

This article was downloaded by: [24.215.225.80]

On: 06 April 2012, At: 14:50

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954
Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH,
UK



The Journal of Social Psychology

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/vsoc20>

More Than Just Skin Deep? Personality Information Influences Men's Ratings of the Attractiveness of Women's Body Sizes

Viren Swami^a, Adrian Furnham^b, Tomas Chamorro-Premuzic^c, Kanwal Akbar^a, Natalie Gordon^a, Tasha Harris^a, Jo Finch^b & Martin J. Tovée^d

^a University of Westminster

^b University College London

^c Goldsmiths, University of London

^d University of Newcastle

Available online: 06 Nov 2010

To cite this article: Viren Swami, Adrian Furnham, Tomas Chamorro-Premuzic, Kanwal Akbar, Natalie Gordon, Tasha Harris, Jo Finch & Martin J. Tovée (2010): More Than Just Skin Deep? Personality Information Influences Men's Ratings of the Attractiveness of Women's Body Sizes, *The Journal of Social Psychology*, 150:6, 628-647

To link to this article: <http://dx.doi.org/10.1080/00224540903365497>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.tandfonline.com/page/terms-and-conditions>

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae, and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

More Than Just Skin Deep? Personality Information Influences Men's Ratings of the Attractiveness of Women's Body Sizes

VIREN SWAMI

University of Westminster

ADRIAN FURNHAM

University College London

TOMAS CHAMORRO-PREMUZIC

Goldsmiths, University of London

KANWAL AKBAR

NATALIE GORDON

TASHA HARRIS

University of Westminster

JO FINCH

University College London

MARTIN J. TOVÉE

University of Newcastle

ABSTRACT. This study examined the influence of personality information on perceptions of the physical attractiveness of a range of female body sizes. A sample of 2,157 male university students were randomly assigned to one of 10 groups in which they received personality information about women they were rating, or a control group in which they received no personality information. Controlling for participants' age and body mass index, results showed no significant between-group differences in the body size that participants found most attractive. However, participants provided with positive personality information perceived a wider range of body sizes as physically attractive compared with the control group, whereas participants provided with negative personality information perceived a narrower range of body sizes as attractive. Correlations showed that participants'

Address correspondence to Viren Swami, University of Westminster, Department of Psychology, 309 Regent Street, London W1B 2UW, UK; v.swami@wmin.ac.uk (e-mail).

own Extraversion was associated with their body size ratings. These results suggest that non-physical cues have an influence on the perception of physical beauty.

Keywords: big five, body size, physical attractiveness, personality

OF THE MANY APHORISMS that have found their way into proverbial folklore, perhaps none retains as much popular resonance as the notion that beauty is “but skin-deep,”—that is, the belief that human beauty is best understood at the level of physical traits. In contrast, however, a great deal of empirical research has suggested that beauty is a multi-faceted feature that should include variables of dynamic attractiveness (see Swami & Furnham, 2008). These dynamic components could encompass, for instance, an individual’s conversational skills, body language, and sense of humor (e.g., Jensen-Campbell, Graziano, & West, 1995; Li, Bailey, & Kenrick, 2002; Lundy, Tan, & Cunningham, 1998; for a review, see Swami & Furnham, 2008, Ch. 9).

The focus of this article is on one particular aspect of dynamic attractiveness, namely the influence of personality information on perceptions of physical attractiveness. Traditionally, components of personality have tended not to fall within the purview of experimental psychologists studying physical attraction, primarily because dynamic and static components of attractiveness are difficult to measure concurrently (Swami & Furnham, 2008, Ch. 9). Even so, a large body of work has documented what is now known as the ‘beauty is good’ effect (Dion, Berscheid, & Walster, 1972), where physically attractive individuals are perceived as having various positive qualities (e.g., Eagly, Ashmore, Makhijani, & Longo, 1991; Feingold, 1992; Langlois et al., 2000). These studies and meta-analyses support the suggestion that there is a reliable link between personality and physical appearance at the level of perceived attributions.

This research, however, has not fully examined the causal influence of personality information on perceptions of appearance or attractiveness. Other research has shown that certain personality dimensions, primarily extraversion and exhibition, are positively correlated with attraction ratings in initial encounters (e.g., Friedman, Riggio, & Casella, 1988; Riggio, Friedman, & DiMatteo, 1981). More recently, Kniffin and Wilson (2004) showed how the perception of physical attractiveness, based on evaluations of known individuals in high school yearbooks, was highly influenced by both familiarity and what is known about individuals in terms of their non-physical traits. In further studies, the authors showed that, in task-oriented groups, the “perception of physical attractiveness is based largely on traits that cannot be detected from physical appearance alone” (Kniffin & Wilson, 2004, p. 98).

Other studies have examined the effect of presenting personality information concurrently with stimuli of target individuals. Gross and Crofton (1977) had participants rate the physical attractiveness of targets based on a profile containing personality and physical information. They showed that both the attractiveness of

the target as well as the favorability of the personality profile had an influence on ratings of physical attractiveness. Another study employed a within-subjects design, where participants rated the attractiveness of opposite-sex facial photographs, participated in a distraction task, and then rated the same photographs again, but paired with desirable, undesirable, or no personality information (Lewandowski, Aron, & Gee, 2007). Results showed that positive personality information produced significant changes in ratings of physical attractiveness, such that targets were perceived as more desirable as friends and dating partners.

Two recent studies have utilized a similar design for examining the influence of personality information on body size perceptions. Swami, Greven, and Furnham (2007) presented participants with line-drawn stimuli that varied in body shape and weight, as well as two levels of personality information (Extraversion versus Introversion). They reported that, while there was an independent effect of each of the three variables, the variables also interacted to determine a figure's physical attractiveness. Similarly, based on ratings of the Contour Drawing Figure Rating Scale (CDFRS), Fisak, Tantleff-Dunn, and Peterson (2007) showed that participants chose a wider range of body sizes as being attractive for female figures described with a positive personality, compared with figures described with a negative personality or no personality information.

