

Gentle-men prefer faces: Intelligence, life history strategy, and sexual preference for attractive faces over attractive breasts, buttocks, and legs

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We utilised data from the OkCupid dating site to study preferences for body parts in attraction judgements. We found that most people (71%) have a stated preference for faces, with non-Europeans finding other parts more important: lower parts (“butt/legs”; 8%), chest (“chest/breasts”; 3%), and Other (18%). We regressed these preferences on likely causal variables. We found that slower life history speed, female sex, and higher intelligence predict preference for faces and negatively for buttocks/legs/chest, replicating previous research. We further found that most non-European ethnicities have a stronger preference for buttocks and legs, in particular Africans, Hispanics, and Amerindians (Native Americans). We explored how these patterns may help to explain cultural differences in mating display for different body parts and how they may be explicable in evolutionary terms.

Keywords: attractiveness; body parts; breasts; ethnicity; race

Anecdotally, males appear to vary with regard to which parts of the female anatomy they find the most attractive. In the romance novel *A Fated Night* (Dane, 2016), the author tells us that, “Someone is a breast man. Not every man could be pigeonholed into one of many categories, but Lana definitely knew how to play up to a breast man, a leg man, an ass man...” In his memoir *The Jukebox of My Life* (Wallace-Barnhill, 2019), a retired professor of medicine and psychologist observes, “guys usually report being an ass man, a leg man, or a breast man. I was definitely a leg man...” Some men appear to prize a “pretty face” over all other considerations. In the bestselling novel *The Hiding Place* we discover that: “Some men joked about being a legs or a breast man; Laird had been a face man” (Harper, 2018). However, for other men, the face is far less important than the nature of the body: “He claimed if a girl had nice legs this was the fountain on which the rest of her could be judged. You could overlook a lot more, even a not too pretty face...” we discover of a character in the military-themed novel *Ho! Ho! Weekend Warrior* (Borick, 2005). In male sexist slang, a female with an attractive body but an unattractive face is known as a BOBFOC (“Body off Baywatch, Face off Crimewatch”). Crimewatch was a television program in the UK in which unsolved crimes were reconstructed such that the public might be able to help. The opposite is a “Butterbody” as in, “She has a pretty face, but her body!” (Appelbaum & Pittman, 2004).

Certainly, males are evolved to be attracted to the female face, and also to her various secondary sexual characteristics, such as breasts and buttocks. Indeed, there is evidence, from eye-tracking analysis, that men look first at breasts and Waist-to-Hip Ratio and only then at face and lower body (Das & Relajo-Howell, 2021; Dixson et al., 2011a; 2011b). Studies have noted that these are cues of genetic health, genetic similarity (and thus germane to inclusive fitness), hormone levels and fertility and even of personality (e.g., Little et al., 2011; Steiner, 1980). They have been found to be relatively weak cues of immune-function, health and so forth, but, nevertheless, they are cues of these traits (Jones et al., 2021; Jones et al., 2022). This casts considerable doubt on the “halo effect” – that good-looking people are assumed to be healthier, for example – because this relationship is objectively demonstrable.

The buttocks, as part of the Waist to Hip Ratio, for example, are a particularly important indicator of female fertility (Singh et al., 2010). Life History Strategy (LHS) refers to the spectrum on which we all sit ranging from a fast LHS, in which we are evolved to an unstable yet easy ecology (easy in the sense that food is readily available and basic needs are met) in which we are thus adapted to “live fast, die young”, and thus invest energy in copulation, to a slow LHS. This is a harsh, competitive and stable ecology in which we divert energy away from copulation and towards nurture, such that our offspring can better compete and better survive. In that intelligence – the ability to solve cognitive problems – helps one in a competitive ecology this, along with a nurturing and pro-social personality, is associated with slow LHS, although there is some nuance in this regard (Figueredo & Woodley of Menie, 2017). Those who follow a slow LHS tend not only to have a more pro-social personality but also to physically develop later, go through puberty later, have fewer sexual partners, be less likely to divorce, have lower levels of testosterone and even go through the menopause later (see Dutton, 2020).¹

