewness and used this in subsequent analyses. Values of skewness and kurtosis were within acceptable range, using the conventional alpha level ($\alpha = .001$), for all other variables of interest. To reduce the effect of possible spurious outliers, we relied on z-scores and applied winsorizing to transform and retain extreme values. Furthermore, the

distribution of standardized residuals appeared normally and near normally distributed.

Bivariate scatterplots confirmed that the dominant trend meets the assumption of linearity, so we applied mixed-effect models to assess the relationship between body size and stereotype content. For interaction effects, continuous variables were mean centered.

We conducted repeated-measures correlations using the *rmcorr* R package (Bakdash & Marusich, 2017) to examine the correlations between target body sizes and perceptions of warmth and competence. As expected, the results revealed a significant correlation between body size and warmth, $r(455) = .10, p = .031, 95\% CIs [.025, .179]$, confirming that warmth perceptions increase for normal and overweight status men. In addition, a significant negative correlation emerged between body size and competence, $r(455) = -.42, p < .001, 95\% CIs [-.478, -.352]$, demonstrating that perceived competence decreases with BMI status.

4.2.3. Main analyses

4.2.3.1. Effect of target body size and participant BMI on men's stereotype content

To test the relationship between target body size and stereotype content, we applied mixed-effects model analyses using R which computes effect sizes (*nlme* package; Pinheiro, Bates, DebRoy, & Sarkar, 2020). The model included target body size, the moderating variable, and their interaction as the independent variables, while warmth and competence scores were the dependent variables. The model included a random intercept, and body size was treated as a fixed factor.

The results revealed a significant association between body size and perceptions of warmth, $b = 1.04 (SE = 0.48), t(454) = 2.16, p = .031$. Similar to the pilot study and Study 1, normal weight and overweight men are perceived highest on warmth (see Figure 3) compared to underweight and obese men (see Table 3 for contrasts tests). There was no main effect of participant BMI on warmth scores, $b = -0.20 (SE = 0.33), t(150) = -0.61, p = .544$, and no interaction effect, $b = -0.003 (SE = 0.11), t(454) = -0.03, p = .972$. We also found that perceived competence significantly differed per body size, $b = -4.77 (SE = 0.48), t(454) = -$

9.91, $p < .001$. Normal weight men were, again, perceived as the most competent compared to underweight, overweight, and obese men (see Table 3 and Figure 4). There was no main effect of participant BMI on competence scores, $b = .13$ ($SE = 0.35$), $t(150) = 0.36$, $p = .721$, though a marginally significant interaction effect emerged between target body size and participant BMI on competence, $b = -0.21$ ($SE = 0.11$), $t(454) = -1.96$, $p = .050$. The reported mixed-effect model accounted for 46% of the variance in our data (conditional $R^2 = .46$). Underweight men rated overweight and obese men with more leniency compared to overweight and obese men, indicating that weight status of the perceiver may influence stereotype content, but not necessarily as a result of similarity.

Next, we compared the quadratic term with the linear term on both warmth and competence to further elucidate the contrasts tests. The linear effect confirmed that perceived warmth increased for normal to overweight body sizes ($\beta = 19.28$, $SE = 1.76$, $p < .001$), and the quadratic term revealed a significant curvilinear component ($\beta = -3.65$, $SE = .32$, $p < .001$). The deceleration in warmth scores was found amongst the heaviest body sizes. Likewise, the linear term revealed that perceived competence also significantly increased for normal body sizes, as aforementioned ($\beta = 24.71$, $SE = 2.01$, $p < .001$), and the quadratic term revealed a significant curvilinear component ($\beta = -5.89$, $SE = .39$, $p < .001$) with the decline in perceived competence occurring for overweight and obese sizes. Overall, the results explicate that normal weight body sizes are more positively stereotyped, followed by overweight targets, compared to underweight and obese targets.

4.2.3.2. Moderating effect of empathy on men's stereotype content

To test the moderating role of perspective taking and empathic concerns on the relationship between target body size and perceptions of warmth and competence, we conducted four mixed-effect model analyses.

In agreement with the first model tested, we found that body size had a main effect on warmth, $b = 1.04$ ($SE = 0.48$), $t(454) = 2.17$, $p = .030$. Perspective taking did not have a main

effect on warmth, $b = -4.10$ ($SE = 2.21$), $t(150) = -1.85$, $p = .066$, but the interaction effect was significant, $b = 2.22$ ($SE = 0.72$), $t(454) = 3.11$, $p = .002$ (see Figure 5). The reported mixed-effect model explained about 31% of the variance in the data (conditional $R^2 = .31$). Hence, the more men take on other's perspectives in general, the more generous they were on their warmth ratings particularly toward overweight and obese men compared to men who express lower levels of perspective taking. Similarly, empathetic concerns did not have a main effect on warmth, $b = -2.62$ ($SE = 2.04$), $t(150) = -1.29$, $p = .199$, and the interaction effect was marginally significant, $b = 1.27$ ($SE = 0.66$), $t(454) = 1.93$, $p = .054$, conditional $R^2 = .29$.

Moreover, we found that perspective taking did not have a main effect on competence, $b = -2.48$ ($SE = 2.40$), $t(150) = 1.04$, $p = .302$, and the interaction was nonsignificant, $b = -.03$ ($SE = 0.73$), $t(454) = -.05$, $p = .962$. Similarly, empathetic concerns did not have a main effect on competence, $b = 2.95$ ($SE = 2.19$), $t(150) = 1.34$, $p = .181$, but the interaction effect was significant, $b = -1.46$ ($SE = 0.66$), $t(454) = -2.21$, $p = .027$, conditional $R^2 = .48$ (see Figure 6). Contrary to our hypothesis, the more empathetic concern experienced, the more evaluations on competence were increasingly harsh toward overweight and obese targets compared to underweight and normal weight targets and those who demonstrated low levels of empathic concern.

