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The relative importance of the face and body in judgments of human physical attractiveness☆

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Abstract

A number of traits have been proposed to be important in human mate choice decisions. However, relatively little work has been conducted to determine the relative importance of these traits. In this study, we assessed the relative importance of the face and body in judgments of human physical attractiveness. One hundred twenty-seven men and 133 women were shown images of 10 individuals of the opposite sex. Participants rated the images for their attractiveness for either a short-term relationship or a long-term relationship. Images of the face and the body were rated independently before participants were shown and asked to rate the combined face and body images. Face ratings were found to be the best predictor of the ratings of combined images for both sexes and for both relationship types. Females showed no difference in ratings between short- and long-term conditions, but male ratings of female bodies became relatively more important for a short-term relationship compared with a long-term relationship. Results suggest that faces and bodies may be signaling different information about potential mates.

Keywords: Facial attractiveness; Bodies; Preferences; Evolution; Multiple cues; Sexual selection

1. Introduction

Over recent years, an extensive literature concerning possible physical traits involved in human mate choice decisions has developed. These traits include such features as waist-to-hip ratio (WHR) (Singh, 1993), body fat (Smith, Cornelissen, & Tovee, 2007), symmetry (see Rhodes & Simmons, 2007, and references therein), breast size (Manning, Scutt, Whitehouse, & Leinster, 1997), volume-to-height index (Fan, Dai, Liu, & Wu, 2005), and foot size (Fessler et al., 2005). Few studies have looked at the relative importance of these traits, however. This is an important issue as preferences that may be revealed in tightly controlled experimental conditions may be of little or no importance in actual human mate choice decisions. On the other hand, studying preferences under experimental conditions can reveal important aspects of mate choice behaviour that are masked under natural conditions due to the constraints of time and availability of mates. Analysing more than a single trait at a time can shed light on why multiple cues have evolved and how these cues are integrated to produce real mate choice behaviour.

Although a number of attributes have been implicated in human mate choice decisions, there are a number of theoretical issues concerning the use of multiple cues that have not been fully appreciated in the human mate choice literature. First, there may be costs attached to using more than one cue to assess members of the opposite sex (e.g., increased amount of time) (Candolin, 2003). Furthermore, several studies have proposed different traits to be indicators of the same underlying aspect of quality. For example, in his work on cross-cultural mate preferences, Buss (1994)

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described female preferences for older men, high status men, and industrious, ambitious men because these indicate a man's ability to acquire resources. Symmetry in the breasts (Manning et al., 1997) and that in the face (Grammer & Thornhill, 1994) have been proposed to be an indicator of the same 'good genes' in females. Correlations between facial symmetry and facial sexual dimorphism have also been taken as evidence that both traits signal some common underlying value (Gangestad & Thornhill, 2003; Little et al., 2008). However, if one trait reliably indicates the presence of a certain aspect of quality, what drove the evolution of the other cues?

Several theoretical models have been developed to explain the evolution of multiple preferences in mate choice decisions. The 'multiple messages' hypothesis states that multiple preferences evolve because they index different mate qualities. These qualities may be the result of 'good genes' selection for different aspects of quality (e.g., resource acquisition and immunocompetency), sensory bias, or 'Fisherian' selection. Different preferences can also evolve for different traits that are important on different time scales (e.g., one trait may signal current health status, while another signals the long-term quality of the immune system). The different traits may be evaluated together to indicate the general quality of the mate. There may also be individual variation in the use of different cues (Candolin, 2003). Mathematical models indicate that although multiple Fisherian cues are likely to evolve together, only a single indicator of genetic quality is stable (with or without additional Fisherian cues) (Iwasa & Pomiankowski, 1994; Pomiankowski & Iwasa, 1993). Although it is unclear how widely applicable these models are, in a comparative analysis, Moller and Pomiankowski (1993) found evidence for multiple Fisherian cues in bird species under the most intense sexual selection.

Another explanation for the evolution of multiple preferences is the 'back-up signal' hypothesis, which states that multiple preferences have evolved to more accurately assess a single aspect of mate 'quality' (Johnstone, 1996; Moller & Pomiankowski, 1993). This is likely to occur if a single trait is not a reliable indicator of mate quality. Traits may also indicate the same aspect of quality but are used in different contexts (e.g., close-up or from a distance) (Candolin, 2003).

