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Do men find “bony” women attractive?: Consequences of misperceiving opposite sex perceptions of attractive body image

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Abstract

Due to its role in the development and maintenance of eating disorders, body image perceptions and dissatisfaction continue to be an important area of study. Perceptions of attractive body images held by members of the opposite sex are an important determinant of body image satisfaction among both men and women. This research shows that men are accurate in their perceptions of what women find attractive among men, but women believe men want women to be thinner than men actually report. Furthermore, this inaccurate perception is associated with eating disorder symptomatology. The role of contingent self-worth was also assessed. Results indicate that individuals whose self-worth is more contingent on appearance-related standards experience more negative consequences than those who misperceive what the opposite sex finds attractive, but whose self-worth is less contingent on appearance. Implications for intervention are discussed.

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Introduction

Past research has shown that body image disturbance among college students is related to eating disorders (Cooley & Toray, 2001; Duva & Lester, 1997). More specifically, it has been shown that body image disturbance is a precursor to eating disorders (Killen, Taylor, Hammer, Litt, Wilson, Rich, Hayward, Simmonds, Kraemer, & Varady, 1993). Preoccupation

with and perceptual disturbance of body shape and weight are also included as diagnostic criteria of both bulimia and anorexia nervosa (American Psychiatric Association, 1994). Body image disturbance, in its own right, has been the target of several interventions, including an undergraduate body image course (Springer, Winzelberg, Perkins, & Taylor, 1999) and social comparison based interventions (Posavac, Posavac, & Weigel, 2001).

Body image and social comparisons

Given the emphasis on social comparison processes among women, one might presume that eating

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disorder symptomatology can arise from such comparisons. In fact, viewing media images depicting thin models has been found to predict eating disorder symptomatology among female college students (Stice, Schupak-Newberg, Shaw, & Stein, 1994; Stice & Shaw, 1994). In addition to predicting serious pathological outcomes, media exposure has been linked to changes in body image disturbance and satisfaction (Groesz, Levine, & Murnen, 2002).

Several studies, many using a social comparison framework, have found support for the relationship between viewing thin media images and decreased body satisfaction among female college students (discussed in Thompson & Heinberg, 1999). In a recent study, Lin and Kulik (2002) found that college women experienced decreased body satisfaction and confidence of attractiveness after viewing a single image of a thin woman. College-aged women exposed to images of thin models have also been found to exhibit the lowest levels of weight satisfaction, when compared to women exposed to plus-size or average-size models (Irving, 1990). Finally, in a meta-analysis of 25 studies, Groesz, Levine and Murnen (2002) found an average effect size of -0.30 between media exposure and body image satisfaction. Despite an ample number of studies, very little attention has been given to the possibility that social comparisons with others may be partially motivated by the desire to gain information about what the opposite sex finds attractive.

Findings from the field of evolutionary psychology, and mate selection more specifically, would lead one to believe that what the opposite sex finds attractive should be most important in determining how one is affected by appearance-related comparison information. Over the past several decades attractiveness has become more important to both males and females (Buss, Shackelford, Kirkpatrick, & Larsen, 2001), suggesting that today women and men should be especially sensitive to what the opposite sex finds attractive. Evolutionary theories of mate selection predict that men choose their mates based on reproductive ability. Previous research has shown that a pleasing appearance is a reflection of a woman's reproductive ability (Buss, 1987). One aspect of physical appearance is the waist-to-hip ratio (WHR), which provides a measure of body fat distribution. Men are known to prefer women with a low, yet *normal* WHR, which is indicative of better health and reproductive status

(Singh, 1991). Men do not prefer women with WHRs indicative of extreme thinness.

Normative misperceptions

Normative misperceptions have been found to play a role in several behaviors, most notably binge drinking among college students. For example, research has shown that college students misperceive peer drinking norms, most often overestimating peer drinking levels (Prentice & Miller, 1993). Furthermore, this overestimation of peer drinking levels leads to increased levels of personal alcohol consumption (see Borsari & Carey, 2001) indicating that targeting peer drinking misperceptions may be an effective intervention for binge drinking among college students (Neighbors, Larimer, & Lewis, *in press*). Similar results have been found for perceptions of gambling (Larimer & Neighbors, *in press*).