4.2.3.3. Moderating effect of protestant ethic beliefs on men's stereotype content

We also explored the potential interaction effect between protestant ethic beliefs and body size on warmth and competence to understand whether such beliefs might impact men's stereotype content. Contrary to our hypotheses, the results showed that protestant ethics did not have a main effect on competence, $b = 2.41$ ($SE = 2.01$), $t(150) = 1.20$, $p = .234$, nor a significant interaction effect, $b = 0.51$ ($SE = 0.61$), $t(454) = 0.83$, $p = .406$. Therefore, regardless of men's beliefs around hard work and discipline being associated with success

and proficiency, this did not relate to perceptions of competence across different weight categories.

The results also showed that protestant ethics had a main effect on perceptions of warmth, $b = 9.10$ ($SE = 1.84$), $t(150) = 4.94$, $p < .001$. Contrary to our predictions, those with higher levels of protestant ethics reported overall higher scores on warmth across all body size categories compared to those with low levels of protestant ethic beliefs, although evaluations for overweight and obese targets only increased modestly. In addition, a significant interaction effect of protestant ethic beliefs emerged between target body size and evaluations of warmth, $b = -1.86$ ($SE = 0.61$), $t(454) = -3.08$, $p = .002$, conditional $R^2 = .31$ (see Figure 7). In line with previous research (Crandall, 1994), and as expected, stronger protestant ethic beliefs revealed a significant increase in perceptions of warmth for underweight and normal weight targets compared to those with low protestant ethics. Importantly, normal weight men were visibly favored by those who embrace protestant ethics compared to all other BMI classes. However, contrary to our predictions, those high on protestant ethics evaluated overweight and obese targets higher on warmth compared to those low on protestant ethics.

4.3. Discussion

Study 2 used real images of men across 4 prominent weight classes to evaluate the stereotype content of different body size categories. We also investigated additional moderators, empathy and protestant ethics, to understand who might be more or less tolerant in their stereotype content.

Similar to the pilot study and Study 1, higher perceptions of warmth were strongly associated with men of normal weight or overweight status, while underweight and obese class men were perceived as less warm and less well-intentioned. The findings also showed that normal weight men were consistently favored on the dimension of competence compared to all other weight categories. One step further, participants' own BMI did not necessarily

influence their assessments on perceived warmth and competence. However, given that there are too few participants in the underweight and obese groups in our sample, the association between perceptions of warmth and/or competence and participant BMI is not conclusive and more research is required to understand the role of perceivers own weight status.

In line with our hypotheses, the findings also indicate that facets of empathy relate to men's warmth stereotype content. High levels of perspective taking and empathic concern help explicate why some men are more tolerant in their perceptions of warmth toward stigmatized groups compared to men with low levels of empathy. Men who imagine how they would feel in another person's place before criticizing them (perspective taking) or who experience feelings of protectiveness and pity for those who are less fortunate (empathic concern) are characteristics that ultimately buffer one's perceptions of warmth and sincerity toward obese classes.

Interestingly, empathy in the form of perspective taking did not relate to men's stereotype content on competence. However, we found that empathic concern played a significant moderating role between target BMI status and perceptions of competence, although in a different direction than originally expected. The more empathetic concern toward others expressed, the more severe perceptions on competence were toward overweight and obese targets compared to underweight and normal weight targets and compared to those who demonstrated low levels of empathic concern for others. Perhaps the results can be explained by the idea that even if one feels concern and pity for another, it may not be beneficial for boosting their perception of competence and aptitude in a positive direction. Research relates empathy with reduced dissimilarity perceptions and lessens unfriendly perceptions, but this may not be the case for perceptions related to skill and competencies. According to the SCM, pity is associated with perceived warmth and incompetence. It is possible then, that experiencing pity actually elicits passive harm (Cuddy et al., 2008) and transpires into harsh evaluations on the dimension of competence.

Lastly, protestant ethic beliefs concerning hard work and discipline as the road to success was not significantly related to men's perceptions of competence across BMI categories as originally expected. However, we found that such achievement-driven beliefs predicted significantly higher scores on warmth for underweight and normal weight targets compared to those who scored low on such beliefs. Notably, normal weight men were rated the highest on warmth compared to all other BMI classes by those with strong protestant ethics compared to those with low protestant ethics. This demonstrates that protestant ethics may result in associating normal weight men with being hard working and well-disciplined which, in turn, forecasts superior liking and warmth perceptions. Beyond our expectations, we also found that those high on protestant ethics also evaluated disadvantaged groups like overweight and obese targets higher on warmth compared to those low on protestant ethics. This contradicts our hypothesis because we expected increasingly harsh evaluations toward targets who may be perceived as having less control and discipline. A possible explanation for the result may be that another component of protestant ethics, such as the prosocial aspect (van Elk, Rutjens, & van Harreveld, 2017), actually fosters tolerance on the dimension of warmth for disadvantaged groups. Another explanation may be that participants who are aware of their strong work ethic beliefs corrected their stereotype bias. In future research, implicit stereotype measures might be useful for uncovering truths about stereotype perceptions that may have been adjusted for in our study.

5. General Discussion

The research program is the first to distinguish men's stereotype content associated with men of different weight statuses using representative measures. To date, most research in the area of body size perceptions explore BMI classes limited to 2 or 3 categories (e.g., thin, average weight, and overweight) rather than examining the full scope. The literature therefore excludes many body sizes (typically the obese classes), and research often categorizes body sizes as being 'thin' or "average weight" which is highly ambiguous.

Depending on the context of study, thin does not necessarily distinguish underweight from normal weight. Also, average weight can differ significantly across populations and is therefore misleading when trying to determine if a study investigated normal weight ranges or overweight ranges, for example. In order to address this problem, the research herein measured each body size category as defined by the World Health Organization (2013).

Of importance, given that most research in the domain focuses on girls and women's perceptions and attitudes, we further contribute to the field by directing research toward understanding perceptions of men. We also measured participant BMI, empathy, and protestant ethic beliefs to explore individual characteristics that have been recognized for their influence on social inferences. In addition, we integrated the SCM to set the groundwork for examining social perceptions specific to the dimensions of warmth and competence since they are deemed universal principles that differentiate societal group stereotypes and inform, to some extent, a source of stigma (Cuddy et al., 2009).

