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ORIGINAL ARTICLE

Males Prefer a Larger Bust Size in Women Than Females Themselves: An Experimental Study on Female Bodily Attractiveness with Varying Weight, Bust Size, Waist Width, Hip Width, and Leg Length Independently

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Abstract What determines a female figure as attractive and is there a consensus of both sexes in judging female bodily attractiveness? To answer these questions, an extensive experiment was conducted using high-quality photographic stimulus material, several systematically varied figure parameters (weight, hip width, waist width, bust size, and leg length), and a large sample of 34,000 participants. The results showed that women prefer slightly wider hips, a narrower waist, and longer legs than men (highly significant but small effects). A clear difference was found with regard to the ideal bust size: 40% of men but only 25% of women preferred a large bust. The findings are discussed with respect to the changed role of women in Western industrialized countries who tend to concentrate on their career rather than on reproduction, and the effect of a curvaceous body with a large-sized bust on social perception.

Keywords Attractiveness · Bodily attractiveness · Sex differences · Figure · Waist-to-hip ratio · Bust size · Breast size

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Introduction

Attractiveness research has contributed to the scientific understanding of the physical attractiveness phenomena by identifying features of attractive faces and male and female bodies. These features are being discussed by evolutionary psychologists either to signal heritable fitness (e.g., health) or to increase mating success or both [1–9]. With regard to female bodily attractiveness, several determinants have been proposed: waist-to-hip ratio (WHR), body mass index (BMI), curvaceousness, and features like bust size or leg length.

The waist-to-hip ratio (WHR), an index of fat deposition, is calculated by comparing the circumference of the waist to the circumference of the hips. WHR is controlled by sex hormones and increases as women age [10, 11]. Some evidence exists of a relationship between a low WHR and a woman's reproductive potential [12, 13]. Many studies have shown that both men and women find a female WHR of 0.7 (respectively a low value) as the most attractive [4, 14–26].

However, the WHR hypothesis of women's attractiveness has often been criticized. For instance, there is the suggestion that (1) the relationship between low WHRs and health or fertility is not always positive, (2) there is cross-cultural variance in preferences, and (3) the WHR is used for between-category discrimination tasks (e.g., sex discrimination) rather than attractiveness judgments ([27]; reviews can be found in Swami et al. [28–30]). In addition, many studies that came to the result that WHR plays an important role in judgments of attractiveness or postulated an ideal of 0.7 have been criticized [31] because of their ecologically invalid and poorly measured stimulus material (in this context, the well-known stimuli of Singh have to be mentioned).

However, the most important argument against WHR may be that the WHR is confounded by body weight as measured by the body mass index (BMI), and it has been argued that the WHR is insignificant in relation to weight [32–38]. Here, the effect of the WHR may be explained by the existence of a correlation between WHR and BMI (for a detailed discussion of this methodological problem of covariation, see Tovee and Cornelisson [36]). Critics argue that the effect of increasing attractiveness is due to a low BMI or, more precisely, due to an ideal of slenderness. However, it has to be emphasized that the slenderness ideal exists mainly in Western societies [39, 40].

Other studies [41–46] have pointed out the role of curvaceousness with respect to androgenousness of a woman's body—a measure of femininity (hourglass versus tube)—in addition to body weight. In contrast to the WHR, curvaceousness not only relates to the waist—hip area but also to bust size. Recent research has supported the assumption that a large bust (especially in combination with a narrow waist) could raise the likelihood of a successful conception [47].

One subject nearly completely neglected by researchers so far is leg shape and leg length. This negligence comes as a surprise if we take into consideration that, first, models need to have very long legs and, second, that high heels, which visually lengthen legs, are one of the most used methods employed by women for increasing their attractiveness.

A longer leg length in relation to the torso is also associated with various life outcomes, for instance, reduced risk of coronary heart disease, diabetes resistance, low blood pressure, better cardiovascular profiles, and reduced risk of cancer [48–54]. It has also been speculated that a higher leg-to-body ratio could be either a sexually dimorphic feature [55] or (because peak growth occurs during adolescence) a cue of youthfulness [56, 57]. Thus, newer studies have shown that long legs, i.e., a high leg-to-body ratio, in female figures increase attractiveness [56, 58]. However, there are cross-cultural differences [56].