Receiver psychology may be important in determining the evolution of multiple cues (Rowe, 1999). What at first may appear to be separate signals may in fact be a single signal made up of several components. Use of several components may elicit greater responses in individuals making the choices, and multicomponent signals may evolve because they aid reception of the signal in the opposite sex (Candolin, 2003).

Holland and Rice (1998) have proposed one further theory for the evolution of multiple cues based on an antagonistic co-evolution between the sexes, or 'chase-away' selection. Males may evolve signals that tap into preexisting female sensory biases. If such sensory exploitation causes females to mate in a suboptimal manner, females can in turn be expected to evolve resistance to these signals. This may lead to males developing new signals. The previous signals, although no longer able to manipulate female behaviour by themselves, may be required to achieve stimulus levels above a certain threshold, thus leading to males adorned with multiple display traits.

If multiple cues are used in mate choice decisions, it raises further questions about how information from those cues is integrated. Representing this integration as a simple weighted linear model [such as the Brunswick lens model (Brunswick, 1955)] is unlikely to be accurate because (a) cues may interact non-linearly, (b) cues may not be available for assessment simultaneously, or (c) cues might not be traded off against one another (i.e., a deficiency in one cue may not be compensated for by other cues) (Miller & Todd, 1998). Alternatively, multiple cues may be assessed additively (Kunzler & Bakker, 2001; Smith & Belk, 2001), sequentially, or hierarchically (Gibson, 1996). The attention paid to one cue may be dependent on the expression of another (Kodric-Brown & Nicoletto, 2001; Moller, Saino, Taramino, Galeotti, & Ferrario, 1998). Also, one cue may influence the cost of another (Candolin, 2003).

As yet there has been little theoretical and experimental work on assessing multiple cues in humans. Singh (1993) has proposed that men could use women's WHR as a 'wide first-pass filter,' screening out those women who may be unhealthy, have low reproductive capability, or be pregnant. However, Furnham, Lavancy, and McClelland (2001) found no evidence for such a role. Kenrick, Sadalla, Groth, and Trost (1990) found that the minimum acceptable levels for a number of traits increased with the length of relationship sought, but each trait was different in the way it increased and was different for each sex.

The purpose of our study was to examine whether facial or body attractiveness is more important in determining assessments of overall physical attractiveness in both sexes. Most studies have looked at facial and body cues in isolation, but some research has been done on the relationship between facial and body attractiveness.

Thornhill and Grammer (1999) found a correlation between independent male ratings of nude photographs of the face and those of both front and rear views of the body of 92 females. From these results, they concluded that the body and face of a woman represent one ornament of genetic quality. However, the correlations between face and body photographs were not particularly high (face and front, r=.30; face and back, r=.33), suggesting that although some aspects of facial and bodily attractiveness are linked, by no means all aspects are. A recent study by Hönekopp, Rudolph, Beier, Liebert, and Muller (2007) found that male physical fitness attractiveness correlates with body attractiveness but not with facial attractiveness and that physical fitness is related to self-reported mating success. The results suggest that one of the functions of body

attractiveness is to signal physical fitness and that facial attractiveness and body attractiveness signal different aspects of mate quality.

Some studies have explicitly looked at how face attractiveness and body attractiveness affect judgments of overall attractiveness. Using images from 15 females rated by a small number of males (7 each rating facial, body, and overall attractiveness), Mueser, Grau, Sussman, and Rosen (1984) found that facial attractiveness accounted for more of the variance in overall attractiveness than was accounted for by body attractiveness. Alicke, Smith, and Klotz (1986) created 27 artificial images by combining female faces and bodies of low, medium, and high attractiveness and had these composite images rated for overall attractiveness. Ratings of the image of the highly attractive face with the unattractive body were lower than those of the image of the unattractive face with the highly attractive body, suggesting that body attractiveness may be more important than facial attractiveness in determining overall attractiveness. The study by Furnham et al. (2001) used a single image manipulated to produce four levels of WHR and two levels of facial attractiveness (eight images in total). The authors found that WHR and facial attractiveness were both significant factors in ratings of attractiveness, sexiness, healthiness, fertility, and perceived pregnancy but that facial attractiveness was more important than WHR in all the measures except perceived pregnancy. Although only a pilot study, it does suggest that facial and bodily cues differ in the importance attached to them. More recently, Peters, Rhodes, and Simmons (2007) examined judgments of both male and female images. Using a much larger number of images than in previous studies, they found that the ratings of overall attractiveness made by 12 males and 12 females were better predicted by ratings (from different individuals) of facial attractiveness than by those of body attractiveness in both sexes. However, these results may be biased by the fact that the body images used in this experiment were clothed. Taken together, these previous studies suggest that faces and bodies signal different aspects of mate quality and may differ in the importance attached to them, although the findings differ as to whether faces or bodies are more important in judgments of overall attractiveness.