In fact, several studies have investigated the effects of correcting peer drinking misperceptions on college students' alcohol consumption levels. Personalized interventions present an individual student's perceived level of peer drinking in addition to the actual peer drinking level in order to decrease the individual student's own consumption level. Interventions containing a normative misperception component have been found to reduce alcohol consumption (Baer, Marlatt, Kivlahan, Fromme, Larimer, & Williams, 1992; Dimeff, Baer, Kivlahan, & Marlatt, 1999). One study investigating the sole effects of normative feedback intervention techniques also found significant decreases in alcohol consumption (Neighbors et al., *in press*).

Within the realm of body image, previous research has shown that individuals inaccurately perceive what the opposite sex finds attractive in terms of body image (Fallon & Rozin, 1985). More specifically, it has been shown that women have inaccurate perceptions of what men find attractive in women. Specifically, women believe that men find very thin women attractive, but men report finding less thin women most attractive (Lamb, Jackson, Cassiday, & Priest, 1993). This finding has been replicated among females from other western countries as well (Huon, Morris, & Brown, 1990). Consistent with this is the fact that women report their ideal body image as being smaller than that which men find most attractive. Conversely,

men do not exaggerate women's attraction to thin men, and if anything they may do the opposite.

In another study investigating misperceptions among different generations, it was demonstrated that older women, in addition to their college-aged daughters, also believed that same-aged men preferred a thinner female body image than men actually preferred (Rozin & Fallon, 1988). These findings were replicated using non-related subjects of varying ages, indicating that there are cohort differences in body image misperceptions as well (Lamb et al., 1993). Taken together, these results suggest that young women today who underestimate male perceptions of attractive female body image may experience social and cultural factors that are different than those of women in the past, and may therefore, be at increased risk of eating disorders or related behaviors and attitudes. To date, no studies have investigated whether or not this misperception is in fact associated with various negative outcomes associated with eating disorders.

Contingent self-esteem

Contingent self-esteem reflects the extent to which positive self-regard is conditional or contingent upon social approval, appearance, meeting expectations or other criteria (Crocker & Wolfe, 2001; Deci & Ryan, 1995; Kernis, 2003). Two levels of generality have been examined in the literature. Kernis and coworkers have examined the extent to which a person's self-esteem is generally contingent across a variety of domains, whereas Crocker and coworkers have focused more on contingencies within specific domains (e.g., physical appearance). Contingent self-esteem is a potentially important moderator for body image perceptions and misperceptions. Previous research has shown that appearance-related social comparisons are more distressing for women with low levels of perceived attractiveness and who generally base their self-worth on contingencies (Patrick, Neighbors, & Knee, in press). Related research has shown that individuals who base their self-worth more specifically on weight and shape have lower global self-esteem and body esteem and are at greater risk for eating disorders (Geller, Johnston, & Madsen, 1997; Geller, Johnston, Madsen, Goldner, Remic, & Birmingham, 1998).

Contingent self-esteem at both levels of generality (global and appearance specific) is potentially impor-

tant in two ways. First, basing self-worth on contingencies may affect perceptions of what others find attractive. We suggest that individuals who base their self-worth on contingencies are likely to be more aware of and pay more attention to cultural projections of attractiveness (e.g., media depictions) and potentially more likely to focus on thinness as an indicator of attractiveness. Second, the consequences of misperceptions are likely to be greater for those who base their self-worth on contingencies. For example, exaggeration of thinness as an indicator of attractiveness is likely to be especially problematic for individuals who base their self-worth largely on their appearance or on other people's expectations. Consequences of basing self-worth on contingencies will be evident primarily when contingencies are not fulfilled. Esteem-related standards that are unrealistically based on misperceptions will likely result in adverse psychological consequences and may promote unhealthy behaviors aimed at satisfying the unrealistic standards.