The question of whether there is a difference between the sexes in the perception of beauty is for many attractiveness researchers a question of lower interest. Many of them present their stimulus material only to the opposite sex (e.g., female stimuli for male observers), assuming that attractiveness judgments have a biological background anyway. In fact, a considerable sex difference in perception of attractiveness was often not found. A possible explanation is the mate selection theory [36, 59]. It predicts that women have a very precise and accurate idea of what men find attractive and vice versa. This allows them to judge their own relative value with respect to their peer group and match this value with the value of a prospective mate. For this reason, ratings of the female images by men and women might not produce any sex differences. However, several studies have been able to show such differences [60, 61].

Although in Western cultures both sexes seem to find a female WHR of about 0.7 (a low WHR) and a low BMI most attractive, opinions about the ideal bust size differ considerably. Several experimental studies have shown that men prefer a larger female bust than women [62–67]. All these experiments used schematic figures (line drawings or silhouettes) as stimulus material.

Equally interesting are some nonexperimental studies that, albeit less controlled, may have greater ecological validity. These investigations share common ground insofar as they compare body measurements of idealized women who appear in various types of media that appeal to different target groups. Barber [42] was able to show that over two decades, centerfold models of the *Playboy* magazine (who should appeal to male readers) and winners of the Miss America contest had a larger bust-to-waist ratio than models in *Vogue* magazine (who should appeal to female readers). Similar results were obtained by Byrd-Bredbenner et al. [68] who found that *Playboy* models tended to have the largest bust size and fashion models the smallest (two other groups were the Miss America Pageant winners and the control group of "normal" women). A media analysis reported by Grammer [69] showed that pinup girls in adult magazines for men in Japan, United States, and Germany had a larger bust-to-waist ratio than models and display dummies (who should target women).

To investigate the ideal of beauty, we chose an experimental design for the present study. However, in contrast to most previous experimental studies using stimuli with varied body features, photo-realistic figures instead of line drawings and silhouettes were used as stimulus material. For this, a frontal view photo of a woman was taken. Each of the body features of weight, hip, waist, bust, and legs were altered to three different shapes. This resulted in 243 ($= 3^5$) variants from which participants could choose their ideal of beauty. Apart from a general preference for particular body features, a further point of interest was to what extent sex differences existed with regard to an ideal female body.

Methods

Production of Stimulus Material

For the production of the stimulus material, a 24-year-old woman with normal body proportions was photographed in a frontal view. We decided upon a photo of a model wearing swimwear instead of being naked to emphasize the respectable and scientific background of the experiment

and to avoid any erotic and salacious appearance. Based on this photo, 243 versions of the figure were generated by using morphing software (MorphMan 4.0) and image processing software (Adobe Photoshop). Five figure parameters were manipulated and three characteristic variations were available for each parameter:

1. Weight: underweight, normal, overweight
2. Hip width: narrow, medium, wide
3. Waist width: narrow, medium, wide
4. Bust size: small, medium, large
5. Leg length: normal, long, very long

Weight was altered by using the medium-sized figure as a starting reference. The whole figure was either made narrower or wider by scaling the image by a margin of 7%. Hip and waist widths were morphed by 6.5% with respect to the medium-sized figure, making them either narrower or wider. For bust size alteration, a technique was used that combined both morphing and classic photo retouching which gave the bust a flatter or a more voluminous appearance.

The leg length was increased with respect to the original photo by either 5 or 10%. During the experiment, the size of the face remained constant. Each feature was combined with every other feature independent of each other and yielded a total of 243 figure versions ($3*3*3*3*3 = 3^5 = 243$).

Measuring Stimulus Figures

Computer software determined the following body measurements on all figure versions created: shoulder width, bust width, underbust width, waist width, venter width, hip width, thigh width, and leg length (Fig. 1). The venter width of the abdomen was defined at the level of the umbilicus. Hip width was determined halfway between the umbilicus and groin. The leg length was defined as the distance from groin to big toe.