In a fast LHS ecology, to the extent that a male is selective, he will select for evidence of genetic health, creating, among females, an arms-race to showcase this via the growing of large sexual ornaments (or ornaments that otherwise imply genetic health such as an optimally small waist); these showcasing the genetic health required to grow them in the face of disease and other environmental insults. Thus, as a proxy for a fast LHS, it has been found that sociosexual males find large breasts particularly attractive (Zelazniewicz, & Pawlowski, 2011). By contrast, males who are low in sociosexuality prefer smaller breasts and smaller buttocks (Sewell, 2013; Steiner, 1980). This may be because such males are attracted to slow LH strategists and we would expect such females, with limited bio-energetic resources, to direct energy away from secondary sexual characteristics and towards nurturing abilities and other slow LHS mental traits. We might even expect slow LHS men to be less interested in secondary sexual characteristics and more interested in the face, to the extent that the face indicates personality and genetic similarity (Little et al., 2011), with genetic similarity tending to create stronger bonds and, thus, the better nurturing of children and of each other (see Rushton, 2005). Indeed, it has been found that men prioritise facial cues in long-term mating contexts, but physical cues in short-term mating contexts, based on a study of 381 students (Confer et al., 2010). One study, where males rated females, found that: “Faces significantly

¹ It should be emphasised that there is on-going debate about how to define different Life History Strategies and, thus, other researchers may define these differences slightly differently (see Frankenhuys & Nettle, 2020, for further discussion).

influenced ratings of intelligence, sociability, and morality, whereas bodies had a significant effect on ratings of intelligence and sociability” (Alicke et al., 1986). However, there is a positive correlation between ratings of bodily and facial attractiveness, implying that, overall, both are indications of genetic quality (Thornhill & Grammer, 1999).

Indeed, there is evidence of racial differences in how attractive different body parts are felt to be. Even controlling for education and other social variables, Black males are the most attracted to “very large” breasts whereas East Asians are the least attracted to these (Sewell, 2013). Black males prefer large buttocks, White males prefer small, firm buttocks, and East Asians prefer particularly small buttocks (Belgrave & Allison, 2009, p. 226; Wang et al., 2015). This would potentially be congruous with evidence that there are average race differences in Life History speed (Rushton, 1995). This is a much criticised idea (see Dutton, 2018a), but the finding has since been replicated on a very large number of indicators and the criticisms of the model have been responded to in detail (see Dutton, 2020).

We decided to test these possible associations using the large OkCupid Dataset (Kirkegaard & Bjerrekær, 2016), and thus in some cases, we attempted to replicate findings gleaned with relatively small sample sizes (e.g., Confer et al., 2010). These data have previously been found to replicate a number of salient findings including the negative relationship between religiosity and intelligence (Kirkegaard & Lasker, 2020), the negative correlation between criminality and intelligence (Kirkegaard, 2018), the relationship between attachment style and romantic preferences (Figueroa, 2018), the Life History factor itself (Hauser, 2018), and female greater selectiveness in relation to potential romantic partners (DiPiero, 2018). As such, these data appear to be sufficiently reliable and ecologically valid. We specifically wanted to understand the correlates and potential causes of whether a male was most attracted to breasts, buttocks, legs, or face.

METHOD

As stated, we employed data from the OkCupid project, which was comprised of data already freely available online (Kirkegaard & Bjerrekær, 2016).² As such, ethical approval for our study was not required, and those who filled out the OkCupid surveys knew that the information would be freely available online. Most of the sample is from English-speaking (Anglophone) countries (~85%), but it also has a significant number from other Western European countries, such as Germany. The sample was almost entirely based in Western countries (~95%). The total sample size is 68,371; however, there is extensive non-random missing data. This is because most users did not fill out the entire set of questions on the website, but rather a subset. Questions were generally shown in an order determined by how many people had answered the question already. Users were also allowed to skip questions and to answer them privately. If they were answered privately, their answers were not included in this dataset. It is obviously likely that users were somewhat selective with regard to what they answered publicly, but prior research based on this dataset indicates this is not a major concern for its validity (Kirkegaard, 2018).

In terms of variables present, there are over 2,500 variables; mainly questions that have 2–4 answer options. We searched the dataset for items that were relevant to this study. We measured body preference using item (q23120) “Which is most important to you in determining attractiveness?” with the answer options being “face/smile” (71%), “butt/legs” (8%), “chest/breasts” (3%), and “other” (18%). The sample size for this item is 23,911. We measured life history speed using two items. The first (q41953, $n = 48,614$) asked “About how long do you want your next relationship to last?” with options “one night” (2%), “a few months to a year” (29%), “several years” (27%), and “the rest of my life” (42%). The second (q20021, $n = 40,763$) asked “Which of these options most closely describes what you’re looking for in your next relationship?” with options “Someone to come home to” (59%), “Someone to go out with” (39%), and “Someone for tonight” (3%). The life history score was calculated by the item response theory of these two items, carried out using the mirt package (Chalmers et al., 2020) and standardised to the full sample. Intelligence was measured as in

² Some researchers aver such data should not be used, as it was taken from the internet (Zook et al., 2017). This is a legitimate debate. We happen to disagree. Such data is anonymous, freely available and of great scientific interest, in much the same way that Google data is, and this has been analysed in depth by researchers, including its sexual dimensions (e.g., Ogas & Gaddam, 2012). Moreover, those that filled in the surveys knew that they were placing their (anonymous) information online, such that anyone could analyse it.

the prior studies based on a set of 14 items (Kirkegaard & Bjerrekær, 2016) and standardised to the White subsample for comparison purposes.

