

## Sex Differences in the Preferences for Specific Female Body Shapes

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*The purpose of this study was to examine the somatic preferences of males and females for detailed anatomical drawings of female stimulus figures to examine their ability to predict the preferences for members of the opposite sex. The figures were systematically varied on three dimensions (bust, waist, and hips), with three sizes of each (small, medium, and large). The 12 figures were rated by 100 male and female subjects on a 7-point bipolar construct scale, ranging from extremely attractive to extremely unattractive. This was done both for the subjects' personal perceptions and for their predicted ratings of the opposite sex. Multivariate and univariate analyses yielded several results, rating-perceptive (self vs. other), figure shape differences and interactions. Male subjects displayed a preference for large busts and hourglass shapes, which are accurately predicted by the females. Males predicted that females would rate slimmer figure highly, and females predicted that males would rate larger figures highly. The results are considered in light of related research in this area.*

Over the course of the last 30 years, a plethora of research on the subject of female body image has emerged. This apparent interest probably reflects growing awareness of the problems of eating disorders (anorexia nervosa and bulimia nervosa), the increased prevalence of which has generated much concern among medical and psychological researchers alike (Striegel Moort, Silverstein, & Rodin, 1986). The principal overt manifestation of these disorders is a fastidious preoccupation with one's body image (Scott, 1988), but this

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problem is common to both clinical and non-clinical populations alike (Furnham & Kramers, 1989; Garner et al., 1976; Stunkard, 1977; Fallon & Rozin, 1985; Tucker, 1985).

Although not an exclusively female phenomenon, eating and body-image disturbance problems do seem to predominate among adolescent females, those most vulnerable or sensitive to societal standards (Roskind-Lodahl, 1976; Garner et al., 1976). Females have been shown to be more sensitive and to attach more psychological significance to body image than males (Lerner & Gellert, 1969; Worsley, 1981a,b; Harris & Smith, 1982). The pursuit and preservation of beauty, and/or the enhancement of ones' attractiveness, has been viewed as central to the female sex role stereotype. However, each culture and race group has served to place specific demands and requirements upon what is deemed to be "attractive" (Garner & Garfinkel, 1979; Furnham & Alibhai, 1983).

Over a 50-year period in advanced Western democracies there have been dramatic changes in what body image is considered to be most attractive. Studies of the Western culture in particular have identified and quantified a significant shift in trend from the fuller, curvaceous "hourglass" shape toward a substantially thinner standard of female body shape (Garner et al., 1980). Boskind-Lodahl (1976) discusses the present cultural stereotype of femininity and attractiveness. The biological and physical repercussions of this are well documented in the literature on eating disorders (Scott, 1988). As a consequence of this obsession with body *weight* and *shape*, females have repeatedly been found to distort estimations of their own body size (Gray, 1977; Fonagy & Benster, 1989). Indeed this perceptual disturbance is an integral feature of anorexia nervosa sufferers in particular (Garner & Garfinkel, 1979).

However, more recently, the focus of attention has shifted from an examination of clinical populations of anorexics and bulimics, to a more generalized investigation of the "general public" and its acceptance of, and adherence to, these standards and demands on body image. Obesity and "being overweight" per se carry an inherent stigma, and are associated with feelings of isolation, depression, dissatisfaction, failure, and unattractiveness (Worsley, 1981a,b; Cash & Green, 1986). Females seem not only to internalize and accept this stigmatization as regards themselves (Laslett & Warren, 1975), but also to have oriented their perception and evaluation of others along the same continuum of obesity-thinness. Worsley (1981b) found that females will consistently evaluate a fat young woman more negatively and as a more deviant figure across a broad spectrum of attributes than men will, including specific desirable personality traits ostensibly independent of body shape (Staffieri, 1972; Brenner & Hinsdale, 1978; Branch & Eurman, 1980; Worsley, 1981a,b; Stager & Burke, 1982; Harris, harris, & Bochner, 1982; Furnham & Alibhai, 1983).