Overall, men's body size was identified as an important characteristic that men may use to shape their stereotype perceptions. In line with our first hypothesis, we found that perceptions of competence decrease as BMI of a perceived man increases, and this pattern persists regardless of the respondent's own BMI class. This finding is consistent with previous research which documents that children perceive overweight peers as less intelligent and less academically successful compared to their average weight peers (Cramer & Steinwert, 1998; Musher-Eizenman et al., 2004; Penny & Haddock, 2007; Tiggemann & Anesbury, 2000). In addition, all 3 studies revealed that underweight men were perceived slightly lower on the dimension of competence compared to normal weight targets. This might be due to the notion that underweight adults are perceived as having an illness, eating disorder or other maladaptive condition (Allison & Lee, 2015).

Contrary to our second hypothesis, we found that perceptions of warmth and good-heartedness generally decrease as BMI of a perceived man increases. Previous research has

similarly shown that among children, thin children are perceived as friendlier and more caring compared to overweight children (Brylinsky & Moore, 1994). One explanation could be due to the idea that children generally fall into these body size categories themselves and those who are more similar to ourselves may be perceived more favorably and hence, warmer and well-liked. As age increases, so does BMI thus offering a plausible reason why adults show a preference for normal to overweight classes as demonstrated in our studies. Future research ought to further test the similarity hypothesis and its influence on shaping stereotype content.

In addition to identifying the stereotype content of diverse BMI classes, we also observed a glimpse into what men consider to be average and ideal. Not surprisingly, the pilot study revealed that normal weight targets were perceived as closest to the ideal size, while overweight targets were perceived as closest to the average size. It is important to recall that the pilot study included young adult students who may have different perceptions about what is considered ideal. Hence, despite the initial findings, Study 1 showed that perceptions of average and ideal body size largely overlap with normal and overweight targets, suggesting that adult men perceive normal to overweight body sizes to be the status quo. When relating these perceptions back to the stereotype content dimensions of warmth and competence, a clear trend shows that the closer the target was perceived as ideal, the more strongly the target was associated with a high degree of competence and relatively high warmth. This might be another underlying reason why normal weight men are rated favorably, since they are perceived as having reached an ideal body size.

In line with our fourth hypothesis, the findings suggest that high levels of perspective taking and empathic concern reveal why some men are more tolerant in their perceptions of warmth toward overweight and obese men compared to men with low levels of empathy. Increased empathy might therefore help diminish bias toward disadvantaged weight groups, at least on the dimension of perceived warmth (Vescio et al., 2003).

Empathy did not moderate perceptions of competence in the same manner. Empathy in the form of perspective taking did not significantly relate to men's evaluation of competence, but empathic concern played a significant moderating role. Contrary to our hypothesis, the more empathetic concern toward others expressed, the more severe perceptions of competence were toward overweight and obese targets compared to underweight and normal weight targets and compared to those who demonstrated low levels of empathic concern. This finding might be due to the notion that concern and pity for stigmatized groups may actually be destructive because pity elicits passive harm (Cuddy et al., 2008). According to the SCM, pitying stereotypes stem from groups that are perceived as warm and incompetent which cultivate a combination of active facilitation (e.g., being praised for accomplishing easy deeds or praised for their good intentions) and passive harm (e.g., failure to give tangible rewards or credit for efforts) to placate subordinate groups while denying them any rise in status (Cuddy et al., 2008). Consequently, comprising empathic concern alone is not necessarily a solution for reducing negative stereotype content on the competence dimension in men.

Regarding our fifth hypothesis, protestant ethic beliefs did not significantly relate to men's perceptions of competence across BMI categories as originally expected. However, in line with our sixth hypothesis, we found that protestant ethics moderated perceptions of warmth across men's body sizes. High levels of protestant ethics revealed a significant increase in perceptions of warmth across all body sizes. We suspect that the preference for normal weight targets might stem from the notion that these men are seen as having more self-discipline or control over their weight, which is ultimately the essence of protestant work ethics. Surprisingly, strong protestant ethics also led to increased perceptions of warmth for disadvantaged groups compared to those low on protestant ethics. It might be that the prosocial nature of Protestants (i.e., their orientation toward the welfare of others and the social acceptance of all people) influenced their judgements of other's warm-heartedness. In

fact, previous research demonstrates that Protestants are benevolent and recognized for donating more money, goods and clothes to charities (Bekkers & Schuyt, 2008; Elk, Rutjens & van Harreveld, 2017) and altruistic behaviors such as volunteer efforts (Bekkers & Wiepking, 2011). These characteristics associated with Protestants should not be overlooked in future research. In addition, prospective research should examine self-discipline, conformity to traditional views/roles, and anti-fat attitudes as moderating variables.

Lastly, recent advances have alluded to the notion that body size-related stigma among men shows a U-shaped pattern, with men experiencing the greatest stigma at underweight and obese BMI categories (Himmelstein et al., 2018). The patterns portrayed in our findings suggest that highly obese men are stereotyped most severely while mildly obese and underweight men are stereotyped less harsh, but nevertheless, reveal some stigma. It appears that weight-based stigma has a curvilinear component that ought to be understood. Nevertheless, the dominant linear effect tends to correspond with the majority of current research efforts which show that, in terms of adiposity, men hold a thinner than average ideal as desirable and attractive, even in the absence of muscles (e.g., Bryksina et al., 2020; Tiggemann, Martins, & Kirkbride, 2007). Hence, an underweight, lean appearance may be an aspiration for some men (e.g., differences across sexual orientation or clinical subgroups) which would explain the positive associations of a thin appearance that has been documented. Given that our findings show preferential stereotype perceptions for normal to slightly overweight men, future research should continue to explore weight stereotypes using a representative range of body sizes so this curvature is not lost or overlooked. Only by expanding the scope of research to examine all BMI categories can we truly comprehend body size stereotypes and advance the development of solutions to, ultimately, reduce harmful stereotypes.