We additionally used demographic data from the profiles which provided race/ethnicity (White 70%, Mixed 9%, Asian 6%, Hispanic 5%, Black (African) 5%, Other 3%, Indian 1%, Middle Eastern 1%, Native American (Amerindian) 0.3%, Pacific Islander (Polynesian) 0.3%), and sexual orientation (Straight 87%, Bisexual 7%, Gay 5%, and all remaining options and combinations <1%), sex (man 61%, woman 39%, remaining options <1%) and age ($\bar{x} = 32$, $SD = 8$).

All analyses were conducted using R (4.1.2). The R notebook and high-quality figures are available at OSF.

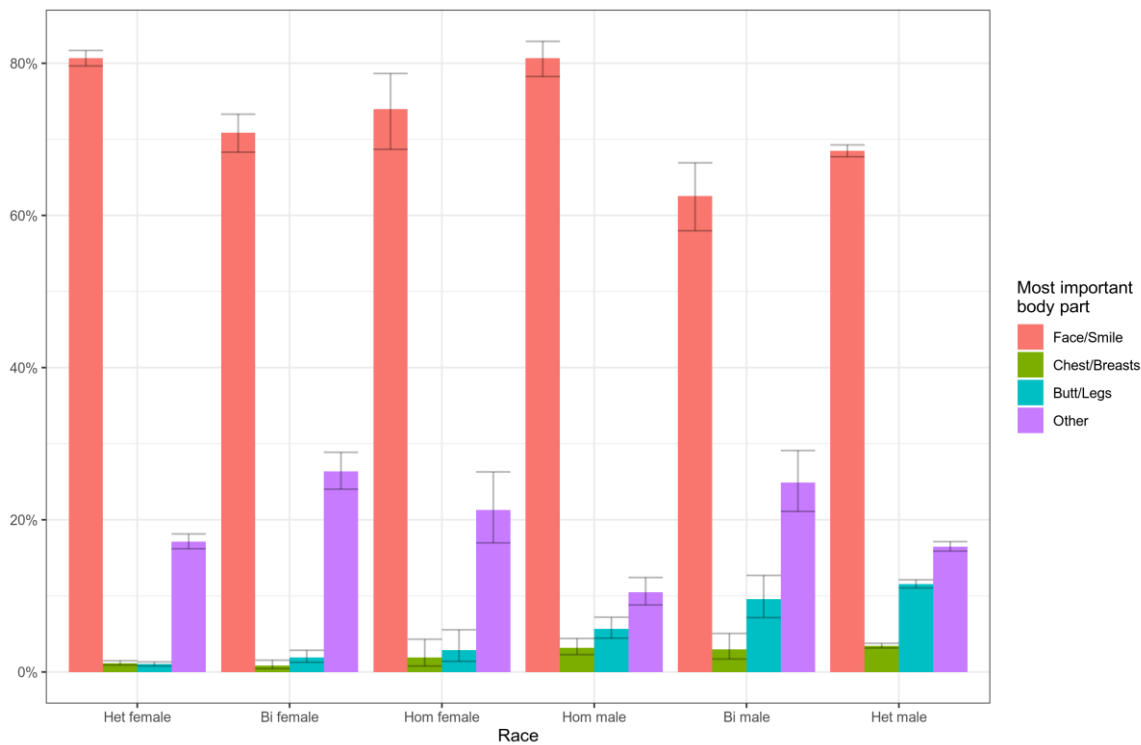
RESULTS

Our main results are based on logistic regression models to predict a given subject's preference for body parts using the other variables as predictors. Due to the small proportion of people saying that chest/breasts are the most important factor (3%), we combined this category with the bottom part (butt/legs) group. This choice was justified due to the similar results for these categories. It may be considered a problem insomuch as breasts and buttocks tend to be sexually assessed separately (Singh, 1995). But, as already noted, the bodily ornaments are assessed, as a whole, separately from the face (Confer et al., 2010). The R notebook contains the full results.