Photographs of the faces and bodies of men and women were taken specifically for this investigation to examine whether bodily or facial attractiveness is more important in assessing overall physical attractiveness. Rather than using ratings of overall attractiveness and body and face attractiveness from different individuals, the experiment was designed such that independent ratings given to the face and the body can be used as predictors of the rating given by the same individuals to combined face and body images. Furthermore, due to the different costs and benefits involved in pursuing a long-term or a short-term relationship (Buss & Schmitt, 1993), the relative importance of different cues in assessing the 'value' of a potential mate may vary depending on the type of relationship sought. Participants were assigned to rate the images either for a short-term relationship or for a long-term relationship to investigate whether the type of relationship a person is seeking affects these judgments.

2. Methods

2.1. Obtaining images

Face and body images were obtained by advertising on the University of Liverpool's electronic poster system (a message board that is seen every time a user logs on to one of the university computers) for participants to have their photos taken. Participants were informed about the purpose of the study and the way in which the images would be used. Participants were asked to sign a consent form and were paid £20 for having their photos taken and completing a short questionnaire.

One close-up shot of the participants' faces (with a neutral expression) and one full-length shot of their heads and bodies were taken using a Canon Powershot G6 digital camera from a height of 120 cm and a distance of 270 cm. For the full-length shot, the participants wore only their underwear (boxer shorts/trunks for men; brassiere and knickers for women). Biometric measurements of the participants' chest, shoulder, hip, and waist circumference and their height and weight were taken. Participants were also asked to give details about themselves and complete a short questionnaire that evaluated such variables as self-perceived attractiveness and masculinity of behaviour. These participants are subsequently referred to as 'models' to avoid confusion (Table 1).

2.2. Standardizing images

The images were standardized. Face images were normalized on interpupillary distance, and a mask was placed on the face images by outlining the face. The mask eliminated potentially confounding information from the participants' clothes or hair.

With the use of the software package Corel Paint 12, a rectangular mask (4 cm wide, running from just below the chin to just below the knees of each model) was placed on the images of the bodies. Models' underwear was coloured black to remove any potentially confounding information from the underwear and to make the underwear appear as similar as possible across models. Several female models had hair long enough to appear below chin level. Such hair was removed from the image.

2.3. Participants: image raters

Ratings by participants reporting to be homosexual or bisexual (among males, n=2; among females, n=1) were excluded from analyses, leaving a total of 127 men (mean age=22.72 years, S.D.=5.9) and 133 women (mean age=21.42 years, S.D.=3.7) who rated the images in this experiment.

Table 1
Descriptive statistics of the models used to create the study images

	Female				Male			
	Min.	Max.	Mean	S.D.	Min.	Max.	Mean	S.D.
Age (years)	20	28	22.0	2.62	18	27	21.5	2.95
Height (cm)	154.5	177.0	167.30	7.56	171.0	190.0	180.49	6.40
Weight (kg)	51.8	68.0	59.64	6.48	54.7	85.0	72.47	9.82
Body mass index	18.91	24.98	21.32	2.02	17.96	26.33	22.24	2.57
Waist (cm)	63.0	80.0	71.65	5.56	70.4	84.0	78.04	5.15
Hip (cm)	75.0	101.0	86.18	6.95	80.0	90.0	84.15	3.57
WHR	0.74	0.88	0.833	0.041	0.84	0.99	0.927	0.05
Chest (cm)	68.6	78.7	71.63	3.55	75.0	95.0	86.50	6.00
Around breast (cm)	86.4	96.5	91.19	3.27	–	–	–	–
Shoulder (cm)	94.0	104.0	98.75	4.02	103.0	123.0	113.80	6.84
Shoulder-to-hip ratio	1.01	1.25	1.15	0.07	1.25	1.51	1.35	0.08
Self-rated facial attractiveness	4	6	5.0	0.7	4	5	4.6	0.5
Self-rated body attractiveness	3	6	4.7	0.9	4	5	4.6	0.5

