Effects of Gender of Perceiver and Body Type on Stereotype Formation

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Abstract

Gender of the perceiver and Body Type of target stimuli affect cognitive categorization and can influence the types of stereotypes people form. Thirty-eight undergraduate students answered Likert-scale questions about images of a woman with a thin body type and a woman with an obese body type. Participants assigned attributes, such as success and happiness, to each female, based solely on her body type. The results showed no significant effect for Gender except for the judgmental attribute. Body Type showed significant effects for all of the attributes, except friendliness. The interaction between Gender and Body Type was significant only for estimating how often the women dieted. Results suggested that both genders form similar stereotypes based on body type.
Effects of Gender of Perceiver and Body Type on Stereotype Formation

Among adults aged 20–74 years, the prevalence of obesity increased from 15.0% to 32.9% between 1980 and 2004 (Center for Disease Control and Prevention, 2008). Women are sixteen times more likely than men to experience employment-related discrimination due to their weight (Roehling, Roehling, & Pichler, 2007). Heavier women make less money than their thinner counterparts and have less opportunity for advancement (Rothblum, 1992). A commonly-held belief is that obese people can control their weight, so they are blamed for being overweight (Crandall 1994, Crandall & Reser, 2005). Discrimination against obese women may occur if potential employers apply negative stereotypes during the interview process. Stereotyping is most likely to occur when a perceiver lacks the motivation, cognitive capacity or time to think deeply about others (Macrae and Bodenhausen, 2000).

Stereotypes are useful if they are accurate. Automatic negative stereotypes that form about women based solely on their body type are not useful and can lead to discrimination in the workplace. Understanding why men and women form different stereotypes about women with thin versus obese body types will be useful in understanding what individual differences may affect the process of cognitive categorization and, more specifically, stereotype formation.

Humans have a limited capacity to process information (Miller, 1956). Quickly categorizing people provides the perceiver with the maximum amount of information with the least amount of cognitive effort (Rosch, 1978). Humans use cognitive categorization to simplify the world around them. Categorization provides perceivers with a large amount of stereotypical information (Macrae, Milne, & Bodenhausen, 1994). Stereotypes are a useful tool for humans interpreting the constantly new environments in which they find themselves and help streamline the person perception process (Macrae & Bodenhausen, 2001).
People encounter strangers on a daily basis. In order to avoid overloading their cognitive abilities with the infinite details that make each person they encounter unique, the mind pays attention to certain features that allow the perceiver to categorize the other person quickly. Cognitive categorization can take many forms and includes the totality of information that perceivers have in mind about particular classes of individuals (Macrae & Bodenhausen, 2000). Cognitive categorization is a mechanism used by perceivers to reduce and, at the same time, elaborate on available information about people around them (Mackie, Hamilton, Susskind, & Rosselli, 1996). Perceivers categorize people based on many things, such as age, sex or race (Zebrowitz, 1996). After performing the appropriate cognitive categorization, they can allow a stereotype to form or inhibit one from forming. If perceivers are aware of their potential for stereotypic bias, they can adjust their thinking immediately and avoid application of negative stereotypes (Kawakami, Spears, & Dovidio, 2002). Another alternative is that perceivers may actively attempt to stop stereotypic thoughts from entering their deliberations, at all (Bodenhausen & Macrae, 2000). Stereotypes are aids to explanations, energy-saving devices and shared group beliefs (McGarty, 2002).

Gender differences exist in stereotype formation. Women stereotype people based on the group with which they are associated more so than men do (Gurwitz & Dodge 1977). Women attribute more of the stereotypes of a whole group to one target person more often than men do. Even after the mention of membership in a certain stereotyped group, men do not attribute all of the stereotypes to a target person. Gender differences also exist in how men and women rate targets on their physical attractiveness, after seeing them eat (Martins, Pilner and Lee 2004). Body size influenced the males’ rating of physical attractiveness of others. Body size did not influence females’ rating of physical attractiveness.
Males and females both buy into the shared belief regarding the ideal body type (Fallon & Rozin, 1985). Males and females choose the thinner body type as the most attractive and feel that the opposite sex will also choose the thinner body type as most attractive.

