

The Association Between Men's Sexist Attitudes and Facial Hair

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Abstract Facial hair, like many masculine secondary sexual traits, plays a significant role in perceptions of an array of socio-sexual traits in men. While there is consensus that beards enhance perceptions of masculinity, age, social dominance, and aggressiveness, the perceived attractiveness of facial hair varies greatly across women. Given the ease with which facial hair can be groomed and removed entirely, why should some men retain beards and others choose to remove them? We hypothesized that men with relatively sexist attitudes would be more likely to allow their facial hair to grow than men with less sexist attitudes. Men from the USA ($n = 223$) and India ($n = 309$) completed an online survey measuring demographic variables, ambivalent sexism, and facial hair status. After controlling for demographic variables, men with facial hair were significantly higher in hostile sexism than clean-shaven men; hostile sexism was a significant predictor of facial hair status over and above demographic variables; and facial hair was more frequent among ambivalent and hostile sexists than among benevolent and non-sexists. It is suggested that sexist men choose to grow facial hair because it maximizes sexual dimorphism and augments perceived masculinity and dominance.

Keywords Facial hair · Ambivalent sexism · Masculinity · Social dominance

Introduction

The role of masculine traits in interpersonal social communication and the relative social costs to men in displaying their masculinity is a growing area of body image research (Swami & Voracek, 2013). Facial hair is an intriguing example of how culture and biology act in concert to influence perceptions of men's masculinity. Beards are markedly sexually dimorphic, emerging in early adolescence under the actions of androgens (Ebling, 1987; Farthing, Mattei, Edwards, & Dawson, 1982; Randall, 2008). Differences among men in density and distribution of facial hair have been attributed to sexual selection as a cue to social dominance and attractiveness (Darwin, 1871). Rated masculinity rises linearly with facial hair thickness (Dixon & Brooks, 2013; Neave & Shields, 2008) and beards enhance ratings of maturity, dominance, and threat (Dixon & Vasey, 2012; Muscarella & Cunningham, 1996; Neave & Shields, 2008). While beards also augment ratings of positive social attributes, such as self-confidence, generosity, sincerity, and industriousness (Hellström & Tekle, 1994; Kenny & Fletcher, 1973; Pancer & Meindl, 1978; Pellegrini, 1973), evidence that beards enhance male attractiveness is equivocal. When rating full beards and clean-shaven faces, women report preferring beards in some cases (Pellegrini 1973; Reed & Blunk, 1990) but clean-shaven faces in others (Dixon & Vasey, 2012; Feinman & Gill, 1977; Muscarella & Cunningham, 1996). Results from studies using graded amounts of stubble are also mixed, so that women's preferences were higher for light stubble in some studies (Dixon & Rantala, 2015; Neave & Shields, 2008), heavy stubble in others (Dixon & Brooks, 2013; Janif, Brooks, & Dixon, 2014), and clean-shaven, light, and heavy stubble being equally more attractive than beards in another (Dixon, Tam, & Awasthy, 2013). This variation in results suggests the relationship between facial hair and attractiveness is not a simple one, and may vary with a range of psychological and social factors.

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Although there is a little consensus as to whether beards enhance men's attractiveness, bearded faces are consistently judged as more dominant, masculine, older, and aggressive than clean-shaven faces (Addison, 1989; Dixson & Vasey, 2012; Muscarella & Cunningham, 1996; Neave & Shields, 2008; Roll & Verinis, 1971). This constellation of traits aligns with one of the basic dimensions in social facial perception related to the evaluation of threat. People quickly evaluate faces in terms of their trustworthiness, attractiveness, and dominance in order to assess their intentions and ability to harm (Oosterhof & Todorov, 2008; Sutherland et al., 2013; Todorov, Said, Engell, & Oosterhof, 2008). Factor analyses reveal these dimensions are largely independent, so that cues associated with dominance are distinct from trustworthiness or attractiveness judgments (Sutherland et al., 2013). Thus, beardedness may be primarily involved in cueing social dominance wherein men with facial hair are perceived as more masculine, older, and socially dominant than clean-shaven men. Indeed, Dixson and Brooks (2013) found that women at the high fertility phase of the menstrual cycle rated facial hair higher for masculinity than women at the low fertility phase, but fertility may not be positively associated with preferences for facial hair (Dixson & Brooks, 2013; Dixson & Rantala, 2015; Dixson et al., 2013). However, beards are more attractive than clean-shaven faces when considering a long-term relationship than a short-term relationship (Neave & Shields, 2008) and when rating men's parenting abilities (Dixson & Brooks, 2013). Thus, beards may primarily communicate age, masculinity, and social dominance intra-sexually (Archer, 2009; Puts, 2010) but secondarily influence male attractiveness in longer term mating contexts (Dixson & Brooks, 2013; Neave & Shields, 2008).