2.4. Materials and procedure

Rating of the images was done anonymously via the Internet using specially designed Web pages. Participants in the experiment were solicited by advertising on the University of Liverpool's electronic poster system and by sending the Web link to the experiment by electronic mail to potential participants from the University of Liverpool, the University of Bristol, and other people known personally to the authors. Participants were encouraged to forward the link to other people they knew. While such a snowballing procedure may possibly lead to a lack of independence in the residual errors of the analysis, it allowed the study to be conducted using a broad range of participants.

Participants were asked to provide information about themselves (age, sex, nationality, ethnicity, and sexuality) before rating the images. They were asked to rate images of the opposite sex for attractiveness. They were randomly assigned to rate all the images for either a short-term relationship or a long-term relationship. A short-term relationship was defined as follows: "You are looking for the type of person who would be attractive in a short-term relationship. This implies that the relationship may not last a long time. Examples of this type of relationship would include a single date accepted on the spur of the moment, an affair within a long-term relationship, and the possibility of a one-night stand." A long-term relationship was defined as follows: "You are looking for the type of person who would be attractive in a long-term relationship. Examples of this type of relationship would include someone you may want to move in with, someone you may consider leaving a current partner to be with, and someone you may, at some point, wish to marry (or enter into a relationship on similar grounds as marriage)."

Participants were shown the 10 body images sequentially in a randomized order and asked to rate the attractiveness of the images on a seven-point scale (1=*very unattractive*, 7=*very attractive*). They were also shown the face images in a randomized order (different from the order in which body images were presented) and asked to rate them on a seven-point scale. Whether participants saw the faces or the bodies first was randomized to avoid order effects. After this, participants were asked to rate the 10 body and face images together (again the images were presented in randomized order and different from the orders in which face and body images were presented).

The combined face and body images came from the same person and were presented side by side (i.e., not with the head on top of the body) to be consistent with the images used for the independent ratings of the face and the body. Presenting the combined image with the head on top of the body would have raised two problems: First, the face in such in an image would be much smaller than that in the image seen in the independent rating of the face, potentially making

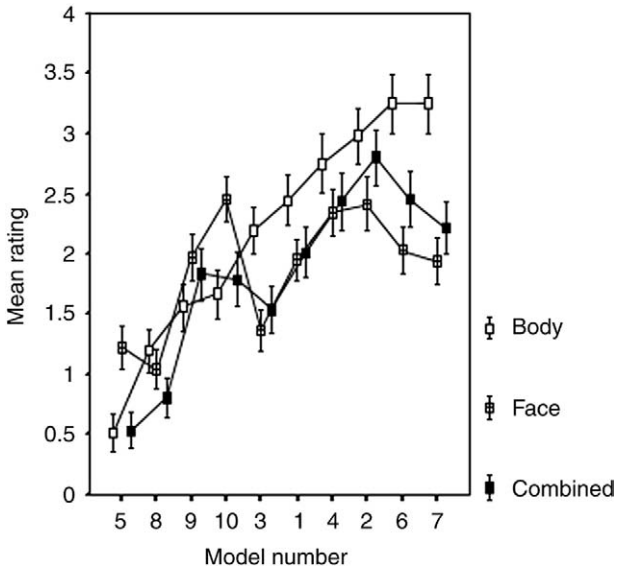

Fig. 1. Male ratings of images of female models (shown in order of increasing mean rating for body attractiveness).