People’s internal feelings regarding their own weight can influence the way they stereotype others based on weight (Cash and Brown, 1989). People with an ‘external locus of control’ (i.e. people who are not satisfied with their own weight) believe weight control is due to genes or luck. Obese people do not get blamed for being overweight because it is out of their control. Those with an ‘internal locus of control’ (i.e. those satisfied with their weight) have greater negative stereotypes of obese people (Tiggeman & Rothblum 1977), because they are seen as responsible for their weight. Body type is a common basis of categorization and can determine the content of the stereotype (Zebrowitz, 1996). People perceive thinner white women as having more success in life than heavier white women (Wade & DiMaria, 2003). People who viewed obese faces rated them as less attractive and less likeable (Galper & Weiss, 1975).

Research shows that both gender and body type influence whether a stereotype is formed and if it is positive or negative (Cash & Brown, 1989). The male view of a typical female body varies more widely from the female average. The female view of the typical male body is more accurate with the male average (Harris, Walters, & Waschull, 1991). Women tend to overestimate the level of thinness men desire in a female body type (Fallon & Rozin, 1985). Both men and women tend to apply negative stereotypes to women with endomorph body types, which are typically overweight. Men and women apply positive stereotypes to mesomorph body types, which are typically thinner (Ryckman, Robbins, Kaczor, & Gold, 1989).

Past research has suggested that body type of a person can affect stereotype formation about that person. Previous research did not utilize different enough body types to
clearly measure the effect of body type on stereotype formation. There is limited research regarding how gender affects stereotype formation and much of the previous research has focused on the perceiver applying gender role stereotypes to a person based on specific prompts or by priming a stereotype. This study will focus on understanding how the gender of the perceiver affects the attributes applied to people with an obese or thin body type. The experimental design will measure attributes in response to images of women with significantly different body types. This is what typically happens most often in the real world. Perceivers quickly form stereotypes in response to visual stimuli -- “other people” who are different from or similar to themselves. This information will provide more insight into how body type and gender can influence cognitive categorization, which leads to negative stereotype formation. This research may also help social psychologists develop other cognitive tools to inhibit negative stereotype formation.

Method

Participants
Thirty-eight college students (15 males and 23 females) participated in this experiment to receive extra credit in their Psychology 1 class. Nine participants failed to complete all measures and were not included in the study. The participants were ethnically diverse and identified themselves most commonly as Asian, White, Latino, African American, and Indian.

Materials
The researchers presented participants with black and white images of two consenting women (see Appendix A and B). The women were of the same ethnicity and wore black workout pants and white tank tops. To activate immediate reactions from participants regarding attributes they would apply to thin or obese women, the researchers used images of women with significantly different weights instead of asking them to make attributions about obese or thin
people in general, without visual stimuli. The thin woman (Woman A) weighed 124 lbs. The heavier woman (Woman B) weighed 240 lbs. The researchers grayed out the women’s faces, in order to eliminate the possible influence of facial attractiveness on participants’ answers.

The response sheet consisted of 13, 5-point Likert scale questions per stimulus. The two-page response sheet (Appendix C) was adapted from Kayaer & Bhundhumani (2007). Each participant received an identical response sheet to record his or her responses to the questions for Woman A and Woman B. The response sheet included questions regarding each woman’s estimated weight and asked participants to rate the woman’s weight based on her height being 5’3” or 5’7”. The researchers asked participants to rate their perception of the women’s levels of happiness and success in life. The response sheet asked participants to judge how popular, friendly, judgmental and outgoing each woman was. The researchers added additional questions regarding how often the participants thought the women dieted and exercised. Participants responded to a background questionnaire (Appendix D) regarding their gender, sexual orientation, ethnicity, height, current weight, ideal weight, and diet patterns. The researchers also asked participants if they stereotype people based on physical appearance.

Procedure

Upon arrival, the participants completed consent forms. The researchers gave half of the male participants and half of the female participants the stimulus picture of Woman A and a response sheet. The researchers gave the remaining participants the picture of Woman B and a response sheet. Participants had approximately three minutes to complete the response sheet and then the researchers collected the response sheets. After collecting all of the response sheets, the researchers gave each participant the stimulus picture they had yet to see, along with another response sheet. Participants had three minutes to complete the response sheet for the second
stimulus. The researchers collected the final set of response sheets. Finally, the researchers distributed a background questionnaire to all participants and the participants had three minutes to complete it.