Contemporary research has attempted to provide some justification for the use of body *shape* (rather than weight per se) as a determinant of character and personality. Gitter, Lomronz, Saxe, & Bar-Tal (1983), suggest that the physical obviousness of body shape provides not necessarily totally unreasonable grounds upon which to base personality judgments, as it is to some extent a reflection of the psychological makeup of that person. The ubiquity of dieting and exercise indicates the importance of determining how appearance affects judgments and how people control the impressions others make of them. Furthermore, it has been emphasized that personal appearance, in conjunction with sexual identity, is the personal characteristic most accessible to others in social interaction. Consequently "folk psychology" has promoted a multitude of theories ostensibly permitting the forecast of an individual's personality from the knowledge of his/her external appearance, following a "what is beautiful is good" paradigm (Dion, Berscheid, & Walster, 1972).

However, it has been assumed that there is homogeneity and universality among individuals in their perceptions of appearance and preference for shape regardless of sex. A study by Calden, Lundy, & Schlater (1959) and other more recent research has demonstrated that females, whose body shape does not comply with current ideals, are highly likely to express dissatisfaction with their body weight (Davies & Furnham, 1986). Calden et al. (1959) found that all of the females in their sample who expressed some dissatisfaction with their weight, wished to lose rather than gain weight. Dissatisfaction with one's body image is not attributable solely to obesity; if an individual's phylogenetic makeup and intrinsic bone structure does not comply with societal standards then this too can be a source of distress. That is although weight and shape are confounded, it appears to be shape that is the cause of most concern and distress. In general, females seem to desire changes from the waist down, and petiteness of all body parts, with the exception of the bust, (Calden et al., 1959).

The particular issue of sex differences in desirable body shape has generated considerable interest in recent years (Wildman, Wildman, Brown, & Trice, 1976; Gray, 1977; Fallon & Rozin, 1985; Fonagy & Benster, 1990). The sex bias evident in anorexia nervosa and obesity (Garfinkel & Garner, 1982; Garner et al., 1980) can be particularly accounted for by culture-bound attitudes toward body shape (Worsley, 1981a,b; Furnham & Alibhai, 1983). However, even among culturally homogeneous samples, sex differences are found. Furnham and Radley (1989) addressed this problem directly by presenting subjects with 24 figure drawings—12 male and 12 female—systematically scaled from anorexically thin to extremely obese. However, interrater agreement across both sexes was only found in the most extreme cases of anorexic and grossly obese figures, with predictable preferences for middle-ranging figures.

Fallon and Rozin (1985) investigated dissatisfaction with subjects' current body weight, and distortions in predicting the shape and weight preferences of members of the opposite sex. It was found that some incongruity existed between the subjective ratings of each sex and their presumed preferences as ascribed by the opposite sex, with women presuming men preferred thinner, slimmer figures, and men presuming women liked heavier, more rounded figures than either actually did. From this, they conclude that men's perceptions serve to keep them satisfied with their figures, whereas women's perceptions perpetuate the pressure to lose weight.

There is an apparent dearth of research using only "average" figures (in terms of shape and weight), which is where most discrepancy in the subjective ratings lies. This study proposed to investigate the area of "normal figures" in an attempt to quantify and qualify the specific somatic preferences of males and females, using systematically manipulated anatomical drawings of a female body. Three factors were targeted; bust size, waist size and hip size, and three measurements of each were used (small, medium, and large). The use of detailed anatomical drawings was an attempt to eliminate methodical biases inherent in some of the alternative techniques of looking at body image (Furnham & Radley, 1989). Although some of these features like bust size have been considered before (Kleinke & Stareski, 1980), these three features have rarely been simultaneously, systematically varied.

In order to minimize the artifactual nature of such drawings, some measure of consistency was attempted, such that figures with larger hips have proportionately larger thighs than figures with slimmer hips. Out of the 27 possible combinations of the 3 (large, medium, small) by 3 by 3 factor paradigm, 12 figures were selected that correlate with the specific hypotheses of the experiment. The most general hypothesis was that a sex difference will be apparent, between males' and females' ratings of the 12 figures, and also in their predictions of the opposites sex's perceptions of attractiveness. More specifically, it was predicted that male subjects will indicate a preference for figures with large bust and/or hourglass figures; (Kleinke & Staneski, 1980; Gitter et al., 1983; Furnham & Radley, 1989). Conversely, it was hypothesized that females will rate slimmer figures more highly than males.

### *Subjects*

A total of 100 subjects, 50 male and 50 female, took part in this experiment. The age range for the females was 18–44, mean 21.7 (SD 2.43), and for males the range was 19–50, mean 23.2, (SD 1.94). Most subjects were students in full-time courses.