Since two-dimensional computer graphics were used, no circumferences were measured. Instead, visible distances in pixels (e.g., the visible waist width instead of waist circumference) were used (for a methodological discussion see [70]). For standardization purposes, all measurements were standardized to a figure's body height. For example, a waist width of 134 pixels and a body height of 1034 pixels results in a waist width of 12.96 (= 13% of body height). Based on these measurements, the following ratios were calculated: bust-to-underbust ratio (BUBR), waist-to-hip ratio (WHR), bust-to-waist ratio (BWR), bust-to-hip ratio (BHR), waist-to-venter ratio (WVR), venter-to-hip ratio (VHR), waist-to-leg ratio (WLR), hip-to-leg ratio (HLR), shoulder-to-hip ratio (SHR), and an androgyny index. For

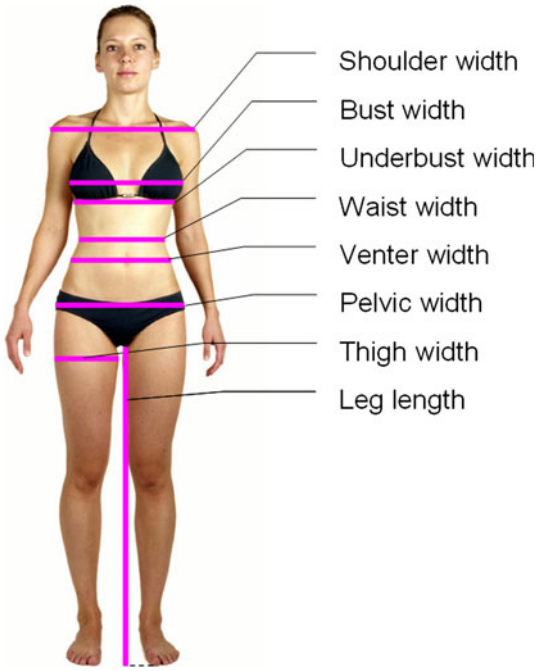

Fig. 1 The measured body features

calculating all ratios, the measurements of visible distances were used (for instance, the waist-to-hip ratio is the visible waist measurement divided by the visible hip measurement). The androgyny index is the measurement of a figure's curvaceousness and was calculated according to Voracek and Fisher [45] by using the following formula:

$$\frac{\text{waist width}}{\sqrt{(\text{bust width} \times \text{hip width})}}$$

Method of Data Collection

The stimulus material was presented via a web-based interactive user interface ("body generator"), where participants could manipulate the appearance of a woman's figure by adjusting the above-mentioned five parameters (see http://www.uni-regensburg.de/Fakultaeten/phil_Fak_II/Psychologie/Psy_II/beautycheck/english/experimente/experimente.htm for the experiment and the complete stimulus material, Fig. 2). By clicking on a button, the featured female figure changes its appearance. Participants were instructed to adjust the figure's appearance to their own beauty ideal (Fig. 3). The initial figure displayed was randomly selected by the program. The duration of data collection was 14 months. On average, 81 persons per day participated.

Participants

A total of 34,015 participants (16,686 men [49.1%] and 17,329 women [50.9%]) aged between 15 and 98 years