While the available evidence supports an association between personality information and the attractiveness of various body sizes, the literature is also limited in several key aspects. First, the use of line-drawn figures represent a serious compromise on ecological validity, as it seems likely that the visual cues available to observers in line-drawings are very different to those available in reality (see Bateson, Cornelissen, & Tovée, 2007). Secondly, as Lewandowski et al. (2007) have noted, many previous studies collapse ratings of attractiveness across sexes, which is not ideal for the assessment of heterosexual physical attraction.

Third, there has not been any consistency in the personality vignettes paired with stimuli: Fisak et al. (2007) and Lewandowski et al. (2007) used personality traits derived from previously compiled lists, whereas Swami et al. (2007) used polar opposites of the "Big Five" (Goldberg, 1993) personality factor of Extraversion. Both approaches are equally-valid, but the latter offers the most comprehensive framework for assessing the impact of personality information on body size perceptions. Specifically, the Big Five personality framework is a hierarchical model of personality with five bipolar traits or factors (Agreeableness, Conscientiousness, Neuroticism, Openness, and Extraversion) representing personality at a broad level of abstraction (McCrae & Costa, 1997).

The Present Study

In the present study, we used a between-subjects design to examine the influence of Big Five personality information on men's rating of the physical attractiveness of photographs of real women varying in body size from emaciated

to obese. Participants were assigned to one of 11 groups, where they completed the Photographic Figure Rating Scale (PFRS; Swami, Salem, Furnham, & Tovée, 2008a); five of the groups completed the PFRS paired with positive personality information, five with negative personality information, and a control group received no personality information. Based on previous research, we hypothesized that there would be no between-group differences in the body size perceived as most attractive, but that participants in groups with positive personality vignettes would perceive a wider range of body sizes as more attractive than either the control or negative personality-vignette groups.

Finally, despite a rich philosophical stream of thought locating aesthetic judgments in the eye of the beholder (Swami, 2007), psychological studies have only infrequently examined the influence of the observer's personality on her or his perceptions of physical attractiveness (e.g., Swami, Salem, Furnham, & Tovée, 2008b). This is a major oversight in the literature, particularly given the predictive power of the Big Five personality framework in relation to other real-world outcomes (Chamorro-Premuzic, 2007) and the growing body of research highlighting the association between body size judgments and various individual difference variables (e.g., Schmalt, 2006; Swami, Salem, et al., 2008b; Swami, Buchanan, Furnham, & Tovée, 2008; Swami, Furnham, et al., 2008; Swami, Miller, Furnham, Penke, & Tovée, 2008).

In previous work, for example, Swami, Buchanan, et al. (2008) reported that the personality factors of Openness to Experience and Agreeableness (measured using the International Personality Item Pool; Buchanan, Johnson, & Goldberg, 2005) were associated with a male preference for a heavier female body size. It has been suggested that the association between Openness and body size judgments is predicated by this personality factor's relation with the acceptance of unconventional societal norms (Swami & Tovée, 2009), whereas agreeable individuals may be more likely to positively perceive others in interpersonal interactions (Swami, Buchanan, et al., 2008). To this might be added the suggestion that Extraversion will be associated with body size judgments, to the extent that extraverts are highly engaged with the external world. To date, however, this body of research remains suggestive; as a contribution to this literature, therefore, we sought to replicate previous work examining the potential impact of the observers' Big Five personality scores on body size perceptions.

Method

Participants

Participants were 2,157 male students from several metropolitan universities in Greater London. Ages ranged from 18 to 68 years ($M = 22.44$, $SD = 7.05$), and body mass index (BMI) ranged from 15.44 to 35.08 kg/m² ($M = 24.53$, $SD = 3.21$). The number of participants assigned to each of the eleven

groups (see Materials subsection below) and other demographic information by group are reported in Table 1. All participants were from a convenience sample, and although they should not be considered representative of the wider British population, they are likely indicative of British higher education students and represent different ethno-cultural backgrounds.

Materials

Photographic figure rating scale (PFRS; Swami et al., 2008a). This scale is an advance on the Contour Drawing Figure Rating Scale (Thompson & Gray, 1995) and consists of 10 grayscale photographic figures of real women in front-view. The images represent two women from each of the established BMI categories: emaciated (<15 kg/m²), underweight (15–18.5 kg/m²), normal weight (18.5–24.9 kg/m²), overweight (25.0–29.9 kg/m²), and obese (>30 kg/m²). After Swami, Buchanan, et al. (2008), all participants were asked to identify (1) the figure they considered most physically attractive; (2) the largest figure they considered physically attractive, and; (3) the smallest figure they considered physically attractive. Responses were made on a 10-point scale, with 1 representing the woman with the lowest BMI and 10 the woman with the highest BMI.

In the present study, a between-subjects design with 11 distinct groups was used. One group, termed the control group, completed the PFRS as indicated above (that is, without any personality information). In all 10 other conditions, participants were provided with personal vignettes that they were asked to imagine described each of the women they were rating. The vignettes for Extraversion and Introversion were revised from Swami et al. (2007), while others were designed to reflect poles of each of the remaining Big Five constructs (see Appendix 1 for a list of the vignettes). Previous work has shown that when Neuroticism is reflected, all five of the Big Five factors are positively correlated because they are socially desirable in the West (Digman, 1997), thus supporting our method of devising positive and negative personality vignettes based on the poles of the Big Five. Once the vignettes had been written, the first three authors discussed revisions and discrepancies, before arriving at final versions of each.