**Design and Analysis**

Testing occurred in a mixed design with 4 experimental conditions. Gender was the between-subjects factor and Body Type was the within-subjects factor. The responses measured how the participants used cognitive categorization to form stereotypes, based on measuring positive and negative attributes about the women presented. The researchers converted the Likert scale responses into scores, based on measurement in millimeters, starting from the left, to the point where the participant had made the slash mark.

**Results**

This study evaluated the effects of Gender of perceiver and Body Type on stereotype formation.

**Effects of Body Type**

Participants estimated the weight difference between the thin woman (M=121.82, SD = 22.18) and obese woman (M = 228.33, SD = 43.80) at 107 lbs. This difference was statistically significant, \( F(1,36) = 188.04, p < .001 \).

When asked to categorize the weight of the women, Body Type had a significant effect on the participants’ responses. Participants categorized the heavier woman as obese at 5’3” (M = 1.05, SD = 2.26) and as somewhat overweight at 5’7” (M = 2.14, SD = 2.71). Participants categorized the thin woman as average at 5’3” (M= 4.93, SD = 1.04) and somewhat underweight at 5’7” (M = 6.27, SD = 1.22). All of the differences described were significant (see Table 1), unless otherwise noted.
Participants rated the thin woman as dieting more often (M = 5.10, SD = 2.51) than the obese woman (M = 2.12, SD = 2.22). Participants also rated the thin woman as exercising more often (M = 6.35, SD = 1.91) than the obese woman (M = 1.77, SD = 1.81).

Participants applied positive attributes to Woman A, the thin body type. Participants rated the thin woman as happier (M = 5.90, SD = 1.56) than the obese woman (M = 3.54, SD = 2.17). Participants rated the thin woman as more successful (M = 5.56, SD = 1.46) than the obese woman (M = 4.61, SD = 2.25). Participants rated the thin woman as more outgoing (M = 5.68, SD = 1.96) than the obese woman (M = 3.77, SD = 2.09). Participants rated the thin woman as having a more positive attitude about life (M = 6.34, SD = 1.53) than the obese woman (M = 4.23, SD = 2.32).

Participants rated the thin woman as more popular with other women (M = 5.80, SD = 1.74) than the obese woman (M = 3.78, SD = 2.18). Participants rated the thin woman as more popular with men (M = 6.12, SD = 1.78) than the obese woman (M = 2.55, SD = 2.34).

Participants rated the thin woman as more judgmental (M = 4.78, SD = 2.21) than the obese woman (M = 3.50, SD = 2.37).

Participants did not rate either woman as more or less friendly, $F(1, 36) < 1$. 

Effects of Gender

None of the measures showed significant differences between genders, except for how judgmental participants rated the women. Male participants rated both women as more judgmental than did the female participants, $F(1,36) = 6.12, p < .05$. 

Insert Table 1 about here
Interaction of Gender and Body Type

The interaction of Gender and Body Type affecting participant’s judgments of how often the women dieted was significant, $F(1,36) = 7.49, p = .01$. Females estimated that the thin woman dieted very often (M = 5.51, SD = 2.60) compared to the obese woman (M = 1.35, SD = 1.63). Males estimated that the thin woman (M = 4.46, SD = 2.31) dieted more often than the obese woman (M = 3.30, SD = 2.54).

Discussion

This study investigated the effects of gender and body type on stereotype formation. Gender influences the types of stereotypes formed (Harris et al., 1991, Ryckman et al., 1989). Research regarding stereotype formation has shown that body type has a significant effect on the type of stereotype formed (Cash & Brown, 1989, Wade & DiMaria, 2003). The present study addressed lack of research on the effects of participant gender on stereotype formation and expanded the existing research regarding the effect of body type on whether positive or negative stereotypes are applied by the perceiver during cognitive categorization. This study expanded on previous research by asking participants to stereotype based on visual stimuli of a body image, rather than using stick figure stimuli, non-visual stimuli or stimuli that included facial features.

