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The role of facial hair in women's perceptions of men's attractiveness, health, masculinity and parenting abilities

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ABSTRACT

Facial hair strongly influences people's judgments of men's socio-sexual attributes. However, the nature of these judgments is often contradictory. The levels of intermediate facial hair growth presented to raters and the stage of female raters' menstrual cycles might have influenced past findings. We quantified men's and women's judgments of attractiveness, health, masculinity and parenting abilities for photographs of men who were clean-shaven, lightly or heavily stubbled and fully bearded. We also tested the effect of the menstrual cycle and hormonal contraceptive use on women's ratings. Women judged faces with heavy stubble as most attractive and heavy beards, light stubble and clean-shaven faces as similarly less attractive. In contrast, men rated full beards and heavy stubble as most attractive, followed closely by clean-shaven and light stubble as least attractive. Men and women rated full beards highest for parenting ability and healthiness. Masculinity ratings increased linearly as facial hair increased, and this effect was more pronounced in women in the fertile phase of the menstrual cycle, although attractiveness ratings did not differ according to fertility. Our findings confirm that beardedness affects judgments of male socio-sexual attributes and suggest that an intermediate level of beardedness is most attractive while full-bearded men may be perceived as better fathers who could protect and invest in offspring.

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1. Introduction

Androgen-dependent facial and bodily traits are positively associated with men's health (Thornhill & Gangestad, 2006), immunity (Rantala et al., 2012), dominance and competitive ability (Archer, 2009). Masculine men may also achieve greater mating and reproductive success (Rhodes, Simmons, & Peters, 2005). Yet averaged across experiments, women either prefer less masculine faces (Perrett et al., 1998) or weakly prefer masculine faces (Rhodes, 2006). However, women's preferences for facial cues of masculinity vary, growing strongest when men are rated for short-term relationships (Little, Connely, Feinberg, Jones, & Roberts, 2011), and during the most fertile part of their menstrual cycle (Gangestad & Thornhill, 2008).

The beard is a highly sexually dimorphic androgen-dependent trait that varies markedly among men (Randall, 2008). While this implies a sexually selected origin for beardedness, there is no consensus on the relative importance of female mate choice and male-male competition in shaping facial hair. Given that facial hair growth begins at puberty and continues throughout adulthood, it is not surprising that beards augment perceptions of maturity and masculinity (Addison, 1989; Neave & Shields, 2008). However, associations between other personality traits and beards are highly polarized. On the one hand, bearded men are ascribed positive attributes such as self-confidence, courage, sincerity, generosity and industriousness (Kenny & Fletcher, 1973; Pellegrini, 1973; Hellström & Tekle, 1994). On the other hand, beards are judged as less socially appeasing and more aggressive (Addison, 1989; Muscarella & Cunningham, 1996; Neave & Shields, 2008).

Findings on the attractiveness of facial hair are equally mixed. In some cases full beards increased male attractiveness (Pellegrini, 1973; Hatfield & Sprecher, 1986; Reed & Blunk, 1990), while others found they did not (Feinman & Gill, 1977; Wogalter & Hosie, 1991; Muscarella & Cunningham, 1996; Dixson & Vasey, 2012). These mixed findings may have resulted, in part, from using written questionnaires (Feinman & Gill, 1977), fake beards (Wood, 1986) or facial hair created using make-up pencils (Muscarella & Cunningham, 1996). Where natural photographs have been used, typically only full beards or clean-shaven faces were presented (e.g. Dixson & Vasey, 2012), which does not capture variation in men's ability to grow facial hair. Interestingly, Neave and Shields (2008) found using computer-generated images that varied in grades of facial hair that light stubble was most attractive to women.

In the present study, a sample of men, each of whom were photographed as clean-shaven, lightly stubbled, heavily stubbled and fully bearded, were rated for attractiveness, healthiness, masculinity

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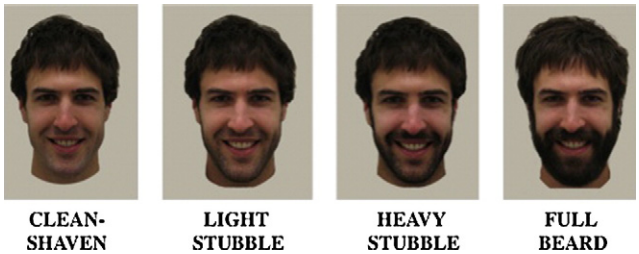

Fig. 1. An example of the stimuli used in this study. Images show the same man when clean-shaven, with light stubble, heavy stubble and a full beard.