In a pilot study, each of the ten personality vignettes was reworded to describe individual women (rather than groups of women). Forty-six male undergraduates (age $M = 20.33$, $SD = 1.35$)—none of whom were affiliated with, and subsequently participated in, the present study—rated the women described in the vignettes for desirability as a potential partner (1 = *Not at all desirable*, 7 = *Extremely desirable*). The order of presentation of vignettes was randomized for each participant. In comparing the sum of ratings on positive and negative vignettes, results showed that the former ($M = 25.02$, $SD = 3.61$) were rated as more desirable than the latter ($M = 11.76$, $SD = 2.09$), $t(45) = 19.93$, $p < .001$, $d = 4.50$. Results also showed that each positive vignette was rated as more desirable than each negative vignette (M s and SD s are reported in Appendix 1):

TABLE 1. Participants' Demographic Data and Big Five Personality Scores by Group

	Control (<i>n</i> = 490)	Intravert (<i>n</i> = 187)	Extravert (<i>n</i> = 175)	Disagree eable (<i>n</i> = 152)	Agreeable (<i>n</i> = 150)	Closed (<i>n</i> = 156)	Open (<i>n</i> = 138)	Uncon scientious (<i>n</i> = 192)	Consci entious (<i>n</i> = 182)	Neurotic (<i>n</i> = 147)	Stable (<i>n</i> = 188)
Age (years)											
<i>M</i>	22.68	23.05	21.75	23.28	21.78	21.76	22.12	21.88	22.74	24.07	21.46
<i>SD</i>	7.50	8.07	5.67	7.75	6.46	5.67	6.64	6.00	7.66	9.47	4.50
BMI (kg/m ²)											
<i>M</i>	23.54	24.83	25.27	26.61	26.40	26.64	24.00	24.04	23.70	23.83	23.47
<i>SD</i>	2.80	4.60	3.62	3.25	3.14	3.06	2.56	2.42	3.42	2.39	2.60
Ethnicity (%)											
Caucasian	73.5	86.1	73.1	55.9	65.3	51.3	20.3	82.3	81.3	53.6	49.1
Asian	16.5	3.7	8.0	21.7	18.0	23.1	37.0	12.5	18.1	17.1	4.0
African	3.7	0.0	5.1	15.8	10.0	17.9	15.9	5.2	0.5	9.5	14.9
Caribbean											
Other	6.3	10.2	13.7	6.6	6.7	7.7	26.8	0.0	0.0	19.7	31.9
Religion (%)											
Christian	35.1	52.9	45.1	53.3	46.7	51.3	18.1	27.1	26.4	41.6	51.3
None/ Atheist	42.7	27.8	22.9	19.7	28.0	17.9	15.2	64.6	46.7	9.5	10.6
Other	19.6	6.4	15.4	20.4	23.3	23.1	60.1	8.3	24.1	47.5	29.6
Not sure	2.7	12.8	6.6	6.6	2.0	7.7	6.5	0.0	2.7	1.4	8.5
Marital status (%)											
Single	64.5	52.1	48.6	60.3	54.0	60.8	49.3	72.4	62.6	59.9	51.1
Dating	29.4	28.9	22.9	19.1	20.7	20.5	37.7	21.9	19.8	35.4	34.0
Married	5.3	7.8	7.7	10.1	12.7	8.5	6.5	5.7	17.6	1.4	8.5
Other	0.8	11.2	6.9	10.5	12.7	10.3	6.5	0.0	0.0	3.4	6.4

(Continued)

TABLE 1. (Continued)

	Control (<i>n</i> = 490)	Intravert (<i>n</i> = 187)	Extravert (<i>n</i> = 175)	Disagree eable (<i>n</i> = 152)	Agreeable (<i>n</i> = 150)	Closed (<i>n</i> = 156)	Open (<i>n</i> = 138)	Uncon scientious (<i>n</i> = 192)	Consci entious (<i>n</i> = 182)	Neurotic (<i>n</i> = 147)	Stable (<i>n</i> = 188)
Openness											
<i>M</i>	10.35	9.96	9.60	8.59	8.96	8.33	10.57	10.57	10.29	10.88	10.85
<i>SD</i>	2.45	1.85	1.97	2.20	2.58	2.19	2.14	2.02	1.88	2.26	1.98
Conscientiousness											
<i>M</i>	9.67	10.99	10.25	8.65	9.46	8.38	9.07	9.30	9.47	9.99	9.32
<i>SD</i>	2.60	2.17	2.27	2.27	2.57	2.33	2.75	2.89	2.69	2.77	2.67
Extraversion											
<i>M</i>	9.39	8.82	9.36	7.41	8.24	7.41	10.73	9.81	9.29	10.24	10.96
<i>SD</i>	2.68	2.67	2.58	2.13	3.28	2.18	2.54	2.32	3.11	3.02	2.40
Agreeableness											
<i>M</i>	9.19	9.41	8.74	9.17	9.52	9.33	9.31	9.12	9.04	10.34	8.85
<i>SD</i>	2.30	2.39	2.27	1.88	2.01	1.97	2.37	2.62	2.37	2.24	2.44
Emotional stability											
<i>M</i>	10.02	10.33	10.42	9.12	9.47	9.08	9.62	10.45	9.36	10.60	9.74
<i>SD</i>	2.66	2.09	2.15	2.27	2.59	2.40	2.81	2.67	2.93	2.90	2.89

Open versus Closed, $t(45) = 5.75, p < .001, d = 1.25$; Conscientious versus Unconscientious, $t(45) = 20.43, p < .001, d = 4.14$; Extravert versus Intravert, $t(45) = 2.80, p = .008, d = 1.09$; Agreeable versus Disagreeable, $t(45) = 18.48, p < .001, d = 3.62$; Stable versus Neurotic, $t(45) = 13.56, p < .001, d = 2.86$.