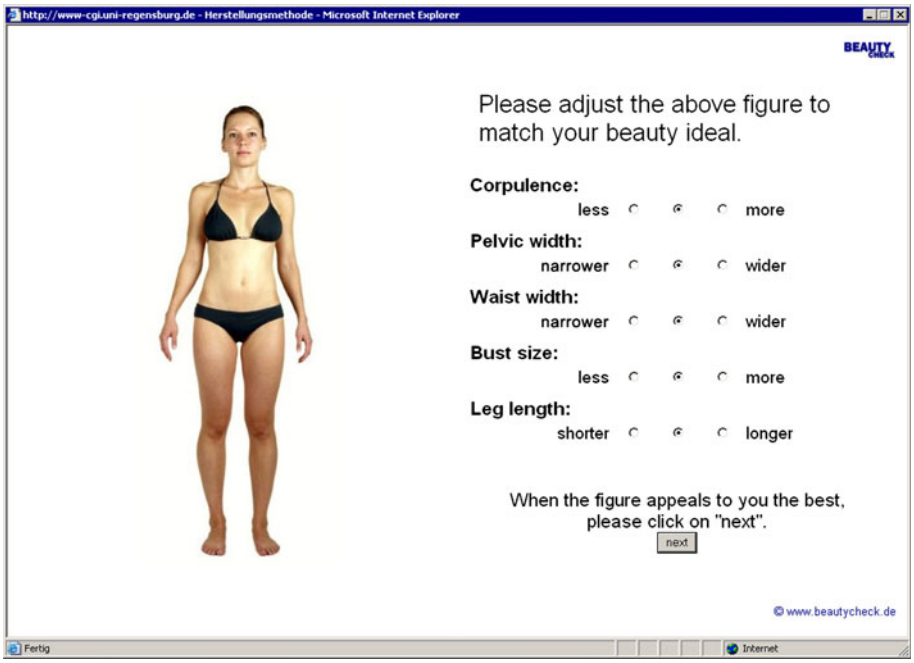

Fig. 2 Screenshot of the "Body generator" from the web-based experiment used for data collection (see http://www.uni-regensburg.de/Fakultaeten/phil_Fak_II/Psychologie/Psy_II/beautycheck/english/experimente/experimente.htm)

Fig. 3 A stimulus figure with medium bust size compared to a stimulus figure with large bust size. Large-busted figures were highly evaluated, especially by male participants. The other bodily features judged as ideal most frequently by both sexes were medium weight, narrow waist, medium hip, and very long legs

(people younger than 15 years were excluded from the study) participated in the experiment. The average age of the participants was 27.3 years (SD = 9.9). The study population consisted of 93.5% Caucasians, 1.6% Asians, 0.6% Black, and 4.3% of mixed origin or other ethnic groups. Most participants were German (79.4%), 5.7% were Austrian, 6.9% were Swiss, and 8.0% were another nationality. All participants spoke German because at that time the experiment was available only in German. On the one hand, the restriction to the German language does not exhaust the potential of a web-based study, that is, to target people all over the world. In addition, conclusions regarding other nations are not possible. On the other hand, this has the advantage in that German-speaking participants from Germany, Austria, and Switzerland have the same cultural background. A web-based experiment in English available to people all over the world would bring the participants' cultural background as an additional independent variable into the study, which is not easily handled.

Statistics

Data were evaluated in two different ways. On the one hand, the data were available in categorical form. The figure chosen by the participant had either a narrow, medium, or wide waist. The same applied to the other four manipulated parameters with three different shapes each. These categorical data were tested with regard to sex differences with χ^2 tests (two sexes by three shapes). In addition, data on the body measurements of the figure favored by the participants were also available in metric form, since every figure was measured in terms of the above-mentioned body measurements. Possible sex

differences were checked using t tests. The analysis of the precise body measurements is highly important because one and the same categorical feature may appear visually different depending on the context of the other body features. For instance, a narrow waist may look ideal in combination with medium weight or medium leg length but look too narrow with a very slender figure or very long legs. Also, the analysis of the figure measurements allowed the evaluation of the numerous calculated quotients. Thus, the question of whether men prefer a different waist-to-hip ratio than women may be answered. Two-tailed tests were used for each evaluation.

Results

First, the data were evaluated for the frequency with which participants selected particular body features in creating the ideal figure using the interactive web-based interface. For each feature, χ^2 tests were calculated (two sexes by three shapes). Results are presented in Tables 1, 2, 3, 4, 5. As the tables show, preferences differ for each of the five body features. Women prefer slightly wider hips, a narrower waist, and longer legs than men. A clear difference was found with regard to the ideal bust size. Forty percent of men but only 25% of women preferred a large bust.