Further evidence that facial hair conveys social dominance between males comes from historical trends. Historically, men may have grown facial hair to enhance social status and at various times facial hair has been associated with aristocracy and the military, including military rank (Peterkin, 2001; Reynolds, 1949). While men's decisions to groom their beards occur in response to prevailing fashion trends (Robinson, 1976), trends in beardedness have been shown to increase when there were more males than females in the potential marriage pool (Barber, 2001), suggesting that the premium on beardedness fluctuates with the strength of male–male competition and possibly the need to display masculinity. In one study, men assigned to wear a false beard perceived themselves as more masculine than men who wore a bandana or a control group (Wood, 1986). Men who choose to be bearded have higher salivary and serum testosterone than men who choose to be clean-shaven (Knussmann & Christiansen, 1989) and testosterone is strongly associated with social dominance in men (van Honk, Bos, & Terburg, 2014). Further, compared with many nonhuman primates, men exhibit relatively well-developed secondary sexual traits, including beardedness and body hair, analogous to that which occurs in primates with polygynous mating systems (Dixson, Dixson, & Anderson, 2005) and large social

systems with multi-level organizations (Grueter, Isler, & Dixson, 2015). Thus, there is converging evidence from the perceptual, historical analyses, and comparative studies across primates that men's facial hair communicates social dominance among males.

In addition to cueing social dominance among males, there is also evidence to suggest male secondary sexual traits may be related to masculine identities and power dynamics between the sexes. Much research on masculinity has focussed on the role of men's drive to augment masculine bodily traits from the perspective of body dissatisfaction (Pope, Phillips, & Olivardia, 2000). However, a growing literature highlights feminist perspectives (Swami & Voracek, 2013). Power dynamics between men and women affect gendered identities that, in turn, could influence men's aggression, risk-taking, competitive behaviors, and individual differences in the pursuit to augment masculinity. Cross-national research reveals that men living in more patriarchal societies have higher mortality rates (Stanistreet, Bambra, & Scott-Samuel, 2005) and in countries in which women's economic activities increased relative to men's, men engaged in more risky behaviors and had higher mortality (Stanistreet, Swami, Pope, & Scott-Samuel, 2007). According to sexual selection theories, under social conditions of strong intra-sexual competition, particularly in societies with high rates of polygyny, males may be impelled to compete more aggressively for long-term mates (Schmitt & Rohde, 2013).

The drive for muscularity in men is positively associated with the pursuit of stereotypically masculine gender roles (McCearry, Saucier, & Courtenay, 2005), male aspirations for social dominance among same-sex peers (Swami et al., 2013a), and their sexist attitudes (Swami & Voracek, 2013). Finally, while men's preferences for breast morphology varies cross-culturally (Dixson et al., 2011; Jones, 1996), benevolent sexist attitudes among men of European descent from the UK correlated positively with their preferences for large breasts in women (Swami and Tovée, 2013) and the desire for cosmetic surgery in oneself and one's partner (Swami et al., 2013b), suggesting that patriarchal ideals and gendered dominance within society also play into ideals of beauty.

In the present study, we examined individual differences in men's views of masculinity, societal patriarchy, and their decisions to allow their facial hair to grow. One aspect of patriarchy is sexism, which was traditionally conceptualized as antipathy or hostility toward women but is now understood to involve both hostile and benevolent components (Glick & Fiske, 1996, 1997, 2001). Due to male dominance in society on the one hand, and interdependence between males and females for intimacy and reproduction on the other, overtly negative hostile attitudes and overtly positive paternal attitudes toward women coexist. Hostile sexist attitudes are derogatory characterizations of women that function to support male dominance and gender role segregation, such as the view that women tend to interpret innocent remarks as being sexist. Benevolent sexist attitudes, on the

other hand, are overtly positive and emphasize women as having complementary characteristics to men, and needing and deserving protection from men. Although benevolent sexist attitudes are overtly positive, they still support gender inequalities by reinforcing gender differences and role segregation. Hostile and benevolent sexist attitudes are highly correlated at the aggregate (i.e., national) level, and countries with higher levels of hostile and benevolent sexism tend to have lower levels of gender equality and empowerment (Glick et al., 2000). These findings suggest that hostile and benevolent sexism are complementary ideologies that promote and sustain gender inequality.