Before exploring the regression model results, we first examined the distributions of body preference by sexual orientation and race. These can be seen in Figures 1 and 2.

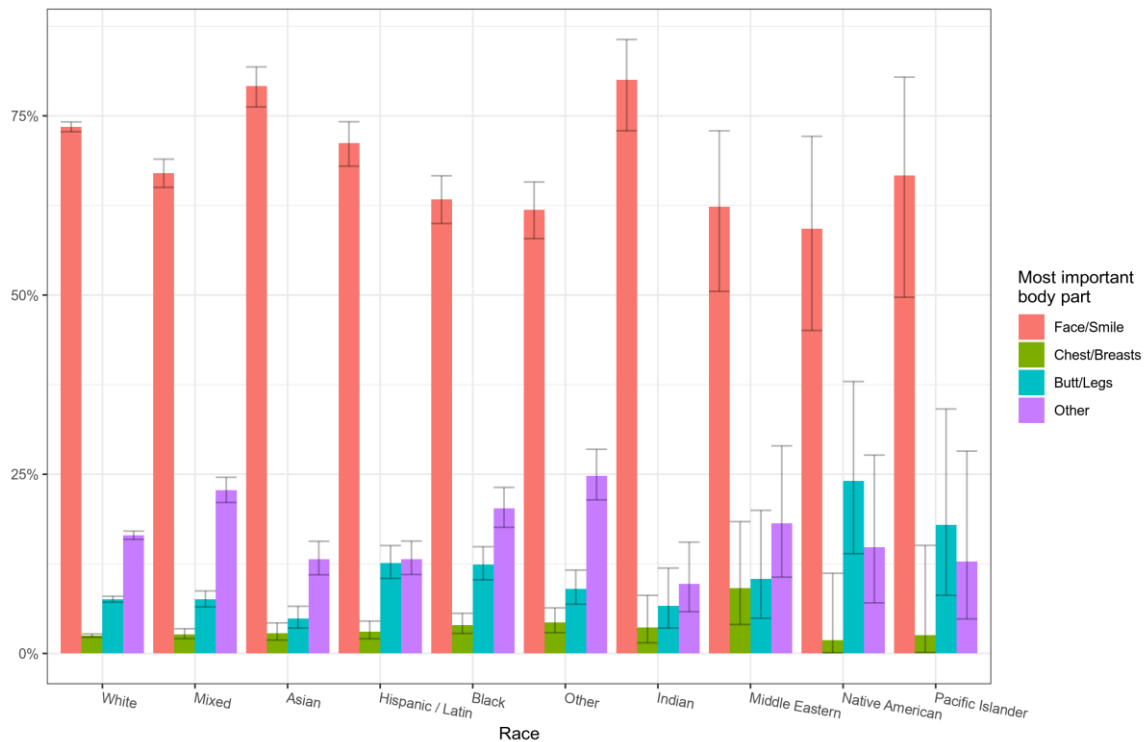
Figure 1

Self-reported part of the body most important in determining attractiveness by sexual orientation.



Note: Error bars should 95% confidence intervals.

Figure 2
 Self-reported part of the body most important in determining attractiveness by race



Note: Error bars should 95% confidence intervals.

The results show various differences. Women in general were more attracted to faces compared to body parts. Bisexuals of either sex were more attracted to “Other” body parts. Very few heterosexual women stated that their main preference was for legs/buttocks/breasts, which may conflict with many men’s gym efforts for training these. With regards to race, Whites, Indians and Asians preferred faces more than other races, while mixed and other race subjects were more into “other” body parts. Legs/buttocks were most preferred by Native Americans and Polynesians, though their error bars were very large.

The above differences may be confounded by age, sex, sexual orientation, so we sought to more clearly distinguish their relative effects. Table 1 shows the regression models for using our main specification.