Table 1 Gender differences (%) in preference for weight

	Weight			
	Underweight (%)	Normal (%)	Overweight (%)	Total (%)
Females	38 (−0.6)	49 (−2.4)	13 (6.1)	100
Males	39 (0.6)	52 (2.4)	9.8 (−6.2)	100
Total	38	50	11	100

Standard residues are listed in parentheses; $N = 34{,}015$ persons; χ^2 (2, 34015) = 87.52, $P < 0.001$

Meaning of standard residues: ≥ 2.0 or $\leq -2.0 \rightarrow P < 0.05$; ≥ 2.6 or $\leq -2.6 \rightarrow P < 0.01$; ≥ 3.3 or $\leq -3.3 \rightarrow P < 0.001$

Table 2 Gender differences (%) in preference for hip width

	Hip width			
	Narrow (%)	Middle (%)	Wide (%)	Total (%)
Females	18 (−4.3)	50 (−0.7)	32 (4.3)	100
Males	21 (4.4)	51 (0.7)	28 (−4.4)	100
Total	20	50	30	100

Standard residues are listed in parentheses; $N = 34{,}015$ persons; χ^2 (2, 34015) = 76.07, $P < 0.001$

Meaning of standard residues: ≥ 2.0 or $\leq -2.0 \rightarrow P < 0.05$; ≥ 2.6 or $\leq -2.6 \rightarrow P < 0.01$; ≥ 3.3 or $\leq -3.3 \rightarrow P < 0.001$

Table 3 Gender differences (%) in preference for waist width

	Waist width			
	Narrow (%)	Middle (%)	Wide (%)	Total (%)
Females	63 (5.5)	32 (−7.0)	5.1 (−0.5)	100.0
Males	56 (−5.6)	38 (7.2)	5.3 (0.5)	100
Total	60	35	5.2	100

Standard residues are listed in parentheses; $N = 34{,}015$ persons; χ^2 (2, 34015) = 163.80, $P < 0.001$

Meaning of standard residues: ≥ 2.0 or $\leq -2.0 \rightarrow P < 0.05$; ≥ 2.6 or $\leq -2.6 \rightarrow P < 0.01$; ≥ 3.3 or $\leq -3.3 \rightarrow P < 0.001$

Table 4 Gender differences (%) in preference for bust size

	Bust size			Total (%)
	Small (%)	Middle (%)	Large (%)	
Females	14 (7.5)	61 (9.1)	25 (−16.4)	100
Males	9.8 (−7.6)	50 (−9.2)	40 (16.7)	100
Total	12	56	33	100

Standard residues are listed in parentheses; $N = 34{,}015$ persons; χ^2 (2, 34015) = 826.54, $P < 0.001$

Meaning of standard residues: ≥ 2.0 or $\leq -2.0 \rightarrow P < 0.05$; ≥ 2.6 or $\leq -2.6 \rightarrow P < 0.01$; ≥ 3.3 or $\leq -3.3 \rightarrow P < 0.001$

Table 5 Gender differences (%) in preference for leg length

	Leg length			Total (%)
	Normal (%)	Long (%)	Very long (%)	
Females	11 (−0.7)	34 (−2.8)	55 (2.6)	100
Males	11 (0.7)	37 (2.9)	52 (−2.6)	100
Total	11	36	54	100

Standard residues are listed in parentheses; $N = 34{,}015$ persons; χ^2 (2, 34015) = 30.82, $P < 0.001$

Meaning of standard residues: ≥ 2.0 or $\leq -2.0 \rightarrow P < 0.05$; ≥ 2.6 or $\leq -2.6 \rightarrow P < 0.01$; ≥ 3.3 or $\leq -3.3 \rightarrow P < 0.001$

Second, data on the measurement of the 243 figures were evaluated. Since this evaluation also included ratios, these data provided additional information on the interaction between particular body features. This information is necessary because a particular proportion might appear similar despite differing individual body measurements, for example, waist width and hip width. A WHR of 0.7, for instance, can result from either medium-sized hips and a narrow waist or very wide hips and a wide waist. Table 6 gives the evaluation of the measurements of the figures chosen by the participants. The table shows that the calculated t tests are significant or highly significant, i.e., men, on average, have different figure preferences than women. However, effect sizes are minimal. The biggest differences occur in two measurements involving bust size, i.e.,

Table 6 Gender differences in preference for various standardized body measurements (percentage of body height) and ratios