5.1. Limitations and Conclusions

The studies are not without limitations. First, while this is one of the first research programs to explicitly investigate adult men's body size stereotype content, participants evaluated images of men, so we cannot be certain whether men stereotype women in the same manner. The stereotype content associated with men and women also remains largely unclear for adult women. Interestingly, evidence indicates that weight stigma is experienced by women differently compared to men. Himmelstein and colleagues (2018) suggest that there is a linear trend among women, advocating that underweight women are perceived more favorably compared to normal weight, overweight and obese classes. Future research is necessary to explore the stereotype content accompanying diverse body sizes in order to understand weight bias and stigma-related experiences in both men and women.

Second, the measure of body size in all 3 studies portrayed White men thus limiting the study of stereotype content for alternative ethnicities. Future research should explore a variety of ethnicities and body sizes to determine if the stereotype content would remain the same in ethnically diverse populations.

Third, the studies did not examine muscularity or body build of male targets. Rather, we aimed to examine BMI as a measure of adiposity because current research emphasizes widespread concern for obesity and more specifically, obesity invokes salient stereotypes and biases. Yet, research has neglected to examine a representative range of BMI bodies to explore the stereotypes in more depth, so this research focuses on levels of adiposity. However, since muscularity is deemed a relevant and extremely important aspect of men's body image, this feature should be examined in future studies using the SCM framework.

Fourth, the studies excluded the investigation of possible mediators between observing weight classes and identifying stereotype content. At this time, it is unclear what factors or characteristics might lead to such perceptual content. Prospective efforts should explore perceptions of self-control and self-regulation of the perceived, as well as the

importance of weight and anti-fat attitudes of the perceiver, as underlying reasons for the stereotype content.

Lastly, the studies used explicit stereotype measures and excluded implicit measures of perceptions. Implicit measures are used to tap into biases that people cannot accurately identify by means of normal introspection or cannot express explicitly. Although there is no reason to expect that these findings would operate differently in implicit contexts, future research should extend these results by including, for example, an Implicit Association Test (IAT) or Multi-Category Association Test (MC-AIT) to test whether warm versus cold stereotype perceptions, or competent versus incompetent stereotypes differ between body sizes. Indeed, the IAT and MC-IAT have been previously used to explore implicit stereotype content. For example, Marini (2017) used the MC-IAT to test groups with positive versus negative words and found that across three comparisons with the normal weight category (i.e., overweight, obese, and underweight categories), participants consistently showed preferences for the normal weight category. Such methods could be used to test the dimension of warmth/cold and competence/incompetence associations. The IAT might also shed light on whether stereotype content is indeed non-ambivalent amongst body size categories. In general, implicit methodological designs might offer supplementary data.

In conclusion, the research revealed a clear preference for normal weight and slightly overweight men compared to all other BMI classes. Since the SCM posits that judgements of warmth and competence drive perceivers' emotional and behavioral reactions, it is possible that the two dimensions unveil the stereotype content underlying men's weight-related stigmatization and discrimination. Collectively, the findings endorse the notion set forth by Brewis, SturtzSreetharan, and Wutich (2018) that contemporary theory and research ought to re-conceptualize weight stereotypes and stigma to include men as well as women and underweight as much as obese bodies.

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Table 1

Mean (SD) on perceptions of warmth and competence for each pictorial body size (Pilot Study; $n = 80$)

	Warmth	Competence
	Mean (SD)	Mean (SD)
Pictorial body size 1	5.30 (16.34) _a	49.16 (22.08) _{ab}
Pictorial body size 2	11.43 (14.99) _b	49.11 (21.25) _{ab}
Pictorial body size 3	11.34 (12.00) _b	47.65 (22.28) _{abc}
Pictorial body size 4	12.50 (13.28) _b	46.63 (21.78) _{abc}
Pictorial body size 5	4.40 (15.33) _a	43.97 (19.70) _{bcd}
Pictorial body size 6	-1.29 (17.75) _c	45.85 (21.55) _{abc}
Pictorial body size 7	-0.28 (17.25) _c	45.34 (22.80) _{bc}
Pictorial body size 8	-0.23 (16.94) _c	43.05 (22.63) _{bcd}
Pictorial body size 9	-1.28 (19.37) _c	42.47 (21.15) _{cd}
Pictorial body size 10	-4.23 (21.54) _d	40.80 (19.72) _d

Note. Means with different subscripts (e.g., a, b, c) demonstrate paired contrasts between rows significantly different at $p < 0.05$.

Table 2

Mean (SD) on perceptions of warmth and competence for each pictorial body size (Study 1; $n = 142$)

	Warmth	Competence
	Mean (SD)	Mean (SD)
Pictorial body size 1	8.42 (20.14) _a	62.66 (18.26) _a
Pictorial body size 2	10.92 (18.53) _b	72.05 (15.46) _b
Pictorial body size 3	13.27 (16.39) _b	69.54 (15.68) _b
Pictorial body size 4	13.01 (16.16) _b	72.40 (14.66) _b
Pictorial body size 5	10.41 (14.86) _{ab}	59.21 (16.21) _a
Pictorial body size 6	6.94 (18.35) _a	46.38 (17.88) _c
Pictorial body size 7	3.39 (19.27) _c	45.50 (19.11) _c
Pictorial body size 8	4.69 (20.59) _c	44.73 (19.10) _c
Pictorial body size 9	0.36 (23.23) _{cd}	37.11 (20.31) _d
Pictorial body size 10	-2.87 (26.69) _d	30.64 (22.43) _e

Note. Means with different subscripts (e.g., a, b, c) demonstrate paired contrasts between rows significantly different at $p < 0.05$.

Table 3

Mean (SD) on perceptions of warmth and competence for each target body size (Study 2; $n = 152$)

	Warmth	Competence
	Mean (SD)	Mean (SD)
Underweight men	7.47 (18.06) _a	61.13 (16.44) _a
Normal weight men	19.43 (12.26) _b	74.73 (10.99) _b
Overweight men	15.04 (12.90) _{cd}	60.09 (15.22) _a
Obese men	12.40 (16.71) _d	50.10 (19.72) _c

Note. Means with different subscripts (e.g., a, b, c) demonstrate paired contrasts between rows significantly different at $p < 0.05$.