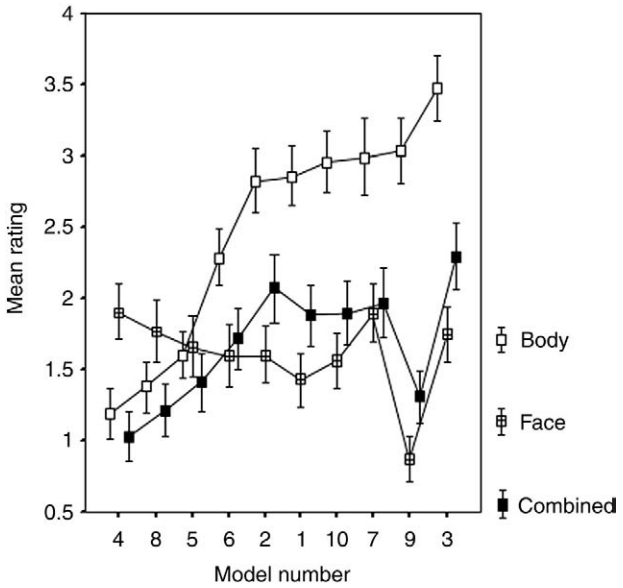

Fig. 2. Female ratings of images of male models (shown in order of increasing mean rating for body attractiveness).

the amount of information available from the face different in the two images. Second, as the face images were presented with a mask (as detailed above), displaying the combined image with the face on top of the body would have required making the models' hair visible, thus introducing extra information not available in the independent ratings. Furthermore, presenting the images side by side is not unrealistic as in real-life situations assessments of facial attractiveness are likely to made up close (where an accurate assessment of such things as body shape is not possible), while an assessment of bodily attractiveness is likely to be made from farther away (in which case facial attractiveness may not be accurately judged). In other words, while presenting the images side by side does not allow us to assess configurational effects, in many real-world situations, face attractiveness and body attractiveness may in fact be assessed separately.

To assess whether the mode of presentation of the face and body images drastically affected the assessment of the physical attractiveness of the models, we collected data from a separate group of individuals (female raters: n=34, mean age=22.6 years, S.D.=3.7; male raters: n=21, mean age=23.9 years, S.D.=3.5) who rated images of the models in their natural state (i.e., with the face on top of the body) for attractiveness. Mean ratings given to these images show extremely strong correlations (female images: r=.93, n=10, p<.001; male images: r=.78, n=10, p=.007) with the mean ratings given by participants in this study.

After finishing rating the images, participants were asked if they had completed the experiment honestly and if they had recognized any of the people seen in the images. All participants reported completing the experiment honestly, and no participant reported recognizing any of the people in the images.

3. Results

Mean ratings given to each model are shown in Figs. 1 and 2. Respondents' ratings of attractiveness were analysed using a univariate general linear model (GLM). The ratings given to the face and the body images separately were entered as covariates (predictors) of the dependent variable (rating given to the combined images). The model being viewed (1–10) was entered as a random factor, and the condition under which the images were being assessed (i.e., for a short-term relationship or a long-term relationship) was entered as a fixed factor.

3.1. Male ratings of female images

The GLM explained 50% of the variance in ratings given to the combined images. The ratings given independently to the face ($F_{1,\ 1257}$=306.33, p<.001) and the body ($F_{1,\ 1257}$=96.03, p<.001) were significant positive predictors of the ratings given to the combined images. Face ratings were stronger predictors (β=.484, p<.001, η_p^2=.20) of the combined image than were body ratings (β=.241, p<.001, η_p^2=.07). Ratings of the combined images were slightly higher under the short-term condition than under the long-term condition (β=.18, p<.001, η_p^2=.01). The combined

Table 2
Results of univariate GLM of male ratings of combined face and body images of females

	Type III sum of squares	*df*	*F*	*p*	Partial eta squared	*B*	S.E.	*t*	*p*
Corrected model	1197.44	12	105.90	<.001	.50				
Intercept	51.96	1	55.14	<.001	.04				
Condition[a]	9.75	1	10.35	.001	.01	.176	.06	3.22	.001
Model	100.03	9	11.80	<.001	.08				
Face rating	288.64	1	306.33	<.001	.20	.484	.03	17.50	<.001
Body rating	90.49	1	96.03	<.001	.07	.241	.03	9.80	<.001
Error	1184.43	1257							
Total	6686.00	1270							
Corrected total	2381.87	1269							

[a] Parameter estimate given relative to long-term condition.