Measurement	Gender	*N*	M	SD	Effect size	*t*	*p*
Bust width (metric)[a]	Females	17,329	17.141	0.915	−0.05	−5.00	<0.001
	Males	16,686	17.189	0.865			
Underbust width (metric)[a]	Females	17,329	14.726	0.741	0.05	4.51	<0.001
	Males	16,686	14.691	0.689			
Waist width (metric)[a]	Females	17,329	13.344	0.940	−0.03	−2.44	0.015
	Males	16,686	13.368	0.890			
Venter width (metric)[a]	Females	17,329	15.419	0.971	0.03	2.80	0.005
	Males	16,686	15.390	0.912			
Hip width (metric)[a]	Females	17,329	19.329	1.250	0.09	−5.00	<0.001
	Males	16,686	19.224	1.187			
Thigh width (metric)[a]	Females	17,329	9.600	0.526	0.08	4.51	<0.001
	Males	16,686	9.558	0.494			
Leg length (metric)[a]	Females	17,329	47.550	0.633	0.05	−2.44	<0.001
	Males	16,686	47.519	0.634			
Bust-to-underbust ratio (BUBR)	Females	17,329	1.164	0.020	−0.30	2.80	<0.001
	Males	16,686	1.170	0.021			
Waist-to-hip ratio (WHR)	Females	17,329	0.691	0.032	−0.16	7.99	<0.001
	Males	16,686	0.696	0.033			
Bust-to-waist ratio (BWR)	Females	17,329	1.287	0.052	−0.02	7.53	0.03
	Males	16,686	1.288	0.054			
Bust-to-hip ratio (BHR)	Females	17,329	0.888	0.034	−0.22	4.43	<0.001
	Males	16,686	0.895	0.033			
Waist-to-venter ratio (WVR)	Females	17,329	0.865	0.022	−0.14	−27.43	<0.001
	Males	16,686	0.869	0.023			
Venter-to-hip ratio (VHR)	Females	17,329	0.798	0.017	−0.17	−14.49	<0.001
	Males	16,686	0.801	0.018			
Waist-to-leg ratio (WLR)	Females	17,329	0.281	0.021	−0.03	−2.17	0.003
	Males	16,686	0.281	0.020			
Hip-to-leg ratio (HLR)	Females	17,329	0.334	0.023	0.08	−20.29	<0.001
	Males	16,686	0.333	0.021			
Shoulder-to-hip ratio (SHR)	Females	17,329	1.126	0.040	−0.09	−13.19	<0.001
	Males	16,686	1.130	0.041			
Androgyny index	Females	17,329	0.733	0.029	−0.08	−15.40	<0.001
	Males	16,686	0.736	0.030			

$N = 34{,}015$ persons; two-tailed *t* tests were used

[a] The dependent variable has been standardized, i.e., the measurement has been divided by the body height, e.g., the mean waist width is about 13.3% of body height

bust-to-underbust ratio and bust-to-hip ratio. Thus, the *t* tests confirm the findings of the χ^2 tests, which showed that the main sex difference exists in the evaluation of the ideal bust size: men prefer a larger bust in women than females themselves.

Discussion

The present study confirms several previous findings on female bodily attractiveness [33, 34, 36, 37]. The majority of participants prefer female figures of medium or low body weight with medium-sized hips and a narrow waist. Of all five features investigated, hip width is the feature with the least recognizable trend. This fact leads to the assumption that hip width is less important for female attractiveness than other body features, which is in contrast to the waist-to-hip ratio. Here, a low WHR with an average of 0.7 was preferred, which confirms the findings of previous studies [14–19, 25]. However, it should be kept in mind that in the present study, the WHR was established in a different way. Here, the WHR was determined as visible

WHR, i.e., as a quotient of visible distances and not as a quotient of body circumferences measured with a tape measure (see the "Methods" section). For this reason, our study is not completely comparable to studies that used circumferences [71, 72]. On the other hand, it should be mentioned that most previous investigations involved neither measurements nor calculations but only varying line drawings, which were merely assumed (respectively claimed) to have a WHR of 0.7, 0.8, 0.9, etc. [16, 18, 19, 24, 73–75].

The data additionally show the existence of another important variable that so far (except from three recent articles) has been largely ignored by investigations into attractiveness: leg length. A clear preference for very long legs could be proven although the medium variable in our study already represented a longer version than the original (an artificially shortened leg version was not even tested). Only 11% of participants preferred a regular leg length, whereas 54% favored a leg length that in case of a body height of 170 cm would correspond to a leg lengthening of 6 cm, a difference that corresponds to the average height of high-heeled shoes.