Gender of the participants did not have a significant effect on their rating of how happy, successful, friendly, positive, and outgoing the women in the pictures were. Men and women also did not differ in estimating the weights of the women in the images, how often they exercised, nor how popular they were with other men and women. Gender did have a significant effect on how judgmental the participants predicted the women to be. Male participants rated both the thin woman and the obese woman as more judgmental than did the female participants. These findings are in contrast to those of Gurwitz and Dodge (1977) who found that women tend
to stereotype more often. Fallon and Rozin (1985) reported that men and women had similar stereotypes regarding ideal body type, and the present study found that the genders also had similar ratings of the women on the majority of attributes measured. This could be because males and females are equally influenced by media images of the thin ideal body type for women. Popular new television shows like “Celebrity Fit Club” and “The Biggest Loser” encourage the idea that losing weight is a personal choice and being thin is the ideal body type everyone should try to attain.

Body type of the woman presented to participants had a significant effect on all of the attributes measured, except friendliness (see Table 1). Participants rated the obese woman as being less happy, less successful and less outgoing, and having a less positive attitude toward life. Participants rated the thinner woman more positively on all of the attributes measured (see Table 1). Previous studies thoroughly documented this tendency to apply positive attributes to thin women (Wade & DiMaria, 2003, Ryckman et al., 1989). Other studies show that being overweight significantly affects how successful a woman is judged to be (Wade & DiMaria, 2003). This study adds further evidence that body type alone can cause differences in what types of attributes are applied to a person based on the stereotype of the perceiver.

The interaction of gender and body type was statistically significant for the diet attribute, but none of the other attributes showed a significant interaction. Male participants thought the thin woman dieted often compared to the obese woman. Female participants estimated that the thin woman dieted very often compared to the obese woman. The desire of women to project a positive image by being thin may lead them to overestimate dieting patterns among thin women (Leary, Tchividjian, & Krazberger, 1994).
The results regarding diet and exercise suggest that participants believed that a woman’s weight is under her control. Even though a person’s body weight can be affected by a complex interaction between genetic, environmental, and biological factors (Puhl & Brownell, 2001, 2003) the participants in the study indicated that the thin woman dieted and exercised significantly more. Beliefs regarding the controllability of weight result in participants forming negative attitudes toward obese people (Crandall & Martinez, 1996).

If obese women are viewed as personally responsible for being overweight, because their weight is under their control (Cahnman, 1968), it is more likely that discrimination by employers and others will occur, because of the feeling that obesity is a sign of a person’s determination and willpower. In American culture, the thin body type is ideal or more desirable (Fallon & Rozin, 1985).

This study is a part of a line of research that is important for understanding how stereotypes form based on the gender of the perceiver and body type. Individuals categorize others, in order to save cognitive resources for other tasks, as members of particular groups -- usually groups about which they have a great deal of generalized or stereotypic knowledge (Neuberg & Fiske, 1987). Once people have been categorized to a group, such as obese or thin, if the perceiver has a stereotype about this group, the entire constellation of traits may be attributed to that individual, especially if not much else is known about that person besides their group membership (Gurwitz & Dodge, 1977).

One important direction for further research is to investigate in more detail how gender of the participants influences the types of stereotypes formed. Perhaps the results of measuring different attributes would reflect gender differences in stereotype formation. Additional research to determine why an obese body type causes negative stereotypes to form so easily is critical.
Researchers could focus attention on understanding how some people effectively inhibit negative stereotypes. Obesity is on the rise in the United States and being obese is associated with having lower socio-economic status. This could be due to the widespread discrimination occurring by employers against female job applicants. Stereotypes may not be stable over time (Garcia-Marques, Santos, & Mackie, 2006) and it is important to understand what mechanisms lead to changes in stereotypical beliefs or thinking. Being able to change negative stereotypical thinking about obese job applicants may stop discrimination and offer obese people equal access to employment opportunities.
References


Appendix A: Stimulus Woman A
Appendix B: Stimulus Woman B
Appendix C: Response Sheet

Directions: Please make a “slash” mark across the line according to your response like the example below.

<Example> Jane has a positive outlook on life.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Somewhat</th>
<th>Moderately</th>
<th>Very</th>
<th>Extremely</th>
</tr>
</thead>
</table>

Woman A

1) How much would you estimate this woman weighs? __________ lbs.

2) How would you categorize her weight if her height was 5’3”?

<table>
<thead>
<tr>
<th>Obese</th>
<th>Somewhat Overweight</th>
<th>Average</th>
<th>Somewhat Underweight</th>
<th>Underweight</th>
</tr>
</thead>
</table>

3) How would you categorize her weight if her height was 5’7”?