At the individual level, however, hostile and benevolent sexism are only moderately correlated, suggesting they represent separate but related sets of views. Hostile sexism is associated with negative evaluations and stereotypes of women, and is targeted toward non-traditional women (e.g., business women, feminists, and lesbians) (Glick, Diebold, Bailey-Werner, & Zhu, 1997; Glick & Fiske, 1996, 1997). Hostile sexism is also related to the acceptance of rape myths and more negative attitudes toward rape victims (Chapleau, Oswald, & Russell, 2007; Sakalli-Uğurlu, Yalçın, & Glick, 2007). Conversely, benevolent sexism is associated with positive evaluations and stereotypes of women and is targeted toward women who conform to traditional gender roles (Glick et al., 1997; Glick & Fiske, 1996, 1997, 2001). The relative independence of hostile and benevolent sexism at the individual level gives rise to four theoretical types of sexist: Firstly, non-sexists score low on both hostile and benevolent scales. Secondly, benevolent sexists score high on benevolent sexism but low on hostile sexism and tend to have paternalistic attitudes toward women in general. Thirdly, hostile sexists score high on hostile sexism but low on benevolent sexism and tend to have negative attitudes toward women as a group. Finally, ambivalent sexists score high on both scales and have polarized attitudes, often expressing hostility toward some women (e.g., non-traditional, successful, powerful women) and benevolence toward others (e.g., traditional women such as relationship partners) (Glick et al., 1997).

In the current study, we assessed whether individual differences in men's decisions to cultivate a bearded appearance were associated with their patriarchal support of male dominance in society. We reasoned that since facial hair is highly sexually dimorphic and associated with traits of male social dominance, men who are more favorable to gender differentiation and role segregation in society may be drawn toward cultivating a bearded appearance. This hypothetical link between beards and sexism is not suggested to be a conscious one, but more likely mediated by masculine identity. Thus, men who favor gender differentiation may have ideals of masculine identity that emphasize sexually dimorphic traits, including musculature, highly gendered interests, and facial hair.

We quantified men's beardedness and their responses to questionnaires regarding their hostile and benevolent sexist

attitudes to test two principle hypotheses using four separate analyses. Our first hypothesis was that since both hostile and benevolent sexism support male dominance in society (Glick et al., 2000), and facial hair enhances ratings of male dominance (Dixson & Vasey, 2012; Muscarella & Cunningham, 1996; Neave & Shields, 2008; Puts, 2010), men with facial hair would score higher on both hostile and benevolent sexism scales than men who opt to be clean-shaven. To test this, we compared sexist attitudes with linear facial hair growth (Analysis 1) and then again against the presence or absence of any facial hair (Analysis 2). Given hostile and benevolent sexism are somewhat independent in individuals, our second hypothesis was that hostile sexism would be more strongly associated with adopting a more bearded look than scores for benevolent sexism, since hostile sexism is more directly and explicitly associated with male social dominance (Glick et al., 1997; Glick & Fiske, 1996, 1997). Thus, we tested the degree to which hostile and benevolent sexist attitudes in men predicted the decision to allow their facial hair to grow (Analysis 3). Finally, we compared rates of facial hair among non-sexists, benevolent sexists, hostile sexists, and ambivalent sexists in order to ascertain whether beardedness varied among different types of male sexists (Analysis 4). Since both the prevalence of facial hair and patriarchal attitudes can vary widely across cultures, we examined the relationship between facial hair and sexist attitudes in two distinct cultural groups, sampling participants from the U.S. and India. Sampling from two distinct cultural groups reduces the likelihood that any observed relationships between facial hair and sexism are culturally specific.