Table 1
Main regression results for body part preferences

Predictor	Most important body part in determining attractiveness		
	Face	Chest-butt-legs	Other
Life history speed	-0.05 (0.02, 0.005**)	0.12 (0.02, <0.001***)	-0.01 (0.02, 0.467)
G	0.15 (0.02, <0.001***)	-0.35 (0.02, <0.001***)	0.03 (0.02, 0.105)
Hetero female	(ref)	(ref)	(ref)
Bi female	-0.44 (0.08, <0.001***)	0.24 (0.21, 0.25)	0.44 (0.08, <0.001***)
Homo female	-0.42 (0.14, 0.003**)	0.78 (0.30, 0.01*)	0.34 (0.15, 0.023)
Homo male	0.09 (0.09, 0.299)	1.45 (0.15, <0.001***)	-0.66 (0.11, <0.001***)
Bi male	-0.87 (0.11, <0.001***)	1.82 (0.18, <0.001***)	0.45 (0.12, <0.001***)
Hetero male	-0.63 (0.04, <0.001***)	2.14 (0.10, <0.001***)	-0.11 (0.05, 0.016)
White	(ref)	(ref)	(ref)
Mixed	-0.32 (0.05, <0.001***)	-0.01 (0.08, 0.867)	0.42 (0.06, <0.001***)
Asian	0.21 (0.09, 0.018)	-0.07 (0.14, 0.583)	-0.25 (0.11, 0.017)
Hispanic / Latin	-0.07 (0.08, 0.395)	0.32 (0.10, 0.002**)	-0.20 (0.11, 0.06)
Black	-0.48 (0.08, <0.001***)	0.52 (0.10, <0.001***)	0.31 (0.09, <0.001***)
Other	-0.50 (0.09, <0.001***)	0.23 (0.13, 0.081)	0.51 (0.10, <0.001***)
Indian	0.42 (0.20, 0.04)	-0.08 (0.26, 0.765)	-0.64 (0.28, 0.023)
Middle Eastern	-0.43 (0.25, 0.084)	0.69 (0.31, 0.028)	0.03 (0.32, 0.916)
Native American	-0.53 (0.28, 0.058)	0.97 (0.33, 0.003**)	-0.13 (0.38, 0.727)
Pacific Islander	-0.24 (0.36, 0.507)	0.72 (0.42, 0.082)	-0.41 (0.53, 0.445)
Age	(nonlinear)	(nonlinear)	(nonlinear)

$n = 20,872$

Model AUC's = 0.608, 0.723, 0.574

Model pseudo-R²'s = 0.041, 0.123, 0.019.

* = $p < .01$

** = $p < .005$,

*** = $p < .001$

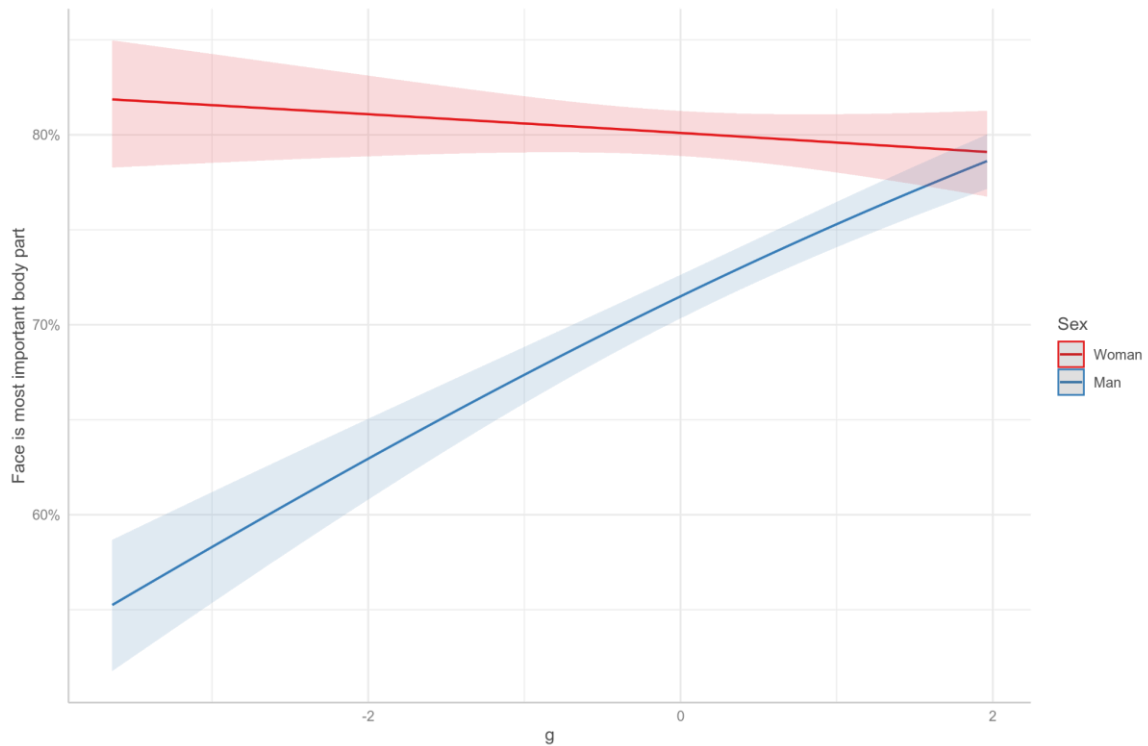
Values in parentheses are standard errors and p values.