Ten item personality inventory (TIPI; Gosling, Rentfrow, & Swann, 2003). This is a brief scale for assessing the Big Five personality facets, which shows adequate convergent and discriminant validity, test-retest reliability, and patterns of external correlates. Participants rated the extent to which a pair of traits (e.g., “Extraverted, enthusiastic”) applies to them on a 7-point scale (1 = *Disagree strongly*, 7 = *Agree strongly*). Five items are reverse-coded, and two items are averaged to arrive at scores for each of the Big Five personality traits. Cronbach’s α coefficients were as follows: Extraversion .53, Agreeableness .56, Conscientiousness .53, Emotional stability .50, and Openness to experience .51. Although these α s are generally low, they were measured using only two items and are in line with norms.

Demographics. All participants provided their demographic details, consisting of sex, age, ethnicity, religion, marital status, height, and weight. The latter two items were used to calculate participants’ BMI in kg/m².

Procedure

Ethical approval for the study was obtained from the relevant university ethical committees. All participants were recruited on a convenience basis, which in practice meant a multitude of researchers approaching potential participants on several university campuses. Participants were randomly assigned to one of the 10 personality conditions, and an age-matched control group was then recruited. Recruitment of participants continued until a sufficiently large sample had been collected. The only constraint on participation was that potential participants should be of adult age and of heterosexual orientation. The nature of the experiment was explained to participants, and once they provided informed consent, they were given a two-page, paper-and-pencil questionnaire to complete along with brief instructions. All participants took part on a voluntary basis and were not remunerated for their participation. They were verbally debriefed once they had completed and returned the questionnaire to the experimenter.

Statistical Analysis

Three separate sets of analyses were conducted on SPSS version 15.0. First, we examined whether there were significant between-group differences in the

female figure that participants found most attractive. We then examined possible between-group differences in the attractiveness range (AR), computed as the smallest figure that participants found attractive subtracted from the largest figure (see Fisak et al., 2007). In both cases, we defined “groups” in two ways: (1) an overall comparison of ratings based on positive and negative descriptors, and; (2) individual comparison of each polar opposite of Big Five factors (e.g., Extravert versus Intravert). Where there were significant differences in the AR for the overall comparisons, we also examined individual components of the AR measure by examining ratings of thinnest and largest attractive figures, respectively (similar comparisons for polar ratings are not reported for reasons of brevity). For these analyses, α for significance was set at .05. Finally, using only ratings by control group participants, we examined the correlation between participants’ own Big Five personality scores, demographic variables (age and BMI), the figure they found most attractive, and the AR.

Results

Descriptive Statistics

Participant demographics and Big Five personality scores are reported in Table 1. One-way analyses of variance (ANOVAs) showed that there were significant between-group differences in participants’ age, $F(10, 2156) = 2.21, p = .015, \eta_p^2 = .01$, and BMI, $F(10, 2156) = 32.90, p < .001, \eta_p^2 = .13$. Although the statistical significance of these results was likely a function of the large sample size, we nevertheless included participant age and BMI as covariates in all subsequent analyses.

Initially, we also examined inter-item correlations between ratings of the most attractive figure, the thinnest attractive figure, the largest attractive figure, and the AR for the full sample (see Table 2). Importantly, the results showed that there were significant correlations between the AR and the thinnest and largest attractive figures, respectively. The pattern of results suggests that most of the variance in AR can be attributed to variation in the largest attractive figure, rather than the thinnest attractive figure (see also below).

Most Attractive Figure

Mean ratings of the most attractive figure are reported in Table 3, along with results of all analyses of covariance (ANCOVAs). When the groups were combined in terms of positive or negative descriptors, results of a one-way ANCOVA showed no significant effect of group. When polar comparisons were conducted with control group scores, the only significant difference was found between the Agreeable, Disagreeable, and Control groups (see Table 3). Pairwise comparisons showed that ratings by the Agreeable and Disagreeable groups were

TABLE 2. Descriptive Statistics and Inter-Item Correlations Between Ratings of the Most Attractive Figure, the Thinnest Attractive Figure, the Largest Attractive Figure, and the Attractiveness Range (AR) for the Full Sample

	Most attractive figure	Thinnest attractive figure	Largest attractive figure	Attractiveness range
Most attractive figure		.36**	.22**	.03
Thinnest attractive figure			.29**	-.24**
Largest attractive figure				.86**
<i>M</i>	3.99	3.09	5.96	2.87
<i>SD</i>	0.82	0.84	1.60	1.58

Note. ** $p < .001$.

not significant differently from each other, $t(300) = 0.08$, $p = .938$, $d < .01$, but participants who were given Agreeable personality information preferred heavier women than participants given no personality information, $t(638) = 4.05$, $p < .001$, $d = .33$, as did participants given Disagreeable personality information, $t(640) = 4.20$, $p < .001$, $d = .36$.

Attractiveness Range

The same analyses as above were repeated, but using the AR as the dependent variable (means and results are reported in Table 3). When the groups were combined in terms of positive or negative descriptors, results of an ANCOVA showed a significant difference in the AR between the positive vignette, negative vignette, and control groups. Pairwise comparisons showed that the positive vignette groups had a significantly wider AR than both the control, $t(1321) = 10.98$, $p < .001$, $d = .65$, and negative vignette groups, $t(1665) = 19.72$, $p < .001$, $d = .96$. In addition, the control group had a significantly wider AR than the negative vignette group, $t(1322) = 6.99$, $p < .001$, $d = .40$.