Table 3
Results of univariate GLM of male ratings of combined face and body images of females (long-term and short-term conditions analysed separately)

	Type III sum of squares	*df*	*F*	*p*	Partial eta squared	*B*	S.E.	*t*	*p*
Short-term condition									
Corrected model	658.29	11	66.28	<.001	.53				
Intercept	23.74	1	26.29	<.001	.04				
Model	48.46	9	5.96	<.001	.08				
Face rating	127.61	1	141.33	<.001	.18	.450	.038	11.89	<.001
Body rating	87.97	1	97.43	<.001	.13	.326	.033	9.87	<.001
Error	585.11	648							
Total	3626.00	660							
Corrected total	1243.40	659							
Long-term condition									
Corrected model	555.83	11	52.29	<.001	.49				
Intercept	30.17	1	31.23	<.001	.05				
Model	62.82	9	7.22	<.001	.10				
Face rating	166.26	1	172.06	<.001	.22	.527	.040	13.12	<.001
Body rating	14.67	1	15.18	<.001	.03	.143	.037	3.90	<.001
Error	577.84	598							
Total	3060.00	610							
Corrected total	1133.68	609							

rating was also significantly affected by the model being viewed ($F_{9,\ 1257}$=11.80, p<.001, η_p^2=.08) (Table 2).

As the ratings differed under short- and long-term relationship conditions, the results were analysed separately. While the face rating was the best predictor of the combined rating under both short-term (β=.45, p<.001, η_p^2=.18) and long-term (β=.527, p<.001, η_p^2=.22) conditions, the effect of the body ratings was greater under the short-term condition (β=.326, p<.001, η_p^2=.13) than the long-term condition (β=.143, p<.001, η_p^2=.03). The effect of the model being viewed was similar under both conditions (short-term, η_p^2=.08; long-term, η_p^2=.10) (Table 3).

3.2. Female ratings of male images

The GLM explained 42% of the variance in the female ratings of the combined male images. The face ratings ($F_{1,\ 1317}$=307.53, p<.001) and the body ratings ($F_{1,\ 1317}$=202.90, p<.001) were both positive significant predictors of the ratings given to the combined images, with the face ratings having a stronger effect (β=.427, p<.001, η_p^2=.19) than the body ratings (β=.329, p<.001, η_p^2=.13). There was no difference in the ratings under short-term and long-term conditions ($F_{1,\ 1317}$=0.46, p=.496) (Table 4).

4. Discussion

Ratings of facial attractiveness were a better predictor than ratings of bodily attractiveness of the rating given to images of the face and body combined. This suggests that facial attractiveness is more important in people's evaluation of overall physical attractiveness than body attractiveness and therefore implies that facial attractiveness is more important than body attractiveness in human mate choice decisions. The results suggest that different types of information present in faces and bodies have led to the use of cues that give 'multiple messages' as to the attractiveness of prospective partners.

Our results cannot tell us why the face is more important than the body in judging attractiveness, but there a number of possibilities. As a greater number of physical features are

Table 4
Significant predictors of female ratings of combined face and body images of males

	Type III sum of squares	*df*	*F*	*p*	Partial eta squared	*B*	S.E.	*t*	*p*
Corrected model	919.42	12	79.21	<.001	.42				
Intercept	13.08	1	13.52	<.001	.01				
Condition[a]	0.45	1	0.46	.496	–	–.037	.05	−0.681	.496
Model	83.21	9	9.56	<.001	.06				
Face rating	297.47	1	307.53	<.001	.19	.427	.024	17.54	<.001
Body rating	196.27	1	202.90	<.001	.13	.329	.023	14.24	<.001
Error	1273.91	1317							
Total	5929.00	1330							
Corrected total	2193.33	1329							

[a] Parameter estimate given relative to long-term condition.

located within close proximity to one another in the face, slight developmental imperfections may be more easily detectable in faces, making them more honest indicators of underlying genetic quality than bodies. It could also be possible that the importance of attending to others' faces for social reasons (e.g., to assess intentions) has led to the face becoming what Barber (1995) has described as an 'arena for sexual selection.' More tests that analyse between competing hypotheses will need to be conducted before we can say why more importance seems to be attached to the face in assessing attractiveness.