The present research

There were several hypotheses investigated in this study. First, consistent with previous research it was hypothesized that women would exaggerate men's preference for thin women, whereas men would hold more accurate perceptions of what women believe is an attractive body shape for men. Second, it was hypothesized that individuals holding inaccurate perceptions of what others find attractive would experience more negative body and eating related attitudes and behaviors. Finally, it was hypothesized that individuals who misperceive what the opposite sex finds attractive and who also base their self-worth on appearance would experience more negative body and eating related attitudes and behaviors than those who misperceive what the opposite sex finds attractive but do not base their self-worth on appearance.

Method

Participants

Two hundred and ninety undergraduate students (124 men, 166 women) from a medium-sized mid-western university served as participants. Participants

were recruited via sign-up sheets available to all students enrolled in psychology courses allowing extra credit for research participation. Demographic information indicated that 90.7% of participants were Caucasian and 3.1% were Native American. The remaining 6.2% consisted of various other ethnicities. The average body mass index was 23.33 ($SD = 4.58$) for women and 25.02 ($SD = 4.31$) for men. Twenty women (12.05%) reported receiving prior treatment for eating disorders. Only two men (1.64%) reported such treatment. The average age was 19.89 years ($SD = 2.57$).

Procedure

Because of the nature of the information obtained in this study, and to eliminate any contamination due to the presence of members of the opposite sex, all data were collected during either female-only or male-only sessions. Upon arrival, participants were informed of the basic nature of the study. After providing informed consent, participants filled out a questionnaire packet. Following completion of the questionnaires, participants' questions were answered and they were thanked and dismissed.

Measures

Body image

The Body Rating Scale (BRS) (Stunkard, Sorenson, & Schulzinger, 1983) is a widely used pictorial scale measuring perceptions of body shape, image, and size. The scale contains nine male and female figures ranging in size from extremely thin to extremely large, with values ranging from 10 to 90 in increments of 10. Three questions were of primary interest: "Which drawing looks most like your own figure?"; "Which figure do you think most men (women) find most attractive?" and "Which figure do you find most attractive?" Participants circle the figure that best represents their response to each question. The psychometric properties of the BRS are well-established (see Stunkard et al., 1983).

Attitudes

Dieting and eating related attitudes were assessed using the Eating Attitudes Test (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982). The EAT-26 con-

sists of 26 items and a 6-point response scale ranging from "never" to "always". Sample items include "Aware of the caloric content of foods I eat." and "Give too much time and thought to food." Previous research (see Garner et al., 1982) has demonstrated that the EAT-26 is a reliable and valid instrument assessing attitudes and beliefs associated with eating disorders. In this sample, internal reliability (Cronbach's α) was 0.89.

Behavior

Eating disorder symptomatology was assessed using the Eating Screen (Stice, Telch, & Rizvi, 2000). The Eating Screen assesses various food and weight related attitudes, beliefs, and behaviors. Sample items include "How many times per week on average over the past 3 months have you made yourself vomit to prevent weight gain or counteract the effects of eating?" and "Over the past 3 months have you felt fat?". The scale contains items that assess vomiting, laxative/diuretic use, fasting, and excessive exercise. In this study, we were primarily interested in responses to these four items. Internal reliabilities among the four behavioral items were 0.67 in this sample.

Appearance contingent self-esteem

Appearance contingent self-esteem was assessed by the Contingencies of Self-Worth Scale (CSWS; Crocker, Luhtanen, Cooper, & Bouvrette, 2003). The CSWS is a 35-item scale that assesses level of contingent self-esteem. The appearance subscale contains five items. A 7-point format (1: strongly disagree; 7: strongly agree) is used where possible scores on the subscale range from 5 to 35. Higher scores indicate one's self-worth or self-esteem is more dependent upon appearance contingencies. An example item is "When I think I look attractive, I feel good about myself." For the appearance subscale in this sample, internal reliability (Cronbach's α) was 0.79.