and parenting abilities. Analysis 1 compared ratings between men and women. We predicted that men would judge full beards more favorably than women because of the strong role of beards in judgments of social dominance and threat (Dixson & Vasey, 2012). Conversely, we predicted that women may judge more bearded faces to be more attractive than clean-shaven faces but that a threshold of masculinity may be preferred, with lightly stubbled faces considered most attractive (after Neave & Shields, 2008). Women's preferences for masculine traits are known to become stronger during the late follicular, more fertile, period of the menstrual cycle when any benefits of mating with a more masculine partner can be realized (Gangestad & Thornhill, 2008). Thus, in Analysis 2 we tested the prediction that heavier stubble and hence greater masculinity would be more attractive at the period of the menstrual cycle when conception is more likely.

2. Materials and methods

2.1. Stimuli

Ten men of European descent (mean age ± SD = 23.50 ± 3.57 years), each of whom had dark brown head and facial hair were photographed in each of four conditions in the following order: fully bearded (at least 6 weeks without shaving), clean-shaven, with 5 days (light stubble) and 10 days of beard growth (heavy stubble). Men posed smiles generated using the Facial Action Coding System (Ekman, Friesen, & Hager, 2002). Photographs were taken using a Canon digital camera (8.0 megapixels resolution), 150 cm from the participant under controlled lighting. Images were cropped so only the face and neck were shown (Fig. 1).

2.2. Procedure

Studies were completed online at www.bodylab.biz. Participants viewed each of the 10 faces once, with 4 faces clean-shaven and 2 faces in each of the other three categories of facial hair. Which faces were assigned to which condition was determined at random for each participant, as was the order in which faces were presented. Subjects rated each face for attractiveness, healthiness, masculinity and parenting abilities using six-point Likert scales (0 = very low–5 = very high). After completing the ratings participants provided details on their age, sex, ethnicity and sexual orientation. Female participants also stated how many days ago their most recent menstrual bleeding began, whether they were pregnant, post-menopausal or using hormonal contraceptives.

2.3. Statistical analyses

Attractiveness, health, masculinity and parenting ability ratings were dependent variables in a MANOVA where facial hair was the within-subject factor. Sex in Analysis 1 and reproductive status in Analysis 2 were entered as between-subject factors.

2.4. Analysis 1: Male and female perceptions of beardedness

2.4.1. Analysis 1: Participants

Self-identified homosexual and asexual participants were excluded from analyses, as were female participants that were pregnant, were post-menopausal or used hormonal contraceptives. Eight percent of the female sample were bisexual and were retained, as they are sexually attracted to men as well as women. Their inclusion did not interact with any dependent variables (all P values ≥ 0.249). The final sample size was 177 heterosexual men (mean age ± SD = 32.18 ± 10.30 years) and 351 women (27.94 ± 8.23 years), of whom 79.9% were European, 8.4% were Asian, 4.2% were Native American, 1.8% were African, Middle Eastern or Australasian and 5.7% elected not to define their ethnicity.

2.4.2. Analysis 1: Results

There was a significant main effect of facial hair and a significant sex × facial hair interaction for attractiveness ratings (Table 1). Women rated heavy stubble as significantly more attractive than clean-shaven, light stubble and full beards (all $t_{351} \geq 3.51$, all

Table 1
Multivariate repeated-measures analysis of variance of the effects of facial hair and sex on perceptual ratings.

Within-subject effects										
	Facial hair					Facial hair × sex				
Pillai's trace	0.373					0.040				
	F	df_n	df_d	P	η_p^2	F	df_n	df_d	P	η_p^2
MANOVA	25.55	12	515	<0.001	0.373	1.80	12	515	0.045	0.040
Attractiveness[a]	7.02	2.8	1491.6	<0.001	0.013	2.66	2.8	1491.6	0.050	0.005
Parenting[a]	44.74	2.9	1521.1	<0.001	0.078	1.09	2.9	1521.1	0.349	0.002
Health[a]	14.03	2.9	1548.5	<0.001	0.026	2.58	2.9	1548.5	0.053	0.005
Masculinity[a]	50.19	2.9	1525.4	<0.001	0.087	0.57	2.9	1525.4	0.631	0.001

Between-subject effects					
	Sex				
Pillai's trace	0.053				
	F	df_n	df_d	P	η_p^2
MANOVA	7.30	4	523	0.000	0.053
Attractiveness	5.84	1	526	0.016	0.011
Parenting	5.17	1	526	0.023	0.010
Health	1.23	1	526	0.267	0.002
Masculinity	2.67	1	526	0.103	0.005

[a] Greenhouse–Geisser adjusted df (rounded to one decimal place).

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