The results show that the predictors work out roughly as expected based on the plots (Figure 1 and 2). We find that Black, Hispanic and Native American ethnicities are associated with more preference for legs/buttocks/chest in comparison to Whites (all p 's $\leq .003$). Conversely, we find that Black, Mixed, and Other ethnicities predict less preference for faces (p 's $< .001$). This was not the case for Hispanics, despite their liking of legs/buttocks/chest. With regard to sexual orientation and sex, men had stronger preferences for legs/buttocks/chest compared to women. There was a monotonic sexual gradient, such that heterosexual females were the least likely to choose legs/buttocks/chest and heterosexual men the most (i.e., $hetF > biF > homF > homM > biM > hetM$). Intelligence and life history speed were both related to less preferences for legs/buttocks/chest, intelligence quite strongly negatively so ($\beta = -0.35$) and life history speed only weakly ($\beta = 0.12$). The results found that "other" body part-preference is less clear and the model was fairly weak (pseudo-R² = .019). Preference for other body part was especially strongly predicted by bisexuality of either sex (betas = 0.44/0.45) as well as Mixed ($\beta = 0.42$), Other ($\beta = 0.51$) and Black ($\beta = 0.31$) ethnicity. Male homosexuality was a negative predictor ($\beta = -0.66$) but female homosexuality a positive predictor ($\beta = 0.34$). Life history speed and intelligence seemed unrelated (betas near zero).

We checked the interactions between sex and the quantitative variables as these traits might function differently. To do this, we first limited these data to the heterosexual subset in order to boost power. Using the 6-way split for "sex+orientation", would have left only limited power to detect an interaction between, for example, homosexual female * life history speed. This subset of the data was still large, however, $n = 21,062$. We found no evidence of an interaction between life history speed and sex for any preference (all p 's $> .05$). However, we found a strong interaction with sex and

intelligence for face preference ($g * \text{woman} = -0.23, p < .001$, thus, their beta was -0.04) such that intelligence did not predict face preference among women but did so strongly among men (beta = 0.19). Figure 3 shows the marginal effects of the sex*intelligence interaction.

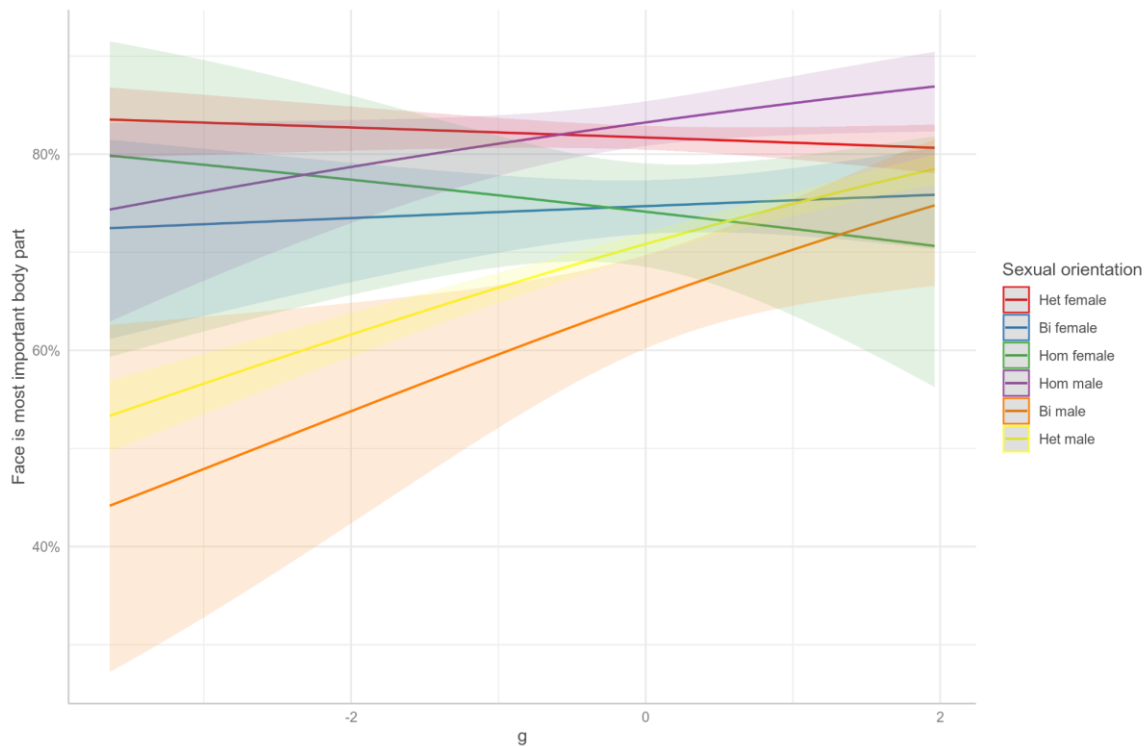
Figure 3
Effect of intelligence on face preference by sex