In order to explicate these results, we also conducted between-groups analyses for the thinnest and largest figures rated as attractive, respectively. Results showed no significant between-group differences in the thinnest figure selected as most attractive (Control $M = 3.00$, $SD = 0.66$; Positive $M = 3.08$, $SD = 0.99$; Negative $M = 3.15$, $SD = 0.77$), $F(1, 2152) = 2.92$, $p = .06$, $\eta_p^2 = < .01$. In contrast, there were significant between-group differences in the largest figure rated as most attractive (Control $M = 5.69$, $SD = 1.22$; Positive $M = 6.73$, $SD = 1.74$; Negative $M = 5.96$, $SD = 1.30$), $F(1, 2152) = 193.03$, $p < .001$, η_p^2

TABLE 3. Mean Responses and Standard Deviations for the Most Attractive Figure and Attractiveness Range, as well as Analysis of Covariance Results for Overall and Polar Comparisons

	Most attractive figure				Attractiveness range					
	<i>M</i> (<i>SD</i>)	df	<i>F</i>	<i>p</i>	η_p^2	<i>M</i> (<i>SD</i>)	df	<i>F</i>	<i>p</i>	η_p^2
Overall comparison										
Control group	4.04 (0.91)	2,2152	2.59	0.075	<.01	2.69 (1.19)	2,2152	213.16	<.001	.17
Positive personality	4.00 (0.77)					3.65 (1.70)				
Negative personality	3.90 (0.76)					2.20 (1.28)				
Polar comparisons										
Agreeable	4.23 (1.17)	2,787	5.95	0.003	.01	3.97 (0.99)	2,787	98.53	<.001	.20
Disagreeable	4.22 (1.00)					2.17 (1.17)				
Open	3.98 (0.75)	2,779	1.39	0.249	<.01	3.96 (1.77)	2,779	67.39	<.001	.15
Closed	4.05 (0.78)					2.35 (0.92)				
Conscientious	4.02 (0.66)	2,859	1.89	0.151	<.01	2.77 (1.85)	2,859	5.10	.162	.01
Unconscientious	3.91 (0.61)					2.53 (1.29)				
Extravert	4.02 (1.11)	2,847	0.78	0.457	<.01	3.48 (1.57)	2,847	110.19	<.001	.19
Intravert	4.03 (0.63)					1.58 (1.26)				
Emotionally stable	3.96 (0.77)	2,820	2.21	0.110	<.01	4.17 (1.71)	2,820	91.64	<.001	.18
Neurotic	3.79 (0.75)					2.39 (1.19)				

Note. Polar comparisons included control group scores.

TABLE 4. Bivariate Correlations Between Most Attractive Figure Ratings, Attractiveness Range, Participants Big Five Personality Scores, Age, and Body Mass Index (for Control Group Participants Only)

	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Most attractive figure	.33**	-.11*	-.07	-.05	-.04	-.01	.03	.10*
(2) Attractiveness range		-.11*	.08	-.04	-.01	-.08	-.01	.01
(3) Extraversion			.02	.28**	-.03	-.02	.04	.20**
(4) Emotional stability				.13*	.01	.04	-.05	-.01
(5) Openness					.05	-.14*	-.05	.08
(6) Conscientiousness						-.01	.10*	-.01
(7) Agreeableness							.02	.01
(8) Age								.02
(9) Body mass index								

Note. * $p < .05$, ** $p < .001$.

= .14. Pairwise comparisons showed that the positive vignette group selected a significantly heavier figure than the control, $t(1321) = 11.66, p < .001, d = 0.69$, and negative vignette groups, $t(1665) = 18.32, p < .001, d = 0.50$. In addition, the negative vignette group selected a significantly heavier figure than the control group, $t(1322) = 4.69, p < .001, d = 0.21$.

When the groups were compared individually by polar opposites (see Table 3), an ANCOVA showed a significant difference between the Open, Closed, and Control groups. Pairwise comparisons showed that the Open group had a significantly wider AR than the Closed, $t(292) = 9.93, p < .001, d = 1.13$, and Control groups, $t(626) = 9.86, p < .001, d = .84$. The Control group also had a wider AR than the Closed group, $t(644) = 3.22, p = .001, d = .31$. Similarly, there was a significant difference between the Extravert, Intravert, and Control groups, and pairwise comparisons showed that the Extravert group had a wider AR than the Intravert, $t(360) = 12.73, p < .001, d = 1.33$, and Control groups, $t(663) = 6.89, p < .001, d = .57$. The latter also had a wider AR than the Intravert group, $t(675) = 10.69, p < .001, d = .91$.

An ANCOVA between the Agreeable, Disagreeable, and Control groups also returned a significant result, and pairwise comparisons showed that the Agreeableness group had a wider AR than both the Disagreeable, $t(300) = 14.36, p < .001, d = 1.66$, and Control groups, $t(638) = 11.90, p < .001, d = 1.17$, whereas the Control group had a wider AR than the Disagreeable group, $t(640) = 4.75, p < .001, d = .44$. Likewise, there was a significant difference in AR between the Stable, Neurotic, and Control groups. Pairwise comparisons showed that the Stable group had a wider AR than the Neurotic group, $t(333) = 10.00, p < .001, d = 1.11$, as well as the Control group, $t(676) = 12.71, p < .001,$

$d = 1.00$. In addition, the Control group had a significant wider AR than the Neurotic group, $t(635) = 2.52, p < .001, d = .22$. The only ANCOVA that did not return a significant result was the comparison between the Conscientious, Unconscientious, and Control groups.

Correlational Analyses

To examine whether participants' own Big Five personality scores and demographics (age and BMI) were associated with the figure they selected as the most attractive and the AR, we initially conducted bivariate correlations between these variables. As can be seen in Table 4, the most attractive figure rating was significantly and negatively correlated with Extraversion and positively correlated with BMI, whereas the AR was only significantly and negatively correlated with Extraversion.

Discussion

The results of this study showed that there were few significant differences in the figure that participants found most physically attractive as a function of the provision of personality information. That is, whether or not participants were provided with personality information about the women they were rating, or whether they received positive or negative personality information, they generally agreed on the figure that they found most physically attractive. By contrast, our results showed that personality information did have a significant effect on the range of body sizes that participants judged to be physically attractive. Overall, the provision of positive Big Five information resulted in a wider range of figures being perceived as attractive compared with the Control group, whereas the negative personality information resulted in a constriction of the AR. Further analyses suggested that this difference was largely a function of heavier figures being rated more positively when paired with positive personality information.