Results

Misperceptions of opposite sex preference for thinness

First, consistent with previous research we sought to demonstrate that perceptions of what the opposite sex finds attractive differ from what the opposite sex actu-

Table 1
Means and standard deviations (in parentheses) for major variables among men and women

Variable	Men	Women
Perceptions of own image	42.9 (1.25)	41.87 (1.17)
Perceptions of what opposite sex finds attractive	40.32 (9.19)	25.60 (8.97)
What people actually find attractive in opposite sex	31.85 (6.91)	39.76 (7.22)
Self-worth contingent on appearance	4.87 (0.94)	5.46 (1.01)
Eating attitudes	4.12 (4.00)	12.60 (11.04)
Eating disorder behaviors	0.27 (0.80)	1.28 (1.88)

ally finds attractive. We conducted independent samples *t*-tests to determine whether men and women do in fact exhibit these perceptual discrepancies. Results revealed that women overestimated the extent to which men prefer thin women. On average, women thought that men preferred women to be thinner ($M = 25.60$, $SD = 8.97$) than men actually reported finding attractive ($M = 31.85$, $SD = 6.91$), $t(288) = -6.7$, $p < 0.0001$ (see Table 1 for all *t*-test means). In contrast, men appeared to have more accurate perceptions of what women find attractive. There was no difference in what men thought women found most attractive in men ($M = 40.32$, $SD = 9.19$), and what women actually reported finding most attractive ($M = 39.76$, $SD = 7.22$), $t(227) = -0.57$, $p = ns$.

Consequences of misperceiving opposite sex preferences

To investigate the consequences associated with women's misperceptions of what men find attractive we created a discrepancy variable subtracting each female participant's estimate of what men find attractive from the mean value for what men actually reported finding attractive. Correlation analyses revealed that the more women overestimated men's preference for thinness the more unhealthy eating attitudes they reported, $r(166) = 0.23$, $p < 0.01$, and the more disordered eating behaviors they engaged in, $r(166) = 0.23$, $p < 0.01$.

A similar discrepancy score was computed for men, subtracting each male participant's estimate of what women find attractive from the mean value for what women actually reported finding attractive. However,

in this case, we computed an absolute discrepancy, given that men may overestimate the extent to which women want larger men as often or more often, than overestimating the extent to which women prefer thinner men (Jacobi & Cash, 1994). Correlation analyses revealed no significant relationship between men's absolute misperceptions of women's preferences and unhealthy eating attitudes they reported, $r(124) = 0.10$, $p = ns$ or disordered eating behaviors, $r(124) = 0.02$, $p = ns$.

Consequences of contingent self-worth and misperception among women

Finally, we were interested in whether the relationship between misperceiving opposite sex preferences and unhealthy eating attitudes and behaviors was moderated by basing self-worth on appearance. We examined eating attitudes and disordered eating behaviors separately using hierarchical multiple regression. All regression results are presented in Table 2. At step one of the first regression we examined eating attitudes as a function of the discrepancy variable representing overestimation of men's preference for thinness and appearance contingent self-worth. The product term was added at step two to evaluate the interaction. Both misperceptions and appearance contingent self-worth were uniquely associated with more negative eating attitudes. The interaction was also significant. Fig. 1 provides a graph of the interaction based on predicted values derived from the regression equation where high and low represent one standard deviation above and below the mean, respectively (Aiken & West, 1991). Consistent with expectations, overestimating men's preference for thinness was more strongly associated with negative eating attitudes among women who based their self-worth more heavily on appearance.

We followed the same procedure in evaluating disordered eating behaviors. Eating behaviors were examined as a function of the discrepancy variable representing overestimation of men's preference for thinness and appearance contingent self-worth at step one. The product term was added at step two to evaluate the interaction. Both misperception and appearance contingent self-worth were again both uniquely associated with more disordered eating behaviors. However, the interaction was not significant.