g = intelligence

Given the larger female preference for faces to begin with (i.e., their y intercept), men and women only reach parity for face preference around +2 z of intelligence. We furthermore checked whether this effect was truly due to sex itself, as opposed to being an effect of female heterosexuality specifically, as these constitute most of the female sample. Figure 4 shows the model using the full sexual orientation interaction.

Figure 4
Effect of intelligence on face preference by sexual orientation



g = intelligence

We see that the three female lines (red, blue, green) have only weak slopes, while the male lines (yellow, orange, purple) have stronger slopes. The model output substantiates this with strong interactions for male groups compared to the baseline of female heterosexuals: hetero male beta = 0.24 ($p < .001$), bisexual male beta = 0.27 ($p = .008$), homosexual male beta = 0.18 ($p = .027$), homosexual female beta = -0.05 ($p = .706$), bisexual female beta = 0.07 ($p = .377$).

In contrast to the prediction of face preference, there were no notable interactions for the prediction of legs/buttocks/breast nor for “other” body part preference. The full model outputs can be seen in the R notebook.

DISCUSSION

We found that preference for specific body parts being the most important factor in determining attractiveness was predictable by race/ethnicity, intelligence, life history speed, and sex/sexual orientation. Specifically, we find that compared to Whites (European ancestry), Blacks (majority African ancestry), Hispanics and Native Americans (mixed European-Amerindian ancestry) show greater preference for legs/buttocks/breasts compared with faces, which is also true of men compared to women. In the case of women this could also be because male facial attractiveness correlates with earnings (Frieze et al., 1991) and women are evolved to sexually select for status (Dutton, 2018b). Lower intelligence and faster life history speed also predicted greater preference for legs/buttocks/breasts, though the effect of intelligence was much greater than that of life history speed. Some subjects preferred unstated ‘Other’ body parts (e.g., shoulders, hands, feet), and this was predicted by bisexuality of either sex (betas = 0.44-0.45), as well as homosexual females (beta = 0.34), but not by homosexuality in men, which predicted lower preference for “Other” body part (beta = -0.66). “Other” body part preference was not predicted by intelligence or life history speed (betas near zero). We furthermore found a strong sex * intelligence interaction for the prediction of face as the key body part, such that intelligence was a reliable positive predictor for men, but not at all for women, who in fact had a slightly negative slope, (cf. Figure 3). This interaction was seemingly not

due to female heterosexuals specifically but could also be seen for female homosexuals and bisexuals (cf. Figure 4).

These findings make a great deal of sense in terms of the previous research, outlined above. As discussed, the face is indicator not just of genetic health, hormone levels and fertility – which would be of interest to fast LH strategists – but also of genetic similarity (Little et al., 2011), such that people find faces, controlling for other factors, the most attractive when their own face is morphed into them (see Rushton, 2005). It has been found that slow LH strategists engage in far stronger assortative mating than fast LH strategists (Figueredo & Wolf, 2009). This may be because a slow LHS involves being adapted to a very specific niche, rendering it crucial to infant survival that the partner is similarly adapted. It may also be because we create stronger bonds with those who are genetically similar to us, elevating our inclusive fitness (see Salter, 2007), and this leads to long-lasting partnerships whose members invest more in their (strongly similar) offspring. Outbreeding is also a risky strategy and a stable yet harsh ecology would militate against taking risks (Figueredo & Wolf, 2009).