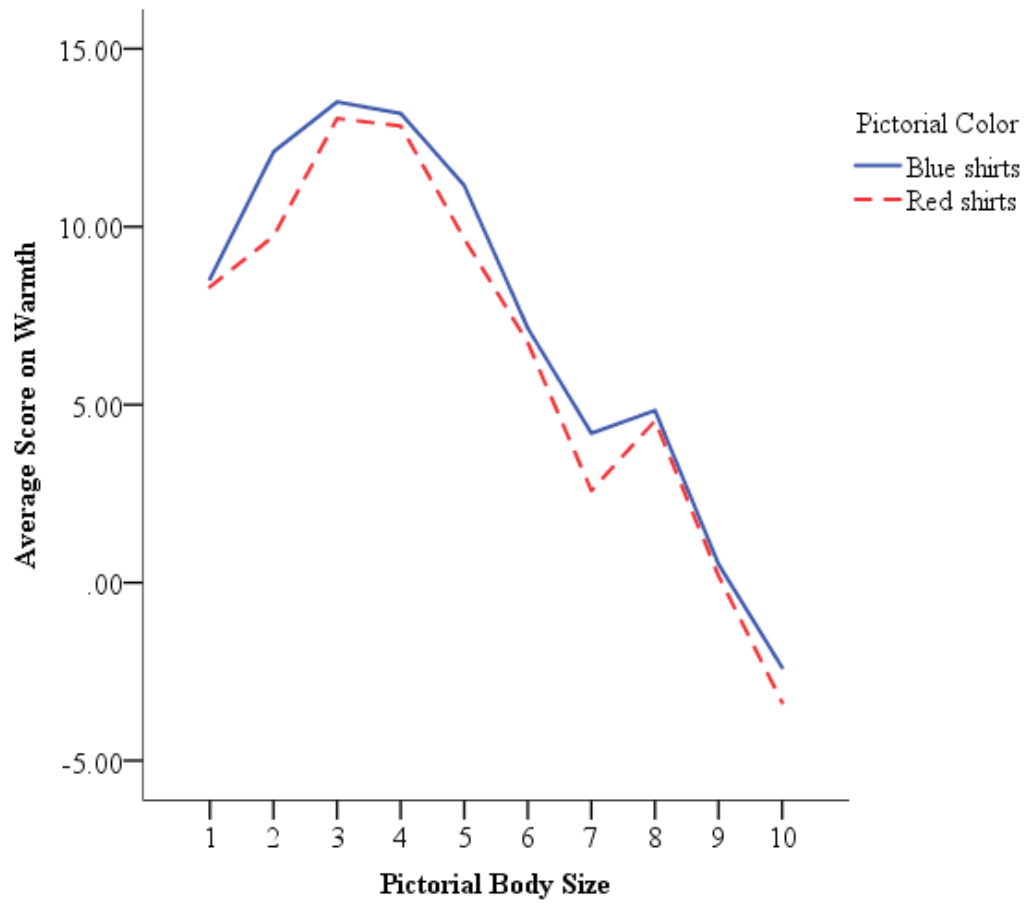


Figure 1. Study 1. Depiction of means on perceptions of warmth across the 10 pictorial body sizes and pictorial color.

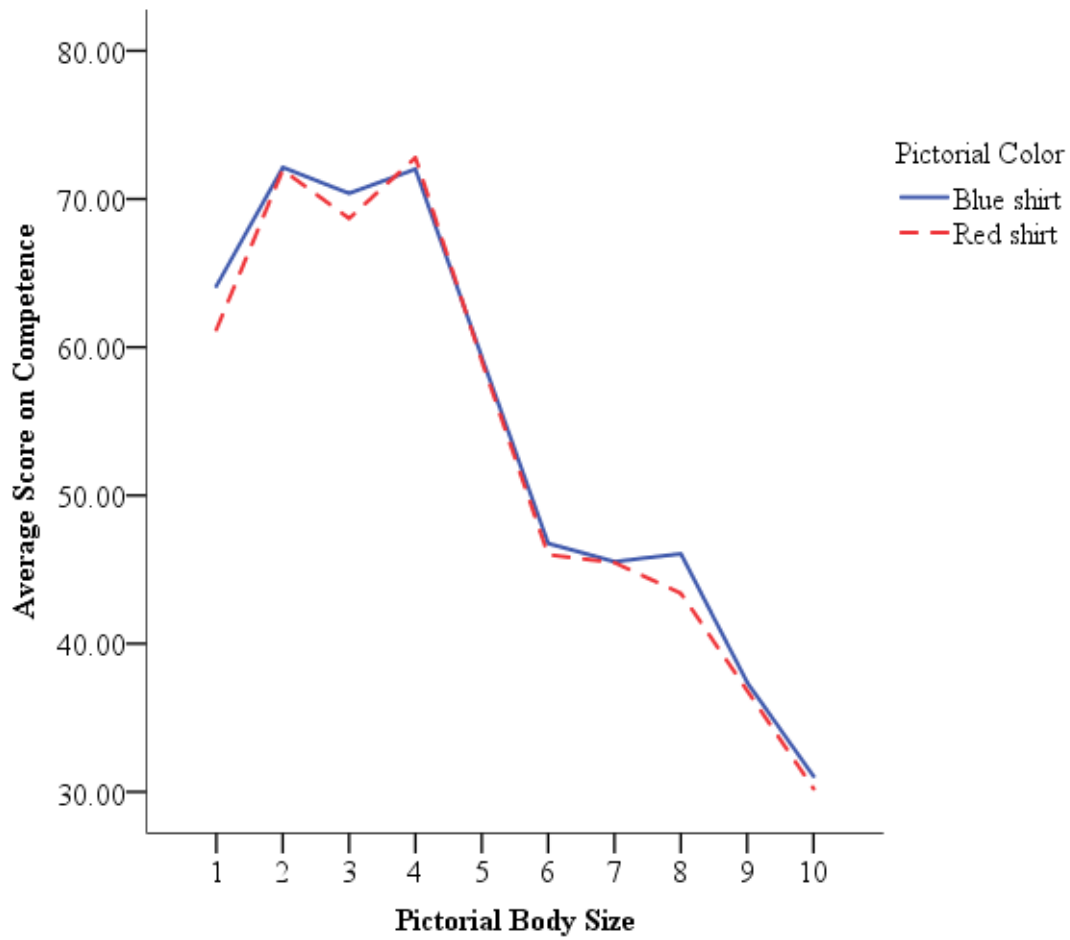


Figure 2. Study 1. Depiction of means on perceptions of competence across the 10 pictorial body sizes and pictorial color.