Method

Participants

A total of 532 men aged between 18 and 72 years ($M = 31.12$, $SD = 10.12$) took part in the study in exchange for \$0.25 USD. A total of 223 (41.9 %) identified their nationality and current place of residence as the USA, and the remainder (58.1 %) identified as Indian and living in India. The majority (78.6 %) of participants were university educated, with 54.5 % possessing an undergraduate degree and 24.1 % a postgraduate degree. A further 20.1 % had been educated up to secondary school. Only seven participants had received less than secondary school education. A total of 288 participants (54.1 %) reported being single ($n = 281$) or divorced ($n = 7$), and 243 (45.6 %) reported being in a relationship ($n = 71$) or married ($n = 172$). A total of 236 participants (44.4 %) reported being not interested in a new relationship, while the remainder were either actively looking for ($n = 168$) or open to one ($n = 127$). Seventy-eight percent were heterosexual, 4.1 % homosexual, 8.8 % bisexual, and 1.1 % other. Forty-one participants did not disclose their sexual orientation.

Measures and Procedure

The study was conducted online via Amazon's Mechanical Turk website, which began by informing participants that they would be asked some questions about their attitudes toward facial hair. They were then asked to indicate their gender and age. Hereafter male and female participants were channeled to separate surveys. Only the male survey is described here. Participants were asked demographic questions covering their nationality, country of residence, education level, occupation, relationship status, and sexual orientation. Next, they were presented with an abridged version of the Ambivalent Sexism Inventory (Glick & Fiske, 1996) that included four items measuring hostile sexism ("Women are too easily offended"; "Once a woman gets a man to commit to her, she usually tries to put him on a tight leash"; "Most women interpret innocent remarks or acts as being sexist"; "Women seek to gain power by getting control over men") and four items measuring benevolent sexism ("Women should be cherished and protected by men"; "No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman"; "Men should be willing to sacrifice their own well-being in order to provide financially for the women in their lives"; "Women, compared to men, tend to have a superior moral sensibility"). The four benevolent sexism items were chosen to sample the three subscales of benevolent sexism: protective paternalism, complimentary gender differentiation, and heterosexual intimacy. The hostile sexism items were chosen at random because they have been found to measure a single dimension (Glick & Fiske, 1996). Participants responded to each item using a 6-point scale (1 = strongly disagree to 6 = strongly agree).

A principal components factor analysis with oblique rotation on these items revealed two factors explaining 66.30 % of the variance. Varimax rotation revealed an identical factor structure. The four hostile sexism items loaded on the first factor (loadings above .76) and the four benevolent sexism items loaded on the second factor (loadings above .73). Factor scores were saved (regression method) for use in subsequent analyses. The Pearson's correlation between hostile and benevolent sexism factors was .35 ($n = 532$, $p < .001$), in line with previous studies using the full scale (Glick & Fiske, 1996, 1997).

Finally, participants were shown nine computer-generated faces each displaying a different facial hair style (clean-shaven,

mustache, soul patch, van dyke, light stubble, heavy stubble, light beard, medium beard, and full beard) and asked to indicate which image most closely matched their own facial hair style. Each face was identical apart from the facial hair style and was generated using *Sims Creator*.

This study was approved by the Ethics Committee of the Department of Psychology at the University of York, UK.

Results

Overall, 77.3 % of the sample reported having some sort of facial hair. However, the frequency and type of facial hair varied between countries. 86.3 % of Indian participants indicated they had facial hair, whereas 65.0 % of North Americans had facial hair. The most popular facial hair style among Indian participants was the mustache (29.7 %), followed by light stubble (15.7 %), van dyke (11.4 %), heavy stubble (9.8 %), soul patch (7.2 %), light beard (5.6 %), heavy beard (4.6 %), and medium beard (2.3 %). Among North American participants, the frequency of the various styles was light stubble (19.3 %), van dyke (12.6 %), heavy stubble (12.1 %), light beard (8.1 %), full beard (5.8 %), mustache (3.6 %), medium beard (2.7 %), and soul patch (.09 %).

Analysis 1: Facial Hair Thickness and Men's Sexist Attitudes

Since a linear relationship has been found between facial hair thickness and perceived masculinity (Dixson & Brooks, 2013; Neave & Shields, 2008), we explored the relationship between facial hair thickness and sexism. Facial hair styles were categorized so that no facial hair was coded as 1, mustaches, van dykes, and soul patches were coded as 2, and the increasing thicknesses of facial hair were coded 3–7. Pearson's correlation found no significant relationships between facial hair thickness and hostile or benevolent sexism, education, age, sexual orientation, or relationship status. Inspection of hostile and benevolent sexism means at each level of facial hair thickness suggested, if anything, a qualitative difference between clean-shaven men and those with facial hair, rather than a clear linear relationship (Table 1). We conducted