Table 2

Attitudes and disordered eating behaviors as a function of misperceiving opposite sex preferences and appearance-related contingent self-worth among women and men

Criterion	Predictor	<i>B</i>	S.E.	β
Women (<i>n</i> = 166)				
Eating attitudes				
Step 1 ($R^2 = 0.23$)	Opposite sex misperception (OSM)	2.16	0.85	0.18 [*]
	Appearance contingent self-worth (ACSW)	4.66	0.76	0.43 ^{***}
Step 2 ($R^2 = 0.26$)	OSM \times ACSW	1.66	0.71	0.72 [*]
Eating behaviors				
Step 1 ($R^2 = 0.15$)	Opposite sex misperception (OSM)	0.37	0.15	0.18 [*]
	Appearance contingent self-worth (ACSW)	0.58	0.13	0.32 ^{***}
Step 2 ($R^2 = 0.16$)	OSM \times ACSW	0.18	0.12	0.46
Men (<i>n</i> = 124)				
Eating attitudes				
Step 1 ($R^2 = 0.08$)	Opposite sex misperception (OSM)	0.56	0.50	0.10
	Appearance contingent self-worth (ACSW)	1.08	0.34	0.25 ^{**}
Step 2 ($R^2 = 0.08$)	OSM \times ACSW	-0.24	0.58	-0.21
Eating behaviors				
Step 1 ($R^2 = 0.04$)	Opposite sex misperception (OSM)	0.02	0.10	0.02
	Appearance contingent self-worth (ACSW)	0.17	0.08	0.20 [*]
Step 2 ($R^2 = 0.04$)	OSM \times ACSW	0.00	0.12	0.02

^{*} $p < 0.05$.

^{**} $p < 0.01$.

^{***} $p < 0.001$.

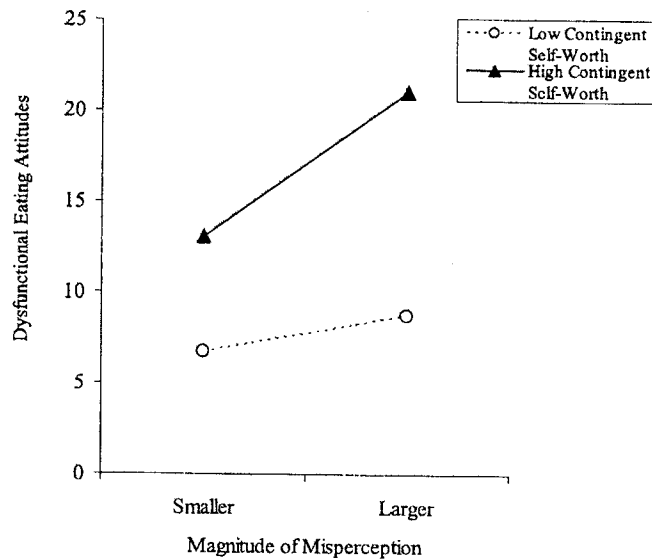


Fig. 1. Influence of appearance based contingent self-esteem and misperceptions on dysfunctional eating attitudes among women.

Consequences of contingent self-worth and misperception among men

In examining eating attitudes as a function of misperceiving women's preferences and appearance contingent self-worth among men, we again used hierarchical multiple regression. In this case, the misperception was the absolute difference between what men thought most women found attractive versus what women actually reported finding attractive. Results were consistent across attitudes and behaviors revealing only main effects for appearance contingent self-worth. Thus, among men, unhealthy eating attitudes and behaviors were associated only with basing self-worth on appearance.

Discussion

The present research demonstrated that perceptions of what the opposite sex finds attractive differ from what the opposite sex actually finds attractive. However, this misperception was present only among women. That is, women think that men want women to be thinner than men actually want, whereas men appear to have more accurate perceptions of what women find attractive. This research replicates previous findings by Fallon and Rozin (1985), Rozin and Fallon (1988), and Lamb et al. (1993) showing that women misperceive what opposite sex others find attractive, but men do not. More importantly, this research goes one step further and adds to the current literature by demonstrating that misperceptions of what opposite sex others find attractive are associated with dysfunctional eating attitudes and behaviors, and this is especially true for those whose self-worth is based more heavily on appearance-related contingencies.