The results show that the body is also important in determining physical attractiveness. Body cues are thought to provide a number of types of information in both sexes. Information about sexual maturity, the ability to produce children, and current pregnancy status is available in the bodies of females, and men could make use of such information to guide their decisions. Information about a man's physical strength and athleticism is present in his body, and such characteristics would have had an important bearing on his ability to acquire resources in ancestral environments, and although these factors may be less pertinent in a man's absolute ability to acquire resources in modern western societies, they may have an impact in such areas as social dominance, at least within socioeconomic groups.

Interestingly, the body was relatively more important in male ratings of female images under the short-term condition compared with the long-term condition. The effect of facial attractiveness was relatively constant under both conditions. This is consistent with the idea that the face and the body are signaling different aspects of female quality and do not represent just a single ornament of quality (Thornhill & Grammer, 1999). Signals of quality such as symmetry may be present in both the face and the body and cues to signal this may have evolved as back-up signals. However, our results suggest that other cues in the face and the body may have evolved as multiple messages. Further tests will be needed to determine exactly why the female body is relatively more important under the short-term condition, but it could be because the body is a more reliable signal than the face of features that would be more important in a short-term relationship, such as sexual maturity and immediate sexual receptivity.

No difference was found in female assessment of male physical attractiveness for the two types of relationships. This could be because assessment of physical attractiveness is not affected by which type of relationship a female is looking to pursue. Another possibility is that the perception of physical attractiveness does change depending on the type of relationship being sought but that the manipulation we tried (i.e., simply asking participants to rate attractiveness for a short-term relationship) did not affect the female participants in the same way it affected the male participants. Different methods of testing for a difference in ratings of physical attractiveness for short- and long-term relationships may prove valuable to confirm whether or not the integration of multiple cues of attractiveness changes as a function of the type of relationship being sought.

There is some evidence for a hierarchical interaction between facial attractiveness and bodily attractiveness in determining overall physical attractiveness, especially in female ratings of male bodies. The male models with the three lowest mean ratings of their bodies had mean combined face and body ratings lower than either the independent body ratings or the independent face ratings. This suggests that the body needs to be above a certain level of attractiveness before the overall physical attractiveness is rated at a higher level. There was no evidence for additive effects as the ratings given to the mean combined face and body scores were always lower than at least one of the mean independent ratings. However, these patterns are only suggestive as only a limited range of faces and bodies was used in this study. Further tests with a larger number of models would prove useful to test specific hypotheses about how information from faces and bodies are integrated.

The results obtained in this study suggest that facial attractiveness is more important than bodily attractiveness in determining overall physical attractiveness. While we used face and body images presented side by side, we found strong correlations between judgments made to face and body images that were split and those made to images in which the head was on the shoulders, suggesting our results would generalize to more natural stimuli. Furthermore, these results are also in accordance with those found by Peters et al. (2007) and confirm that their finding was not simply an artifact of a small number of participants rating clothed images. However, by using photographs, only static physical traits are directly observable. In real life, pertinent information may also be conveyed by assessing the dynamic aspects of physical traits. For example, the way a person moves may convey information about his or her physical coordination, physical fitness, weight, or social dominance. Personality traits may also be assessed by monitoring facial expressions. Recent work by Morrison, Gralewski, Campbell, and Penton-Voak (2007) has shown that movement may be important in the attractiveness of female faces, while the use of innovative motion capture technology has shown that dance may reveal the degree of fluctuating asymmetry in the dancer (Brown et al., 2005). Future research could make use of such technology to investigate the relative importance attached to the dynamic and static components of facial and bodily characteristics.

In conclusion, facial attractiveness seems to be more important than body attractiveness in judgments of human physical attractiveness for both sexes. This study highlights the importance of examining human mate choice behaviour within a framework of multiple cues and preferences. Humans appear to be almost unique in the vast array of traits that have been proposed to guide our mate choice decisions. Whether this is due to a research bias toward our own species, an artifact of tightly controlled experimental procedures, or our large brains and complex social behaviour is an important question. Understanding why multiple cues have evolved and how information from various traits and

from different sensory modalities over what are sometimes long periods are integrated will provide deeper insights into human mate choice behaviour. Such a perspective may also prove insightful in other domains of social behaviour where multiple cues and signals are used, such as the accurate detection of appropriate partners for reciprocal altruistic interactions (Brown & Moore, 2000; Oda, Hiraishi, & Matsumoto-Oda, 2006).

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