Table 1 Mean and standard deviation sexism scores across levels of facial hair thickness

Sexism	Clean-shaven		Mustache, goatee, soul patch		Light stubble		Heavy stubble		Light beard		Medium beard		Full beard	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Hostile	3.41	1.27	4.15*	.94	3.93*	1.07	3.89*	1.22	3.96*	1.13	3.33	1.03	3.76	.92
Benevolent	3.76	1.13	4.38	.88	3.94	1.11	3.86	1.15	4.22	1.09	4.54*	.58	3.92	1.06
<i>n</i>	120		184		91		57		35		13		27	

Hostile and benevolent sexism scores had a possible range from 1 to 6

* $p < .05$ compared to Clean-shaven

pairwise comparisons between clean-shaven men and each facial hair style on hostile and benevolent sexism scores. Hostile sexism scores were significantly higher ($ps < .05$) for all levels of facial hair except medium beard and full beard, compared to clean-shaven (Table 1). Benevolent sexism scores were not significantly different for any level of facial hair except medium beard, compared to clean-shaven (Table 1).

For the purpose of further analyses, participants were classified as either clean-shaven or having facial hair based on their self-reported facial hair style (clean-shaven vs. all others). Participants were also classified as either single/divorced or in a relationship/married, and as either heterosexual or not (all other responses). Each of these variables was dummy coded (0, 1). There were no statistically significant relationships between facial hair status and other demographic variables, including age, education, relationship status, and sexual orientation.

Analysis 2: The Presence of Facial Hair and Men's Sexist Attitudes

Sexism was analyzed with a 2 (Sexism Type: Hostile vs. Benevolent) by 2 (Facial Hair Status: Present vs. Absent) by 2 (Nationality: U.S. vs. Indian) mixed ANCOVA with sexism type serving as the within-subjects factor. Age, education level, relationship status, and sexual orientation were covariates. All effect sizes are partial eta square η_p^2 .

There was a significant Facial Hair Status by Sexism Type interaction, $F(1, 519) = 4.09, p = .044, \eta_p^2 = .008$ (Fig. 1). Participants with facial hair scored higher on hostile sexism than clean-shaven participants, $F(1, 520) = 8.55, p = .004, \eta_p^2 = .016$, but not benevolent sexism (all F values < 1). There was a main effect of Nationality on sexism, $F(1, 519) = 125.66, p < .001, \eta_p^2 = .195$, with Indians scoring higher than North Americans on both dimensions of sexism. There were also significant interactions of Sexism Type with education

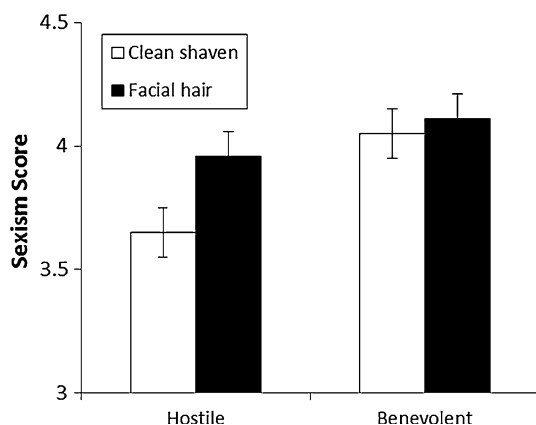


Fig. 1 Mean hostile and benevolent sexism scores between males with and without facial hair. Error bars represent standard errors

level, $F(1, 519) = 3.94, p = .048, \eta_p^2 = .008$, and relationship status, $F(1, 519) = 7.67, p = .006, \eta_p^2 = .015$. Hostile sexism declined and benevolent sexism increased with increasing levels of education, and men in relationships had lower scores on hostile sexism and higher scores on benevolent sexism than single men. There were no significant interactions between Nationality and Sexism Type, nor between Nationality, Sexism Type, and Facial Hair Status, $F_s < 1$.

Analysis 3: Do Sexist Attitudes Predict Facial Hair Status?