*Apparatus*

Twelve acetate slides were drawn up, each one bearing the naked, full-frontal of a female. It was assumed that medium shape has vital statistics roughly aligned with 36'' bust, 26'' waist, and 36'' hips.

Some measure of compatibility has been attempted between hip and thigh size. Subjects (5 in all) in a pilot study were able to accurately distinguish and discriminate between each of the 3 measurements (small, medium, large) for each of the variables (bust, waist, hips).

Size	Bust:	Small (32'')	Medium (36'')	Large (39'')
	Waist:	Small (23'')	Medium (26'')	Large (29'')
	Hips:	Small (33'')	Medium (36'')	Large (39'')

Such pictures have been used in previous research, and have been proved to be both salient and discriminating (Harris et al., 1982; Furnham & Alibhai, 1983; Furnham & Radley, 1989).

All subjects were given a booklet with three sheets, the first of these requested simple demographic details (sex, age, height) and a subjective rat-

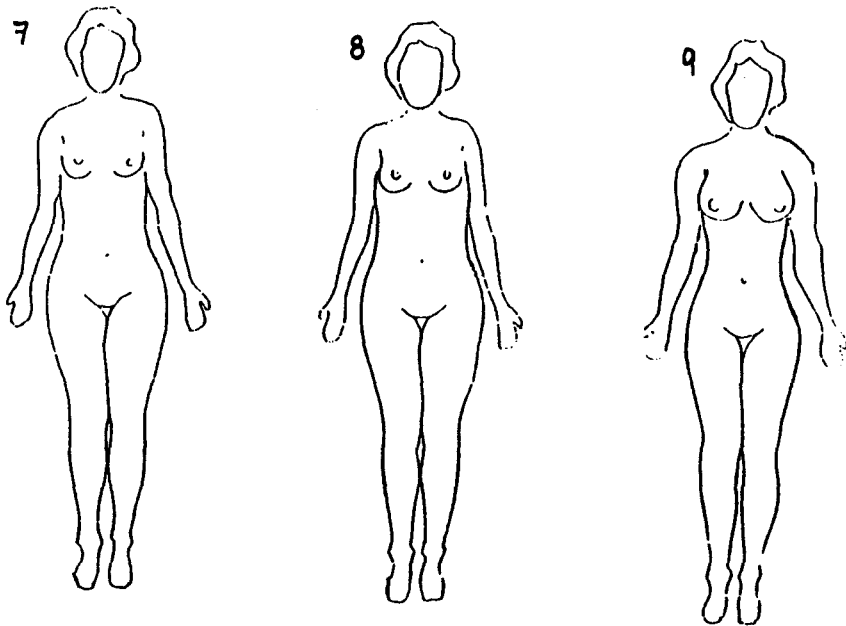


Fig. 1. Examples of the drawings shown to subjects.

ing of their body weight (overweight, underweight, or average). The second and third sheets were for the purpose of rating each of the pictures on the 7-point bipolar construct of attractive-unattractive. Each of the 12 figures, randomly presented was rated on this 7 point scale.

### *Procedure*

Subjects were tested in two large groups settings. Although the direction on the questionnaire were intended to make the experimental procedure self-explanatory, the experimenter was present throughout in order to clarify any informal queries, and to operate the projector. Subjects were requested not to cross-refer their ratings with those of other subjects, and similarly, to avoid discussion of the stimuli. In this way, every effort was sustained in order to avoid social contagion effects inherent with such a close proximity group setting.

After brief informal directions from the experimenter, subjects completed the initial page of the booklet. The 12 stimulus figures were then presented in a randomized order, one by one, on the overhead projector, with a brief interval between each, during which time subjects recorded their personal rating on the attractiveness of that picture. They were rated on a 7-point scale, where 1 represented most unattractive and 7 most attractive. Subsequently, subjects rated the 12 stimuli once more, this time presented in a different order; however, on this occasion they were now asked to rate the pictures "as if they were a member of the opposite sex." *Self-rating* thus refers to the subjects' own rating of the stimulus figures while *other-rating* refers to their metaperceptions of how members of the opposite sex would rate the figures.