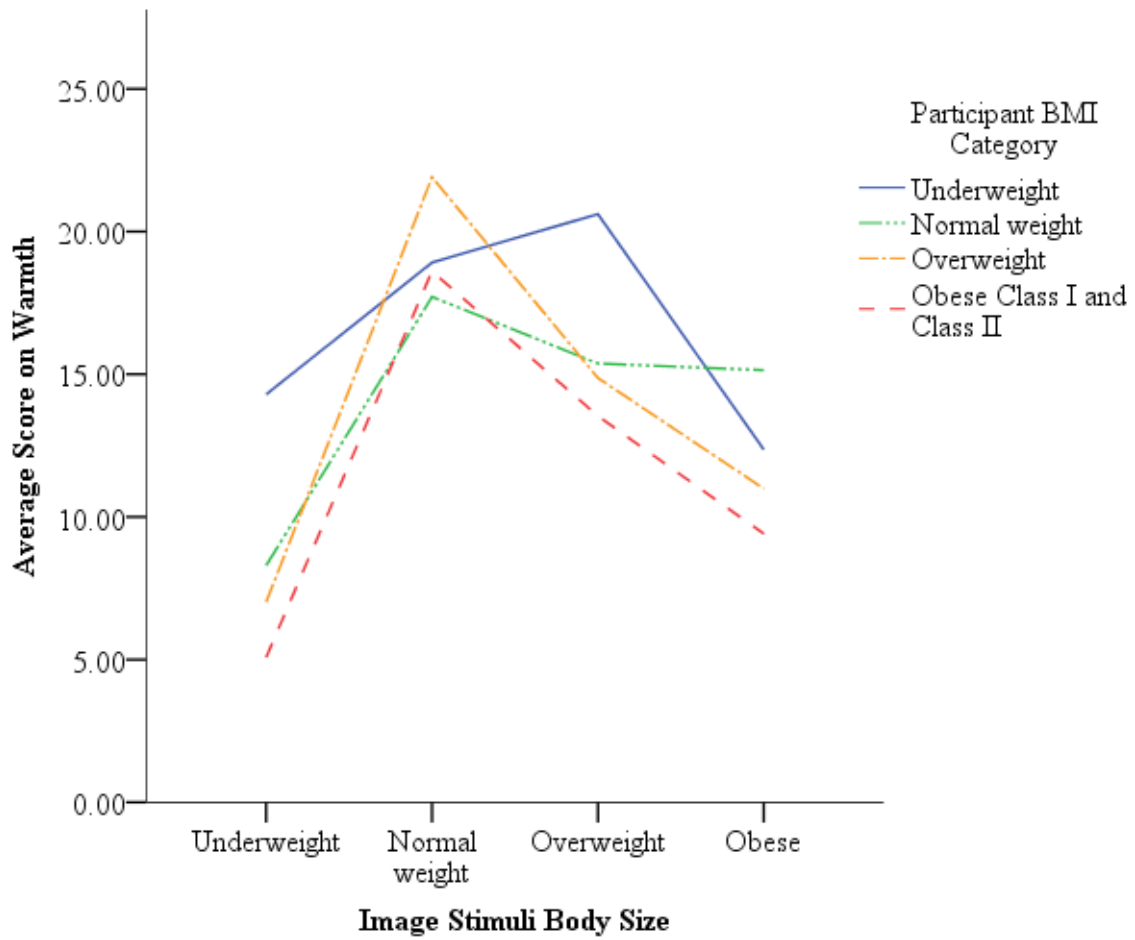


Figure 3. Study 2. Depiction of means on perceptions of warmth across stimuli body size and participant BMI class.