These results suggest that women may strive to be thin more so because they believe men (and society in general) find very thin women attractive. Upon examination of college women's motivations for dieting, it has been shown that dieters have more distorted perceptions of their fatness (Gruber, Pope, Lalonde, & Hudson, 2001), suggesting that obtaining a desirable appearance is one dieting motivation among college aged women. Because early adulthood is a time when individuals begin seriously considering potential mates, it is less likely that women strive to be thin

for the sake of merely looking like other thin women. Rather, women of this age group strive to be thin in order to appear attractive to potential mates. Consistent with this perspective, the present research shows that women who misperceive what men find attractive appear to be more at risk of developing dysfunctional eating attitudes and behaviors than women who do not misperceive male preferences of attractiveness.

Implications

These findings show that women misperceive what men find attractive, but men do not. Why does this perception differ among men and women? One possibility is that the media's depiction of extremely thin, attractive women influences women's perceptions of what men find attractive. Self-schema theory predicts that viewing media images containing thin women should alter women's perceptions of what is considered to be the ideal female image (see Markus, 1977; Myers & Bioca, 1992). We would take this idea one step further, however, by hypothesizing that the media do alter perceptions of the ideal female body image, but also that women come to believe this thinner ideal is actually what men find attractive or desirable.

Although men can also be adversely affected by media images (Grogan, Williams, & Conner, 1996), media standards for male attractiveness and thinness differ from those of women. It has been shown that women depicted in the media are perceived to be thinner than men depicted in the media, and that the women being *currently* depicted in the media are thinner than women depicted during previous decades or generations (Silverstein, Peterson, & Purduc, 1986). As a result, we believe that male perceptions of what women find attractive may not differ from reality as much as women's perceptions of what men find attractive, and therefore, changes in perceptions of what opposite sex others find attractive as a result of viewing ideal media images may explain why women display these misperceptions and men do not. This is an important area for further study.

These results show that among individuals who misperceive what the opposite sex finds attractive, those who base their self-worth on appearance possess more harmful attitudes that are related to eating disorders, but not behaviors. Analyses of the main effects on behavior indicate that people whose self-worth is

contingent on physical appearance do exhibit more behaviors consistent with eating disorders. Taken together, this suggests that identifying appearance-related contingencies of self-worth among college students can be one way to discriminate between those who may exhibit behaviors and attitudes consistent with eating disorders from those who do not. Not only can the identification of self-esteem contingencies be important for possible prevention efforts, but changing contingencies of self-worth could be one component of an effective intervention for body image disturbance. Future research should address these possibilities.

Limitations

Sample representation is a limitation in the present research. The sample consisted of students from a single university with little ethnic diversity. Because standards of attractiveness are known to differ by ethnicity (e.g., Harris, Walters, & Waschull, 1991), it is unclear how the present results might vary in a more ethnically diverse sample. Furthermore, participants were recruited from undergraduate psychology classes, limiting our ability to infer beyond this population. An additional limitation is that behavioral measures were based on retrospective self-report. We attempted to minimize social desirability by assuring participants that all responses were completely anonymous. Finally, the data in this study were cross-sectional, limiting our ability to make causal inferences.

Future directions

This research suggests that interventions aimed at correcting women's misperceptions of what men find attractive are worthy of further investigation. Because women's misperceptions of what men find attractive were associated with greater negative eating and body related attitudes and disordered eating behaviors, correcting these misperceptions may be one way to help prevent the onset of eating disorders among college women. Much research has investigated the effects of correcting normative misperceptions concerning the frequency of binge drinking among college students, and results show that correcting these misperceptions can be an effective way to reduce binge drinking among college students (Neighbors et al., in press).

A similar approach may be implemented for body image misperceptions among college women, and if successful, could be an efficient and cost effective way to reduce behaviors and attitudes known to be related to the development of eating disorders.

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