## RESULTS

Table I shows the mean scores (and standard deviations) evaluated by both sexes of the attractiveness of the female figures, on a rating scale of 1-7. Overall men seemed to have higher scores generally than women, which may be an indication of their respective attitude to the task. A single one-way analysis of variance (ANOVA) was first computed between the male and female subjects to assess gender differences, and look at detailed reactions to each figure.

Five of the self-rated figures (4 with large busts) revealed significant differences between male and female evaluations of attractiveness at the usually acceptable .05 alpha level (Figure 4: large bust, small waist, small hips;

Table 1. Means, SDs, and *F* Levels for the Self- and Other Perceptions of the 12 Figures<sup>a</sup>

Figure	Males		Females		<i>F</i>		
	<i>X</i> (rank)	<i>SD</i>	<i>X</i> (rank)	<i>SD</i>			
Self-rating							
1 LLL	4.06	(8)	0.98	4.30	(3)	1.01	1.45
2 MMM	4.50	(2)	0.84	4.14	(7)	1.21	2.98
3 SSS	4.08	(7)	1.01	3.72	(6)	1.38	2.21
4 LSS	4.16	(6)	1.17	3.62	(7)	1.29	4.81 <sup>d</sup>
5 MSS	4.18	(5)	1.12	2.58	(8)	1.17	6.81 <sup>c</sup>
6 LMS	3.52	(10)	0.97	2.98	(11)	0.98	7.64 <sup>c</sup>
7 SML	2.82	(11)	1.12	3.20	(10)	1.23	2.61
8 SLL	2.48	(12)	1.13	2.56	(12)	1.28	0.11
9 LSL	4.82	(1)	1.02	4.30	(2)	1.23	5.26 <sup>d</sup>
10 LMM	4.26	(4)	0.96	3.88	(5)	0.92	4.07 <sup>d</sup>
11 MSL	4.34	(3)	1.10	4.70	(1)	0.89	3.25
12 SMM	3.82	(9)	1.08	3.52	(9)	0.97	2.12
Other rating							
1 LLL	2.94		1.35	3.66		1.61	5.88 <sup>d</sup>
2 MMM	4.00		1.07	4.08		1.08	0.14
3 SSS	4.86		0.93	4.20		1.44	7.41 <sup>c</sup>
4 LSS	4.44		1.18	5.32		1.11	14.68 <sup>b</sup>
5 MSS	4.42		1.09	4.59		1.22	0.12
6 LMS	3.46		1.34	3.58		1.20	2.22
7 SML	2.90		1.18	3.38		1.12	4.33 <sup>d</sup>
8 SLL	2.76		1.15	2.54		1.24	0.84
9 LSL	4.72		1.26	5.52		1.22	10.41 <sup>c</sup>
10 LMM	4.70		1.20	4.52		0.99	3.63
11 MSL	4.52		1.11	5.04		0.92	6.47 <sup>d</sup>
12 SMM	3.94		0.84	3.92		1.24	0.01

<sup>a</sup>L: large, M: medium, S: small—i.e., LSS: large bust, small waist, small hips;

MSL: medium bust, small waist, large hips.

<sup>b</sup>*p* < 0.001.

<sup>c</sup>*p* < 0.01.

<sup>d</sup>*p* < 0.05.

Figure 5: medium bust, small waist, small hips; Figure 6: large bust, medium waist, small hips; Figure 9: Large bust, small waist, large hips; and Figure 11: large bust, medium waist, medium hips). Four out of the 5 self-rated figures that reached significance shared a common physical denominator: a large bust [Figure 4:  $F(1, 99) = 4.81, p < .05$ ; Figure 6:  $F(1, 99) = 7.64, p < .01$ ; Figure 9:  $F(1, 99) = 5.26, p < 0.05$ ; Figure 10:  $F(1, 99) = 4.07, p < 0.095$ ]. However this large number of ANOVA comparisons means that there is an increasing likelihood that  $p < .05$  could be obtained by chance. At the more conservative  $p < .01$  level only two of the 12 ANOVAs showed significance.

These results tentatively support the hypothesis that males would show a preference for large bust; males rated a large bust higher than females rated a large bust, but both sexes rated a medium bust as most attractive.

The hypothesis that females would rate slimmer bodies as more attractive was, however, not sustained [i.e., no significant sex differences on Figure 3 or Figure 12 (both with small bust and waist) if anything the opposite trend seemed apparent). Males preferred the hourglass (LSL) figures to females, as predicted,  $F(1, 98) = 5.26, p < .05$ .