Looking at the Big Five poles individually, it was seen that the positive poles almost always resulted in a wider AR than the negative poles (the one exception being on the Conscientious versus Unconscientious vignettes). In short, these results suggest that the availability of positive personality information leads to larger figures being judged as physically attractive, and that personality may moderate the effect of body size on attractiveness. That is, positive personality information may reduce the salience of body size in interpersonal judgments, possibly because it compensates for less attractive physical traits.

Overall, our results support previous work showing that non-physical characteristics can influence perceptions of physical attractiveness (e.g., Albada, Knapp, & Theune, 2002; Kniffin & Wilson, 2004; Lewandowski et al., 2007; Pahunonen, 2006; Swami et al., 2007). Taken together, these results are important because they

begin the task of rectifying an oversight within contemporary research on interpersonal attraction, which has tended to focus on physical aspects to the exclusion of non-physical traits. Moreover, while most of the above studies have examined the influence of personality-type information on interpersonal judgments, Swami and Furnham (2008, Ch. 9) note that there are many other non-physical factors that may play a role in interpersonal judgments, including reputation (see Rucas et al., 2006), social and emotional role-playing skills (Riggio, 1986), dress sense (Riggio, Widaman, Tucker, & Salinas, 1991), and non-verbal communication (e.g., Argyle, 1988).

The present results also suggest participants' own BMI and personality may be associated with their body size perceptions, albeit very weakly. In the first instance, our results suggest that men with a higher BMI find heavier women attractive, which is consistent with previous research (e.g., Tovée, Emery, & Cohen-Tovée, 2000). In addition, we found that more extraverted participants were likely to choose a thinner female figure as maximally attractive, and that they also found a narrower range of body sizes attractive. It might be speculated that such individuals, who tend to be highly engaged with the external world, are more likely to conform to social stereotypes of attractiveness, such as the thin ideal for women's physical attractiveness.

However, it is also important to note the discrepancy between the present results and those of Swami, Buchanan, et al. (2008). First, the apparent relationship between Extraversion and body size ratings was not found by previous work, and second, we found no significant associations between body size perceptions and Agreeableness or Openness, where Swami, Buchanan, et al. (2008) did. This discrepancy might be explained as a function of the measurement of the Big Five personality factors. Specifically, the alpha coefficients for participants' Big Five personality scores in the present study, as measured using the TIPI, were generally low. This may have resulted in the underestimation of the effect of Big Five factors and in lower power than would be achieved with more reliable measures (e.g., see Swami, Buchanan, et al., 2008). However, given the directional differences of these associations and their weakness (present study r s between .20–.28; Swami et al., 2008c, r s between .10–.20), the reliability of reported associations between observer personality and body size perceptions may also be questioned.

The strengths of this study include the systematic investigation of the influence of personality information on body size perceptions, where the former was manipulated using the Big Five framework. Given the predictive validity of the Big Five (Chamorro-Premuzic, 2007), our manipulation is likely a better method of investigating these issues than simply presenting participants with positive or negative personality information (cf. Fisak et al., 2007; Lewandowski et al., 2007). That is, our Big Five vignettes are likely a more comprehensive reflection of the different types of personalities that are found in everyday social situations. In addition, the sample size in the present study was significantly larger than that

in all previous studies that have examined the influence of non-physical traits on physical attractiveness, although it should be remembered that our participants were university students, which necessarily limits the generalizability of our findings.

Like previous studies, however, the major limitation of our design is the compromise on ecological validity inherent in the presentation of personality information concurrently with physical attributes. As Lewandowski et al. (2007) note, this design is problematic because it is unable to determine how judgments of attractiveness change over time or with repeated exposure to an individual. Certainly, a within-subjects design, in which participants provide attractiveness ratings before and after the presentation of personality information (see Lewandowski et al., 2007), may be one way to extend the present findings. Even here, however, a compromise on ecological validity may be unavoidable given the complex nature of interpersonal attraction, and field or time-series studies may be more suited to understanding the way in which physical attraction changes as a function of the provision of personality information.

It is also important to note that the PFRS suffers from a lack of an in-depth examination of its psychometric properties. Although previous work has shown that the PFRS has high construct validity and test-retest reliability when completed by women (Swami et al., 2008a), further research is required to examine the scale's psychometrics when completed by men and when the figures are rated for physical attractiveness. Moreover, while the present study extended the available literature by examining ratings of the most attractive figure as well as the AR (see also Fisak et al., 2007), future research should be mindful of the manner in which the latter score is calculated. Specifically, in the present study, it appeared that much of the variance in the AR could be attributed to changes in the largest figure rated as attractive (rather than the thinnest figure). This again highlights the need for future studies to examine the psychometric properties of AR scores, if it to be used in further research on physical attractiveness.

These limitations notwithstanding, our results highlight the dynamic and malleable nature of physical attraction. These results have important implications for philosophical and psychological debates about human beauty, as well as the cultural prescription of beauty ideals within contemporary society. In the first instance, rather than being universal or static, perceptions of physical attractiveness can clearly change as a function of individual factors (see Swami, 2007). In terms of contemporary culture, it is important to emphasize that an individual's attractiveness encompasses much more than simply her or his physical qualities. In particular, a positive personality can alter perceptions of an individual's attractiveness for the better. In this sense, and contrary to received axioms, beauty really is more than skin-deep.