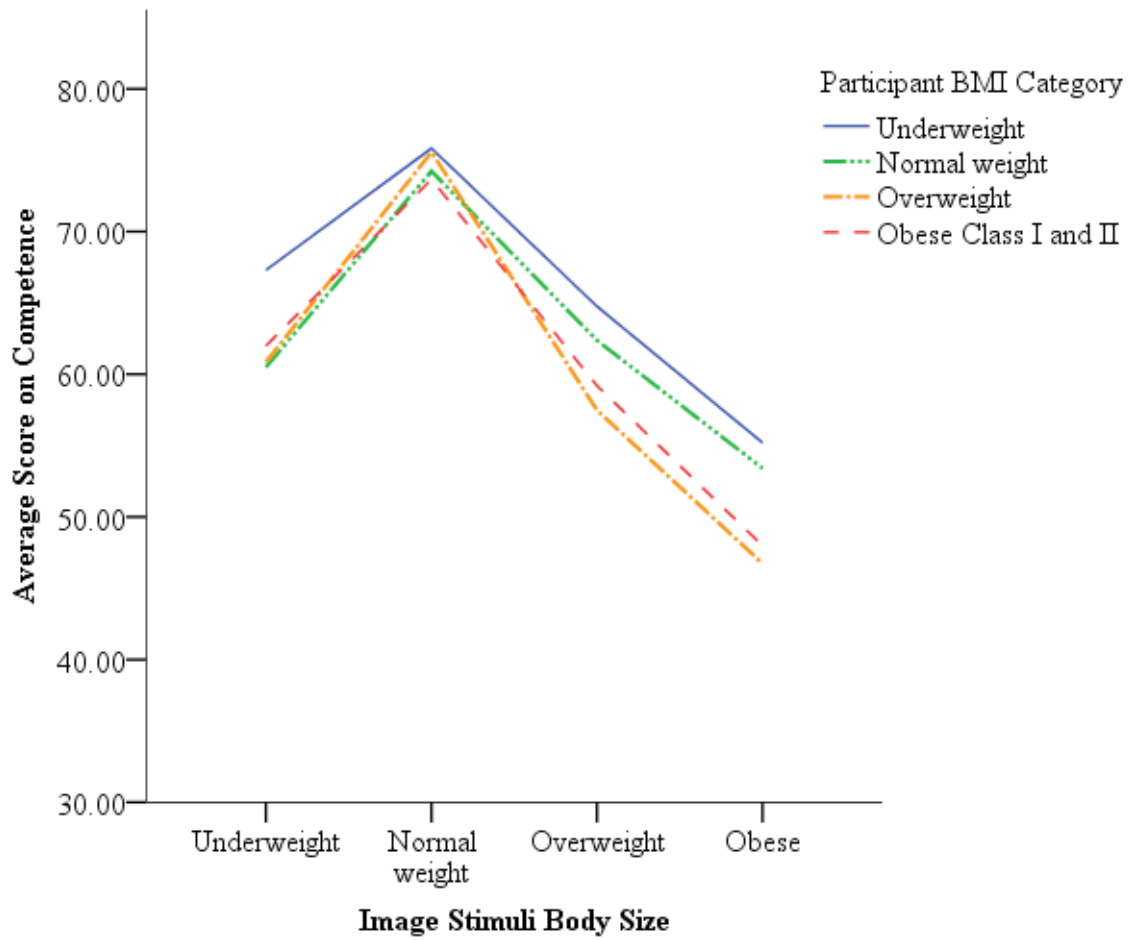


Figure 4. Study 2. Depiction of means on perceptions of competence across stimuli body size and participant BMI class.

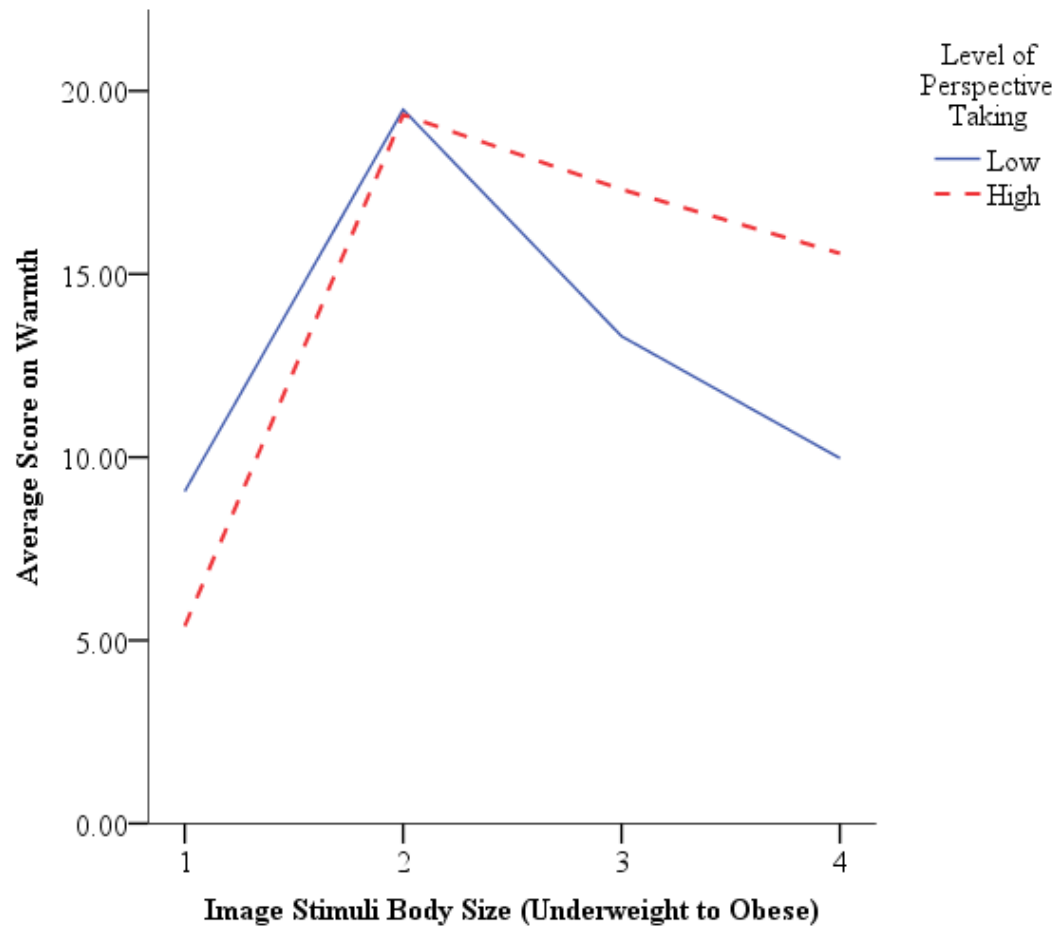


Figure 5. Study 2. Depiction of means on warmth across stimuli body size and participant empathy.