The majority considered a medium-sized bust as the ideal bust size. A direct comparison of the small-sized and the large-sized bust showed a three times higher preference of the large bust. The most interesting part of this comparison, however, is the clear difference between male and female participants. Forty percent of men prefer a large bust size in comparison to only 25% of women. This difference is also visible in the *t*-test data that show that men prefer a higher bust-to-underbust ratio as well as a higher bust-to-hip ratio.

Hence, our results confirm not only previous experimental findings [62–67, 76, 77] but also the findings of other studies [42, 68, 69] that showed that female figures with a larger bust size are looked upon more favorably by men than by women. This result is surprising since it contradicts the mate selection theory [59]. This theory states that men and women do not differ in their evaluation of physical attractiveness. Therefore, it should be an advantage for women to have the same ideal as men, because it allows them to judge their own relative mate value with respect to their peer group and match this value with the value of a prospective mate. In other words, a woman with a large-sized bust who considers a medium-sized bust as the ideal size, underestimates her own attractiveness to men and hence underestimates her actual mate value. Therefore, she will tend to be content with a lower mate value of a potential partner and thus gives away a fitness advantage.

Why do men prefer a larger bust size than women? This question might be answered more easily from another perspective. One could also ask: Why do women prefer a smaller bust size than men? From this perspective, the male ideal might be looked upon as a norm that emerged during evolution to the ideal valid today. In this view, the preference of a medium-sized or large-sized bust is based on partner choice and reproduction; hence, it is more or less hereditary and might have been adaptive in an ancestral environment. The divergence of women's preference might be explained by sociocultural factors. This approach seems to consider too narrowly that modern women comprehend an optimal figure merely as a body with maximal sexual attractiveness.

It is self-evident that women want to be noticed as positively as possible by their outward appearance—not only for sexual reasons. In reality, experimental studies show that women with a large bust are considered less intelligent and less competent [78, 79].

Studies about changes of the ideal female figure during the last century clearly demonstrate a connection between the curvaceousness of an ideal figure and sociodemographic and economic factors [41, 80]. Barber [42, p. 451f] showed that

> …curvaceousness of the female standard declined with economic growth and participation by women in education and in the labor force. […] Similarly, […] curvaceousness decreases as the proportion of women enrolled in higher education and receiving degrees increases. […] Curvaceousness also declined as birth rate decreased and women shifted their efforts away from reproduction towards careers. Similarly, curvaceousness declined as the proportion of unmarried women in the population aged 20–24 years increased, suggesting that careers may take precedence over marriage.

As curvaceousness has been operationalized by the bust-to-waist ratio, a smaller bust simultaneously means a less curvaceous figure. Of course, the type of figure we find attractive is also influenced by cultural factors [40, 81–90]. The role of women in Western industrialized countries has changed considerably during the past decades, and the simultaneous increase in emancipation and economic independence of women might have resulted in a slight shift of their priorities. For this reason, women tend to favor a more androgynous figure since it seems to result in attribution of career-relevant qualities such as intelligence and competence. Women do not seem to mind a lower sexual attractiveness to men, which is much easier nowadays because of their new economic independence.

To test this hypothesis, specific studies—similar to the investigations about facial attractiveness that have a 30-year tradition—should be conducted that investigate the influence of bust size on attributing various personality traits. A study design with a controlled manipulation of the

bust size (where all other features remain unchanged) is preferable to a purely correlative design. Of course for these experiments photo-realistic stimulus material is necessary; line drawings and silhouettes that are so popular among attractiveness researchers cannot be used. As a matter of course, both sexes should be included as participants since to ask only men about female attractiveness, as do some studies [18, 24, 91], is too short-sighted and would exclude many interesting aspects from the beginning. Attractiveness obviously means more to people than being as "sexy" as possible to a potential partner of the opposite sex. People seem to want to optimize their outward appearance in an integral sense, including the signaling of certain desired characteristics or their pretension. The way in which concrete facial or body features influence this social perception represents an interesting challenge for future attractiveness investigations.

Conflict of interest None.

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