While five self-ratings yielded significant differences, six "other" ratings showed statistically significant effects. Male and female ratings for Figure 3 (small bust, waist and hips) were significantly different [ $F(1, 99) = 7.41, p \leq 0.1$ ]. Males predicted that females would rate this, the slimmest figure as more attractive than women thought men would find the figure. Whereas females predicted that males would rate Figure 1 (large bust, waist and hips) [ $F(1, 99) = 5.88, p < 0.05$ ], largest on all dimensions, as attractive. This finding reverses the hypothesis that females expect males to prefer slim figures, and males expect females to prefer heavier figures.

Figures 9 (large bust, small waist, large hips) and 11 (medium bust, small waist, large hips) elicited significantly different ratings from the two sexes:  $F(1, 99) = 10.41, p < 0.01$  and  $F(1, 99) = 6.47, p < 0.05$ , respectively. Females predicted that males would rate the hourglass shape more highly than males predicted females would rate this figure. Females are correct in this assumption: the results are concurrent with the notion that males will evaluate an hourglass figure more positively than females. The figure that yielded the highest level of significant difference between the sexes was Figure 4 [large bust, small waist, small hips;  $F(1, 99) = 14.68, p < 0.001$ ], suggesting that females expect male preference to be for large busts. This supports the fundamental hypothesis that males prefer figures with a large bust.

This analysis was followed by a series of mixed design two-way ANOVAs (Male/Female  $\times$  Self/Other) to test the metaperceptive aspect of this experiment. Five of the 12 figures yielded significant interactions: Figure 4 ( $F = 21.80, p < .001$ ), Figure 5 ( $F = 5.70, p < .001$ ), and Figure 6 ( $F = 8.68, p < .001$ )—all with larger busts than hips, which showed that although females rated these figures less attractive than males they believed males would rate them more highly than they actually did. Figure 9 ( $F = 25.86, p < .001$ ) and 10 ( $F = 8.42, p < .01$ ) also yielded significant interactions for the same reason: females rated these lower than males but believed males would rate them more highly than they actually did. None of the other interactions reached significance.

In order to assess the ability of the sexes to accurately predict the ratings of the opposite sex, Pearson product moment correlations were computed on the rating scores for male (self) with female (other) and female (self) with male (other). The females proved to be highly adept at predicting male ratings: ( $r = 0.84, p < 0.01$ ). In fact, the interrater agreement was best in cases of the stimulus figures with either all three dimensions (bust, waist, hips) being small or all three large (Figures 1 and 3).



Finally, a three-way mixed ANOVA (Sex  $\times$  Perspective  $\times$  Figure) was computed on the rating scores with sex and perspective as between-subject variables and figure as a within-subject variable. There was no main effect of sex, but there were significant interactions between perspective and sex [ $F(1, 98) = 15.45, p \leq 0.001$ ], indicating major differences in the way males expected females to rate bodies and vice versa, and figure and sex [ $F(11, 1078) = 3.64, p \leq 0.001$ ]. A Gender  $\times$  Perspective multivariate analysis of variance across the repeated measures of "figure shapes" confirmed this with a significant perspective effect. Thus the results indicate that there is a significant sex difference in males' and females' perceptions of attractiveness.

## DISCUSSION

The purpose of this study was to examine sex differences in the specific somatic preferences and metaperceptions of females body shape. Previous research in this area had focused on extremes of body shape (Furnham & Alibhai, 1983; Fallon & Rozin, 1985; Furnham & Radley, 1989). Detailed anatomical figure drawings were employed in this investigation as they have been found to be both salient and discriminating (Brenner & Hinsdale, 1978; Gitter et al., 1982; Furnham & Radley, 1989). Accurate lifelike figure drawings also overcome many of the methodological problems inherent with alternative techniques such as descriptive vignettes (Kleinke & Staneski, 1980; Harris et al., 1982) or photographs (Lerner & Gellert, 1969).