There is evidence that the face is also a cue to personality. Across cultures certain specific facial traits are associated with certain personality types (Little et al., 2011) and there is evidence the people are correct in these intuitions, certainly at a greater level than chance would predict (e.g. Little & Perrett, 2007). Personality is more important for slow LH strategists because in a harsh ecology the female (and her offspring) is more likely to survive if the male invests and, from the male perspective, if he must invest then he must select a female who is faithful and who is a good nurturer. This is why females are more inclined to sexually select for status, something predicted by intelligence and personality (see Dutton, 2018b). Indeed, intelligence has been found to be discernible, with a degree of accuracy, from the face (Lee et al., 2017), with this trait being more important in a harsh, stable and competitive ecology. Accordingly, it would make sense for slow LH strategists to be particularly attracted to faces, over body parts.

As discussed, a partner's psychology is a more important consideration for females than for males, as the female has much to lose from the sexual encounter, rendering her pickier (see Dutton, 2018b). Indeed, when females are primed for purely short-term mating they become interested in known markers of genetic health in a male face (Brown et al., 2019). It would, thus, make sense that the female would be more face-focused than the male and less interested in body parts. Women are attracted to height, as this correlates with intelligence and status (Jackson & Ervin, 1992, Meyer & Selmer, 1999, Tyrrell et al., 2016), but this is distinct from being attracted to the body or parts of the body.

Intelligence, to a certain extent, can be regarded as a marker of slow LH, or, rather, it crosses over with key aspects of it such as ambition and social perceptiveness (Dunkel et al., 2021). Accordingly, we can understand why intelligence might predict a preference for faces. The preference for faces may be so strong in women that the interaction between intelligence and face preference among women is neutralised. On average, homosexual males are psychologically feminised while lesbians are psychologically masculinised (see Jeffrey et al., 2019). This finding may help explain some of the patterns we find, such as the gradient between female heterosexuals to male heterosexuals with respect to preference for legs/buttocks/chest.

The racial differences that we found would appear to replicate the work already discussed and also the application of LH theory to races, known as Differential-K, pursued by Rushton (1995) and subsequently developed on many further measures (see Dutton, 2020). Blacks, Hispanics and Native Americans – all of whom are faster LH strategists on many measures than Whites (see Dutton, 2020) – show a preference for body parts over faces, but among Whites this is reversed. This is precisely as Differential-K would predict. This finding is also consistent with evidence that buttocks have been sexually selected to be larger among Africans (see Dutton, 2020) and with the fact that Black rap and hip hop culture often praises large bottoms (see Gottschild, 2016) and Black female sexual dancing stereotypically involves the gyrating of the buttocks, known as “twerking” (Blay, 2021; Hoston, 2014;).

It would be useful if future research were able to tease out LHS differences between those who preferred breasts and those who preferred buttocks. We might expect, at the individual level, that breast-preference was associated with a slower LHS, as having sexual intercourse while looking at each other (e.g., missionary position), and thus seeing the breasts, would involve facing each other

and thus bonding, a point made by various evolutionary psychologists (e.g., Fellman, 2010). In contrast, buttock-preference seems related to less intimate, more animalistic sex, which should relate to faster LHS.

Limitations

The study has a number of issues and limitations. First, we relied on data scraped from a dating site. While the mean age (31, $SD = 8$) was not as young as in university student samples (typically 18–20), it was still not as high as the general population (about 45). We were especially missing older adults, who no longer seek new dates, either due to lack of interest, time, or due to being already in a committed relationship.

Second, by the nature of our data, it contains few people who have otherwise given up on dating altogether, or who do not use online dating. The data were collected prior to smartphone-based app dating becoming dominant (e.g., Tinder, Coffee Meets Bagel), which probably means the selection bias is somewhat stronger for our dataset.

Third, these data were only available for persons who choose to answer many hundreds or thousands of questions on this dating site in order to be better matched with potential dates. This induced sample selectivity for greater patience, though it is not precisely known how strong this sampling bias is and, we have noted, it is valid a number of important measures.

Fourth, the sample was mostly based on Western countries, mainly English-speaking countries (85%), and almost all residing in Western countries (95%). Thus, the subjects of non-European ancestry participating were mainly recent immigrants or of immigrant descent (not including Native Americans, who arrived in the Americas some 10,000 years ago, see Dutton, 2020). It is possible they would have different preferences in their origin countries/areas. There is, however, no particular reason to think these sampling biases impact our results.

Fifth, intelligence is typically measured using a standardised test composed of many items (e.g., standard Raven's test has 60), but here we only had data from 14 items (Kirkegaard, 2018; Kirkegaard & Lasker, 2020). Similarly, our measure of life history speed was limited to 2 items asking about the desired length of a future relationship. Nevertheless, as discussed earlier, these instruments have yielded results that are congruous with research using other instruments, so they are evidently reliable enough to find known patterns and reveal new ones.

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