<table>
<thead>
<tr>
<th>Obese</th>
<th>Somewhat Overweight</th>
<th>Average</th>
<th>Somewhat Underweight</th>
<th>Underweight</th>
</tr>
</thead>
</table>

4) How often do you think she **diets**?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
<th>All the time</th>
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</thead>
</table>

5) How often do you think she **exercises**?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
<th>All the time</th>
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</table>

6) How **happy** do you think this woman is?

<table>
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<tr>
<th>Not at all</th>
<th>Somewhat</th>
<th>Moderately</th>
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<th>Extremely</th>
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7) How **successful** do you think this woman is?

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<tr>
<th>Not at all</th>
<th>Somewhat</th>
<th>Moderately</th>
<th>Very</th>
<th>Extremely</th>
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</table>
8) How **outgoing** is this woman?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Somewhat</th>
<th>Moderately</th>
<th>Very</th>
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</table>

9) How **positive** do you think this woman’s attitude about life is?

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10) How **judgmental** do you think this woman is?

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<tr>
<th>Not at all</th>
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</table>

11) How **popular** do you think this woman is with other women?

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<tr>
<th>Not at all</th>
<th>Somewhat</th>
<th>Moderately</th>
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<th>Extremely</th>
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</table>

12) How **popular** do you think this woman is with men?

<table>
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<tr>
<th>Not at all</th>
<th>Somewhat</th>
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<th>Extremely</th>
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</table>

13) How **friendly** do you think this woman is?

<table>
<thead>
<tr>
<th>Not at all</th>
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<th>Moderately</th>
<th>Very</th>
<th>Extremely</th>
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</table>
Appendix D: Background Questionnaire

1. Gender: 
2. Sexual Orientation: 
3. Ethnicity: 
4. Height: 
5. Current weight (estimate): 
6. Are you happy with your weight? _______ If not, what is your ideal weight? 
7. Have you ever dieted to achieve a different weight or body type? 
8. If you have dieted, when and what did you do to lose/gain weight? 
9. Are you currently on a diet? 
10. Do you exercise? _______ If so, how often? 
11. Have you ever seen a nutritionist? 
12. Do you know how many calories you should consume to maintain your current weight? 
   _______ If yes, how many? _______ 
13. Do you eat healthy? 

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<tr>
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<th>Somewhat</th>
<th>Moderately</th>
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14. Do you think that eating healthy food leads to being thin? 

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<tr>
<th>Not at all</th>
<th>Somewhat</th>
<th>Moderately</th>
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15. Do you think that obese people can control their weight? 

<table>
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<tr>
<th>Not at all</th>
<th>Somewhat</th>
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</table>

16. Are obese people usually happier than thin people? 

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<tr>
<th>Not at all</th>
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17. Do thin people have less health problems than obese people? 

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</table>
18. Do you normally judge someone’s personality based on their physical appearance before actually meeting them?

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<th>Moderately</th>
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</table>

19. Do you think a person’s weight is genetically predetermined?

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<th>Not at all</th>
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Table 1

Analysis of Variance for significant effects of Body Type on attributes

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>Diets more often</td>
<td>36</td>
<td>23.73</td>
<td>.001</td>
</tr>
<tr>
<td>Exercises more often</td>
<td>36</td>
<td>125.70</td>
<td>.001</td>
</tr>
<tr>
<td>Happy</td>
<td>36</td>
<td>33.50</td>
<td>.001</td>
</tr>
<tr>
<td>Successful</td>
<td>36</td>
<td>8.27</td>
<td>.001</td>
</tr>
<tr>
<td>Outgoing</td>
<td>36</td>
<td>21.64</td>
<td>.001</td>
</tr>
<tr>
<td>Positive attitude</td>
<td>36</td>
<td>26.7</td>
<td>.001</td>
</tr>
<tr>
<td>Popular with other women</td>
<td>36</td>
<td>20.71</td>
<td>.001</td>
</tr>
<tr>
<td>Popular with other men</td>
<td>36</td>
<td>62.98</td>
<td>.001</td>
</tr>
<tr>
<td>Judgmental</td>
<td>36</td>
<td>7.63</td>
<td>.001</td>
</tr>
<tr>
<td>Friendly</td>
<td>36</td>
<td>&gt;1</td>
<td></td>
</tr>
</tbody>
</table>