Contrary to previous research findings, that females are more "generous" in their ratings of both male and female figures than males (Furnham & Radley, 1989), it was observed that males predominantly perceived all the figures as more attractive than females did in that they had a higher mean score. A plausible explanation for this response would be that females experience difficulty, or are reluctant, to rate another female body as "attractive"; yet in order to substantiate this hypothesis, equivalent male figures would have to be incorporated into the experiment to ascertain whether male subjects incur comparable dissonance. The idea that women are "envious" about attributing attractiveness to other women seems gratuitous in the face of their accuracy in predicting men's reactions and the simple reality that female figures may be more attractive to men than women. An alternative hypothesis is that although both males and females are socialized by the media to be critical of female bodies (Davies & Furnham 1986), males inherently possesses an increased latitude of acceptability with regard to ratings of attractiveness and favorability (Furnham & Radley, 1989). The sex bias was reversed when subjects were predicting the perceptions of the opposite sex: females in general predicted that males would find the figures more attractive. This forecast was congruent with males' self-ratings, vindicating the sug-

gestion that females are more highly adept at anticipating male responses to the figure drawings.

When evaluating the figure subjectively (self-rating), male subjects confirmed previous research findings by rating figures with large and medium busts as more attractive than figures with small busts (Calden et al., 1959; Kleinke & Stankesi, 1980; Gitter et al., 1982; Fallon & Razin, 1985). It should be pointed out, however, that these differences occurred at the more marginal  $p < .05$  level, and given the number of comparisons made, the results at the more conservative  $p < .01$  showed far fewer differences. Post hoc Newman-Keuls analysis reveals that males liked large and medium busts, small waists, and small and medium hips. This positive bias toward a large bust is ostensibly independent of waist and hip size, suggesting that males selectively attend to, and place increased subjective significance upon, bust size. It was not apparent from the research which of the examined dimensions was most salient to females; but bust and waist showed more differences between small and large figures. Gitter et al. (1982) highlighted an additional male preference, confirmed in this research, for an hourglass figure, the ultimate stereotype of femininity (Wiggins, Wiggins, & Conger, 1968). Sociobiological explanations would support this observation: males would like large hips in females (to facilitate childbirth); small waists (to signify she is not pregnant) and medium/large breasts for child feeding. However, social explanations in terms of media presentations would not require any psychological input.

Yet in this study females did not display a preference for slimmer body shapes; this contradicts both the hypothesis for this study and previous research findings (Lerner & Gellert, 1969; Worsley, 1981; Furnham & Alibhai, 1983; Fallon & Razin, 1985). This may be a function of the age of the subjects, as they are thought to be more perceptually sensitive to body image (Garner et al., 1980) and the aesthetic demands of fashion standards (Davies & Furnham, 1986) than a more developmentally mature and stable population. However, more probable explanation lies in the fact that in contrast to previous studies that used clearly obese figures, the figures in this study were not very large, being within the normal range as portrayed in medical charts (Davies & Furnham, 1986).

In the metaperception part of the study, males predicted that females would show a preference for slimmer figures, and females predicted that males would prefer larger figures: this reverses the results found by Fallon and Rozin (1985), but may also be directly attributable to the age of the subject pool. Demographic details of anorexia and bulimia sufferers support this notion that individuals' sensitivity to environmental influences, and susceptibility to fall victim to societal demands, are augmented during adolescence (Boskind-Lodahl, 1976; Striegel-Moore et al., 1986; Scott, 1988) but dimin-

ish with age. Future research comparing two developmentally parallel populations of young adults, one with a history of clinical eating disorders and one without, would quantify the extent to which perceptual biases of desirable body image in anorexics and bulimics are resistant to age and security.

The principal limitations of this research were related to the nature of the figure drawings and the population samples. The problems with the drawings were twofold: first, the systematic manipulation of the three dimensions (bust, waist, hips) yielded some body shapes that appeared fairly phylogenetically improbable, as bodies are generally balanced and proportioned. Thus, although a figure with a large bust, small waist, and small hips may be highly attractive to males, it is nevertheless a biological improbability. Second, some of the pictures were very similar, varying on only one dimension where subjects experienced difficulty differentiating between the stimuli. Nevertheless, as the means in Table I show, subjects were able to discriminate sometimes dramatically even when one dimension alone was manipulated, e.g., compare Figure 10 (large bust, medium waist, medium hips) with Figure 12 (small bust, medium waist, medium hips).

The results of the study beg further questions: Are there important metaperceptual differences between the sexes' perception and preferences? What individual difference (e.g., subjects' somatic shape) factors predict somatic troubles to establish robust findings on actual differences in perception and preference? It is hoped that this study goes some way in this direction.

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