AUTHOR NOTES

Viren Swami is a Reader in the Department of Psychology at University of Westminster. His main area of research is on interpersonal attraction and he is the author of *The Missing Arms of Venus de Milo* and (with Adrian Furnham) *The Psychology of Physical Attraction*. **Adrian Furnham** is a Professor in the Department of Clinical, Educational and Health Psychology at University College London. He is a leading expert on organizational psychology and psychometrics, especially personality assessment, and has written over 40 books. **Tomas Chamorro-Premuzic** is a Senior Lecturer in the Department of Psychology at Goldsmiths, University of London. His main areas of research are on personality and intelligence, creativity, psychometric testing and consumer behavior. **Tasha Harris, Kanwal Akbar** and **Natalie Gordon** are graduates from the Department of Psychology at the University of Westminster. **Jo Finch** is a graduate from the Department of Psychology at University College London. **Martin Tovée** is a Reader in Visual Cognition in the Institute of Neuroscience at University of Newcastle. His research explores human mate selection and the perception of physical attractiveness in an evolutionary psychology context.

REFERENCES

- Albada, K., Knapp, M. L., & Theune, K. E. (2002). Interaction appearance theory: Changing perceptions of physical attractiveness through social interaction. *Communication Theory, 12*, 8–40.
- Argyle, M. (1988). *Bodily communication* (2nd ed.). London: Methuen.
- Bateson, M., Cornelissen, P. L., & Tovée, M. J. (2007). Methodological issues in studies of female attractiveness. In V. Swami & A. Furnham (Eds.), *Body beautiful: Evolutionary and sociocultural perspectives* (pp. 46–63). Basingstoke: Palgrave Macmillan.
- Buchanan, T., Johnson, J. A., & Goldberg, L. R. (2005). Implementing a five-factor personality inventory for use on the Internet. *European Journal of Psychological Assessment, 21*, 115–127.
- Chamorro-Premuzic, T. (2007). *Personality and individual differences*. Oxford: Blackwell.
- Digman, J. M. (1997). Higher-order factors of the Big Five. *Journal of Personality and Social Psychology, 73*, 1246–1256.
- Dion, K. K., Berscheid, E., & Walster, E. (1972). What is beautiful is good. *Journal of Personality and Social Psychology, 24*, 285–290.
- Eagly, E. H., Ashmore, R. D., Makhijani, M. G., & Longo, L. C. (1991). What is beautiful is good, but . . . A meta-analytic review of research on the physical attractiveness stereotype. *Psychological Bulletin, 110*, 109–128.
- Feingold, A. (1992). Good-looking people are not what we think. *Psychological Bulletin, 111*, 304–341.
- Fisak, B., Jr., Tantleff-Dunn, S., & Peterson, R. D. (2007). Personality information: Does it influence attractiveness ratings of various body sizes? *Body Image, 4*, 213–217.
- Friedman, H. S., Riggio, R. E., & Casella, D. F. (1988). Nonverbal skill, personal charisma, and initial attraction. *Journal of Personality and Social Psychology, 14*, 203–211.
- Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist, 48*, 26–34.

- Gosling, S. D., Rentfrow, P. J., & Swann, W. B., Jr. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37*, 504–528.
- Gross, A. E., & Crofton, C. (1977). What is good is beautiful. *Sociometry, 40*, 85–90.
- Jensen-Campbell, L., Graziano, W. G., & West, S. G. (1995). Dominance, prosocial orientation, and female preferences: Do nice guys really finish last? *Journal of Personality and Social Psychology, 68*, 427–440.
- Kniffin, K. M., & Wilson, D. S. (2004). The effect of non-physical traits on the perception of physical attractiveness: Three naturalistic studies. *Evolution and Human Behavior, 25*, 88–101.
- Langlois, J. H., Kalakanis, L. E., Rubenstein, A. J., Larson, A. D., Hallam, M. J., & Smoot, M. T. (2000). Maxims and myths of beauty: A meta-analytic and theoretical review. *Psychological Bulletin, 126*, 390–423.
- Lewandowski, G. W., Aron, A., & Gee, J. (2007). Personality goes a long way: The malleability of opposite-sex physical attractiveness. *Personal Relationships, 14*, 571–585.
- Li, N., Bailey, J., & Kenrick, D. T. (2002). The necessities and luxuries of mate preferences: Testing the tradeoffs. *Journal of Personality and Social Psychology, 82*, 947–955.
- Lundy, D. E., Tan, J., & Cunningham, M. R. (1998). Heterosexual romantic preferences: The importance of humor and physical attractiveness for different types of relationships. *Personal Relationships, 5*, 311–325.
- McCrae, R. R., & Costa, P. T., Jr. (1997). Personality trait structure as a human universal. *American Psychologist, 52*, 509–516.
- Paunonen, S. V. (2006). You are honest, therefore I like you and find you attractive. *Journal of Research in Personality, 40*, 237–249.
- Riggio, R. E. (1986). Assessment of basic social skills. *Journal of Personality and Social Psychology, 51*, 649–660.
- Riggio, R. E., Friedman, H. S., & DiMatteo, M. R. (1981). Nonverbal greetings: Effects of the situation and personality. *Personality and Social Psychology Bulletin, 7*, 682–689.
- Riggio, R. E., Widaman, K. F., Tucker, J. S., & Salinas, C. (1991). Beauty is more than skin deep: Components of attractiveness. *Basic and Applied Social Psychology, 12*, 423–439.
- Rucas, S., Kaplan, H., Winking, J., Gurven, M., Gangestad, S., & Crespo, M. (2006). Female intrasexual competition and reputational effects on attractiveness among the Tsimane of Bolivia. *Evolution and Human Behavior, 27*, 40–52.
- Schmalt, H.-D. (2006). Waist-to-hip ratio and female physical attractiveness: The moderating role of power motivation and the mating context. *Personality and Individual Differences, 41*, 455–465.
- Swami, V. (2007). *The missing arms of Venus de Milo: Reflections on the science of physical attractiveness*. Brighton: The Book Guild.
- Swami, V., & Furnham, A. (2008). *The psychology of physical attraction*. London: Routledge.
- Swami, V., & Torée, M. J. (2009). Big beautiful women: The body size preferences of male fat admirers. *Journal of Sex Research, 46*, 89–96.
- Swami, V., Greven, C., & Furnham, A. (2007). More than just skin-deep? A pilot study integrating physical and non-physical factors in the perception of physical attractiveness. *Personality and Individual Differences, 42*, 563–572.
- Swami, V., Salem, N., Furnham, A., & Tovée, M. J. (2008a). Initial examination of the validity and reliability of the female Photographic Figure Rating Scale for body image assessment. *Personality and Individual Differences, 44*, 1752–1761.
- Swami, V., Salem, N., Furnham, A., & Tovée, M. J. (2008b). The influence of feminist ascription on judgements of women's physical attractiveness. *Body Image, 5*, 224–229.
- Swami, V., Buchanan, T., Furnham, A., & Tovée, M. J. (2008). Five-factor personality correlates of perceptions of women's body sizes. *Personality and Individual Differences, 45*, 697–699.