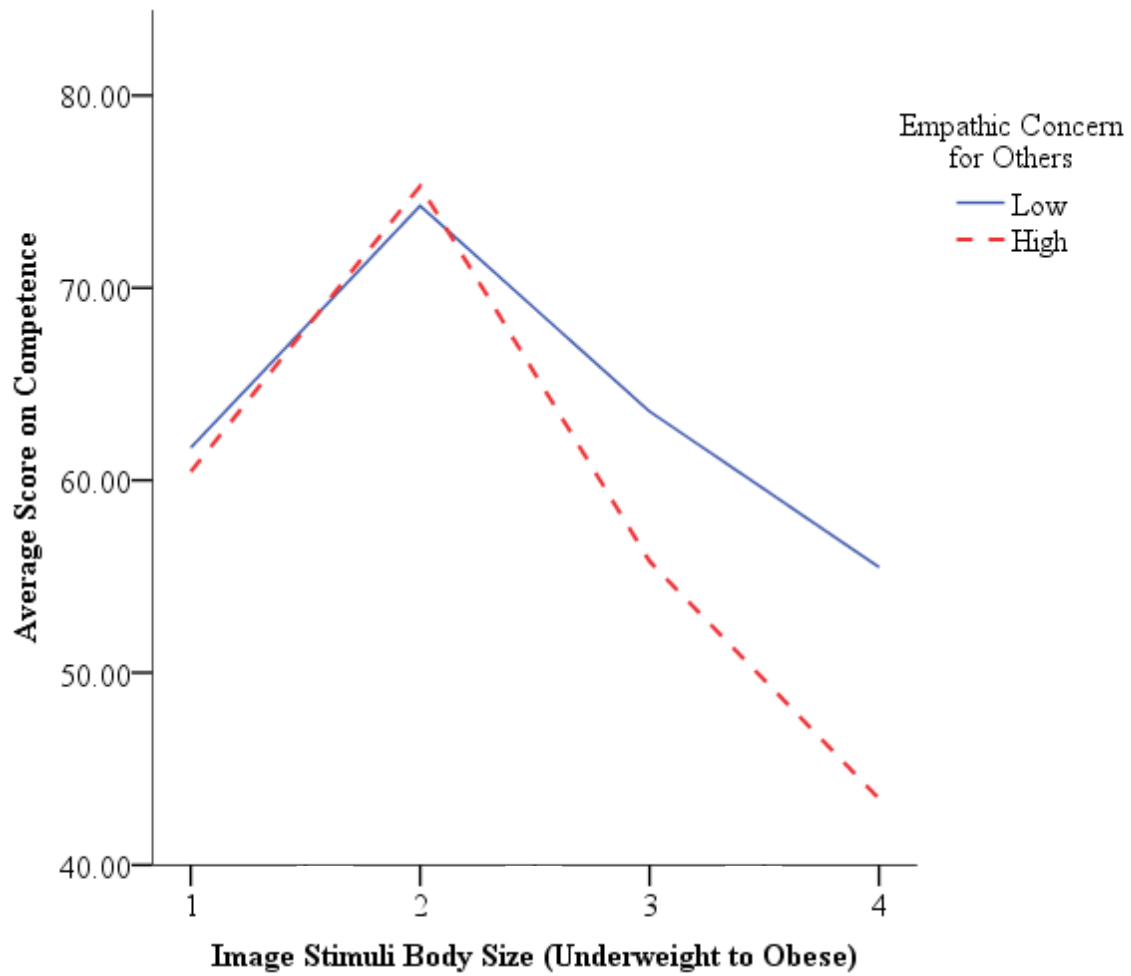


Figure 6. Study 2. Depiction of means on competence across stimuli body size and participant empathy.

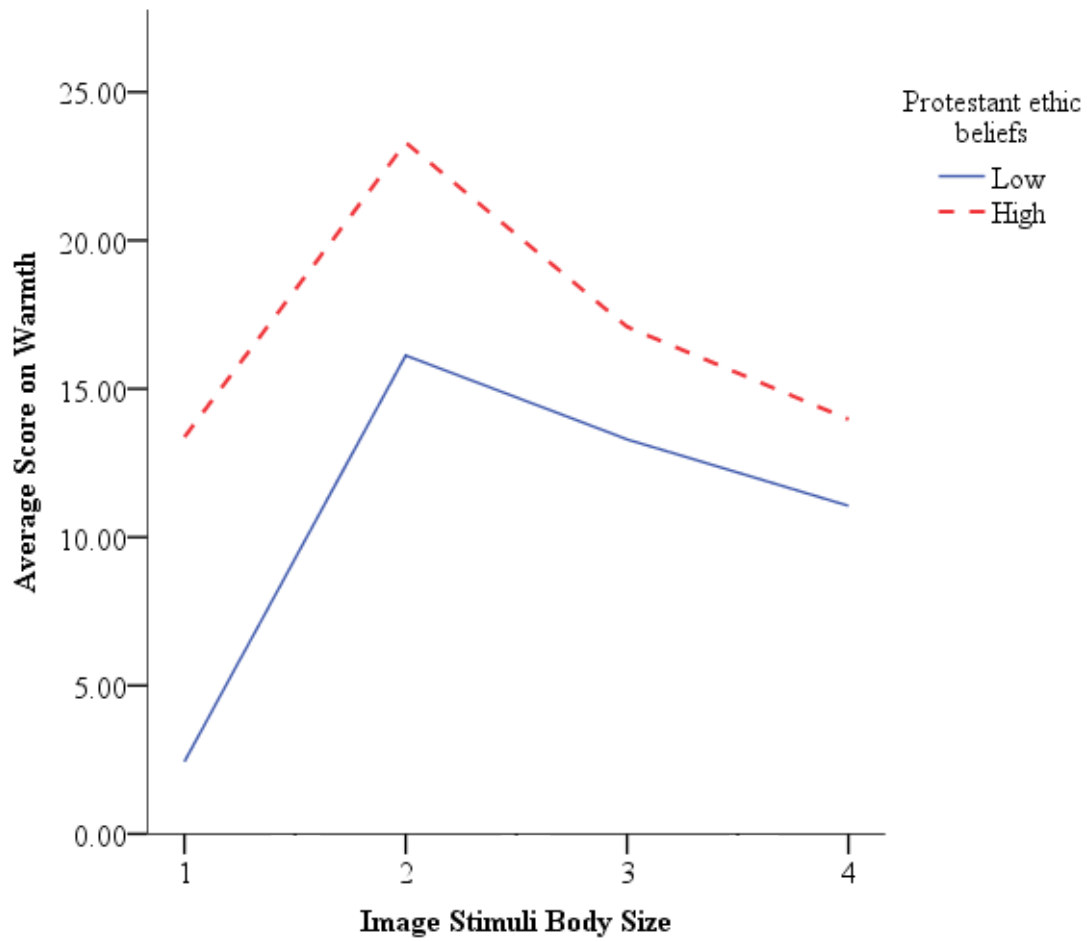


Figure 7. Study 2. Depiction of means on warmth across stimuli body size and participant protestant ethic beliefs.