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Brief research report

The relative contribution of profile body shape and weight to judgements of women's physical attractiveness in Britain and Malaysia

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Abstract

Ninety-six Malaysian and British men rated for physical attractiveness a set of photographs of real women in profile, with known body mass index (BMI) and waist-to-hip ratio (WHR). Results showed that BMI accounted for the greater amount of variance in all settings. There were also significant differences in preferences for body weight, with low resource, low socioeconomic status (SES) raters preferring a significantly heavier partner than high resource, high SES raters. The disparity with previous findings using line drawings of women in profile was discussed in terms of the weaknesses of line-drawn stimuli.

Keywords: Physical attractiveness; Waist-to-hip ratio; Body mass index; Cross-cultural

Introduction

For more than a decade, the literature on women's physical attractiveness has been dominated by the waist-to-hip ratio (WHR) hypothesis of attractiveness, which predicts that a low WHR will be universally attractive because of its association with optimal fertility and health (Singh, 2006). However, studies using representations of real women suggest that WHR may actually be a weak predictor of judgements of women's attractiveness (e.g., Smith, Cornelissen, & Tovée, 2007; Tovée, Hancock, Mahmoodi, Singleton, & Cornelissen, 2002), a pattern found cross-culturally (e.g., Swami, Neto, Tovée, & Furnham, in press; Swami & Tovée, 2005, 2007; Tovée, Swami, Furnham, & Mangalparsad, 2006). Moreover, in studies where an effect of the WHR is found among groups of relatively low socioeconomic status (SES), the direction of preferences has tended to be for WHRs higher than those preferred by high SES groups (e.g., Marlowe & Wetsman, 2001; Wetsman & Marlowe, 1999; Yu & Shepard, 1998).

These studies also make clear that, across disparate cultural settings, a woman's body weight (typically measured as her body mass index or BMI) plays a much more important role in judgements of attractiveness than WHR (a measure of body shape). Specifically, studies have shown that heavier female figures are judged to be more attractive than thinner figures in contexts of low SES (e.g., Swami & Tovée, 2005, 2007; Tovée et al., 2006), a finding mirrored by differences in preferences between hungry and satiated participants within a single SES context (Nelson & Morrison, 2005; Swami & Tovée, 2006; but see Swami, Tovée, & Furnham, in press).

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To explain the above discrepancy, Marlowe, Apicella, and Reed (2005) proposed that frontal images of women may not capture the contribution of the hips and buttocks to actual WHR. When they used line drawings of women in profile, they found that Hadza hunter-gatherers preferred a lower profile WHR (more protruding buttocks) than American men, which was in contrast to their preference for a higher frontal WHR (Marlowe & Wetsman, 2001). They, therefore, concluded that there was less disparity in their preferences for actual WHR, with there being a general preference for low over high WHRs in all societies.

The line drawings used in their study, however, likely covaried WHR and BMI (cf. Tovée & Cornelissen, 2001): the images of women with bigger hips and buttocks also appear to have a heavier body weight, and so it was not clear whether observers were judging the figures based on WHR or body weight. Earlier studies using line drawings (Furnham & Swami, 2007) and photographs (Tovée & Cornelissen, 2001) of women in profile have found that WHR plays a negligible role in judgements of attractiveness. This would suggest that profile WHR is of limited value in judgements of attractiveness, although its importance may increase when low SES populations are sampled (Marlowe et al., 2005). It is important, therefore, to examine the contribution of profile BMI and WHR to judgments of female attractiveness in different cultural settings, using sets of stimuli that are more accurate than line drawings.

Accordingly, the present study examined the relative contributions of WHR and BMI to judgements of women's physical attractiveness in profile across three societies in Britain and Malaysia. By using photographs of real women with known BMI and WHR, this study was able to overcome the problem of a BMI-WHR confound. In addition, because comparable data was available from Swami and Tovée (2005), we were able to make comparisons between judgements of female attractiveness in frontal and profile view. We hypothesised that BMI would be the greater predictor of female profile attractiveness than WHR, and that preferred body weight would be influenced by relative SES.

Method

Participants

Participants were recruited from Britain and Malaysia, with three groups reflecting either low (Sabah) or high SES (Kuala Lumpur and Britain). The first group consisted of 28 men sampled from two villages on the west coast of Sabah in Malaysian Borneo (age $M = 43.6$ years, $SD = 7.6$). All participants were small-holding paddy farmers who depended on the crop for their livelihood. Both villages in the area of study had a permanent supply of electricity and water, though sources of mass media were restricted to communal televisions (regulated state channels) and local newspapers.

The second group consisted of a community sample of 30 men recruited from the urban centre of Kuala Lumpur in West Malaysia (age $M = 44.3$ years, $SD = 8.4$). The urban-rural distinction made between Sabah and Kuala Lumpur is a meaningful one (see Swami & Tovée, 2005): compared with predominantly rural Sabah (GDP per capita about US$ 2,400), Kuala Lumpur has a GDP per capita of about US$ 8,000 and a low unemployment rate. As a further comparison, a community sample of 38 men were recruited from Greater London in Britain (age $M = 42.3$ years, $SD = 8.3$). Participants in this group were considered to be of high SES due to London's high per capita GDP (approximately US$ 33,700), its metropolitan nature and the ubiquity of sources of mass media.

Materials

Participants in each group rated greyscale images of 50 real women in profile, which were identical to those used in a previous study (Tovée & Cornelissen, 2001). The heads of the women were obscured so that facial attractiveness would not be a factor in ratings. In this stimulus set, 10 images of women were drawn from each of the 5 recommended BMI categories: emaciated (<15 kg/m^2), underweight (15–18.5 kg/m^2), normal (18.5–24.9 kg/m^2), overweight (25.0–29.9 kg/m^2), and obese (>30 kg/m^2) (BMI range = 11.60–41.23 kg/m^2). The women in these images also varied in WHR from 0.68 to 0.98. All images were adjusted and presented within the same border so that height would not be a consideration in participants' ratings.

The stimuli were printed on sheets of paper measuring 210 mm $\times$ 297 mm so as to facilitate replication in all locations. Participants were presented with a booklet to record their ratings, where the first page consisted of brief instructions and a worked example of a rating, and where the final page requested participants' demographic details. Other pages in the booklet instructed participants to provide ratings