- Swami, V., Furnham, A., Balakumar, N., Williams, C., Canaway, K., & Stanistreet, D. (2008). Factors influencing preferences for height: A replication and extension. *Personality and Individual Differences, 45*, 395–400.
- Swami, V., Miller, R., Furnham, A., Penke, L., & Tovée, M. J. (2008). The influence of men's sexual strategies on perceptions of women's bodily attractiveness, health and fertility. *Personality and Individual Differences, 44*, 98–107.
- Thompson, M. J., & Gray, J. J. (1995). Development and validation of a new body image assessment scale. *Journal of Personality Assessment, 64*, 258–269.
- Tovée, M. J., Emery, J. L., & Cohen-Tovée, E. L. (2000). The estimation of body mass index and physical attractiveness is dependent on the observer's own body mass index. *Proceedings of the Royal Society of London Series B (Biological Sciences), 267*, 1987–1997.

Received October 29, 2008

Accepted March 20, 2009

APPENDIX 1. Big Five Personality Vignettes Used in the Present Study and Their Desirability Ratings in a Pilot Study (See Materials Subsection)

Item	Vignette	Desirability rating ^a	
		<i>M</i>	<i>SD</i>
Open	The women are imaginative and creative, and show an appreciation for art and beauty. They are aware of their feelings, hold unconventional and individualistic beliefs, and show a marked curiosity for novel experiences. They prefer the complex, ambiguous and subtle over the plain, straightforward and obvious. Overall, they like novelty and are open to new experiences and change.	4.89	1.52
Closed	The women are down-to-earth and conventional, and are not intellectually curious. They are not always aware of their feelings, hold traditional and conformist beliefs, and have narrow, common interests. They prefer the plain, straightforward and obvious over the complex, ambiguous and subtle. Overall, they are conservative and resistant to new experiences and change.	3.13	1.29

(Continued)

APPENDIX 1. (Continued)

Item	Vignette	Desirability rating ^a	
		<i>M</i>	<i>SD</i>
Conscientious	The women tend to avoid trouble, are purposeful in their planning and persistent. They are ambitious, have a high need for achievement, and people often consider them as being intelligent and reliable. They are neat, exacting in their work and pay attention to detail. Sometimes they can be perfectionists and workaholics, and others sometimes think they are boring and stuffy.	5.43	1.03
Unconscientious	The women tend to be unconflicting, are undisciplined in their planning and fickle. They lack ambition, have a low need for achievement, and people often consider them as being unreliable and not very intelligent. They are messy, often shirk their duties and do not pay much attention to detail. They experience many short-lived pleasures and others rarely ever consider them stuffy or boring.	1.61	0.80
Extravert	The women are friendly and like to be around others. They are action-oriented, are 'people persons,' and often feel energetic. They are open and show their emotions easily, but usually act before thinking. Overall, they have a cheerful outlook, react to things spontaneously and have an entertaining curiosity about most things.	4.07	1.36
Introvert	The women are shy and quiet, and like to spend time alone. They like ideas and concepts, and prefer solitude for concentration. They are thoughtful and keep their emotions private, but usually think before acting. Overall, they are highly analytical and precise in their thinking, and tend to shy away from social interactions.	3.28	1.28
Agreeable	The women tend to be compassionate, good-natured, eager to cooperate and avoid conflicts. They are considered by others as being modest, generous, kind, emphatic and trusting. Rarely are they thought of as hard-headed or proud, and they rarely express any displeasure they might feel. They are sometimes thought of as tender and undemanding.	5.76	0.92

(Continued)

APPENDIX 1. (Continued)

Item	Vignette	Desirability rating ^a	
		<i>M</i>	<i>SD</i>
Disagreeable	The women tend to be critical, uncooperative, and tend to place self-interest above getting along with others. They are considered by others as being proud, resolute, and suspicious by nature. Rarely are they thought of as emphatic and modest, and they are often vocal in expressing any displeasure they might feel. They are pessimistic about human nature, believing people are deceitful and dishonest.	2.15	1.07
Stable	The women tend to be emotionally stable, indifferent and rather unemotional. They are not easily upset and people often think of them as being calm and free from persistent negative feelings. They do not get depressed easily, are rarely anxious and do not take criticism to heart. Rarely are they thought of as sensitive or emotional, and they generally feel calm even during stressful events.	4.87	1.24
Neurotic	The women tend to be moody, sensitive and rather emotional. They are prone to feelings that are upsetting and people often think of them as being 'touchy.' They get depressed easily, are a little anxious and thin-skinned. Rarely are they thought of as stable or hardy, and they generally feel tense even during stress-free events.	1.59	0.83

Note. ^aIn the pilot study, the vignettes were reworded to refer to individual women.