Logistic regression was used to assess whether facial hair status predicted men's gender attitudes. Nationality, age, education, relationship status, and sexual orientation were entered into Step 1 of a logistic regression, and hostile sexism, benevolent sexism, and their interaction were entered into Step 2 to predict the likelihood of a man having facial hair. Step 1 significantly improved predictability over baseline, $\chi^2(5) = 32.85, p < .001$, with nationality making the only significant contribution (Table 2). Being from India rather than North America increased the odds of having facial hair by 3.15. Importantly, adding hostile and benevolent sexism in Step 2 further increased predictability, $\chi^2(3) = 8.64, p = .035$, but only hostile sexism made a significant contribution. One unit increase in hostile sexism increased the odds of having facial hair by 1.40. Benevolent sexism had no impact on the odds of having facial hair.

Analysis 4: Facial Hair Frequency Among Different Types of Sexist Attitudes

Another way in which ambivalent sexism is often analyzed is by categorizing participants according to their levels of hostile and benevolent sexism (e.g., Russell & Trigg, 2004). This is justified on the grounds that hostile and benevolent sexism and their combinations represent distinct clusters of gender attitudes. This analysis was conducted across the whole sample, and within each nationality separately, by creating median splits on the hostile and benevolent sexism scales and categorizing participants into one of four sexism categories: non-sexists (low in hostile and benevolent sexism), hostile sexists (high in hostile but low in benevolent sexism), benevolent sexists (high in benevolent but low in hostile sexism), and ambivalent sexists (high in hostile and benevolent sexism). The frequency of facial hair within each sexism category was analyzed with Chi-square tests.

Across the entire sample, 32.7 % were non-sexist, 17.2 % were hostile, 17.2 % were benevolent, and 32.9 % were ambivalent. A Chi-square test showed that facial hair was not equally frequent across the four sexism categories, $\chi^2(3) = 16.31, p = .001$, being least frequent among non-sexists (67.6 %), more frequent among benevolent (78.0 %) and hostile (79.1 %) sexists, and most frequent among ambivalent sexists (85.6 %; Fig. 2). Separate analyses within the U.S. and Indian samples revealed

Table 2 Results of a logistic regression predicting the likelihood of having facial hair from demographic variables and gender attitudes

	<i>B</i> (<i>SE</i>)	Wald	95 % CI for odds ratio		
			Lower	Odds ratio	Upper
Step 1					
Nationality	.87 (.30)	8.49	1.33	2.38	4.26
Sexual orientation	−.08 (.31)	0.07	0.50	0.92	1.69
Relationship status	−.11 (.23)	0.21	0.57	0.90	1.42
Age	−.01 (.01)	0.02	0.98	1.00	1.02
Education	.08 (.16)	0.24	0.79	1.08	1.49
Step 2					
Hostile sexism	.33 (.12)	7.16	1.09	1.39	1.76
Benevolent sexism	−.02 (.12)	0.02	0.76	0.99	1.26
Hostile × Benevolent	−.01 (.08)	0.02	0.84	0.99	1.16

$R^2 = .08$ (Cox & Snell), .12 (Nagelkerke). Model $\chi^2(7) = 41.46$, $p < .001$

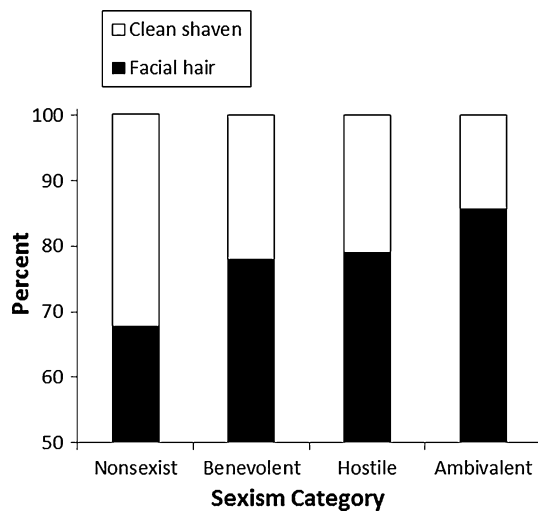


Fig. 2 Frequency of facial hair within each sexism category, $\chi^2(3) = 16.31$, $p = .001$

a similar pattern for both countries, though neither reached statistical significance, India: $\chi^2(3) = 4.85$, U.S.: $\chi^2(3) = 2.86$.

Discussion

The study of individual differences in men's corporal masculinity and gendered attitudes is a burgeoning area of body image research (Swami & Voracek, 2013). We tested whether men's decisions to allow their facial to grow was associated with patriarchal views through comparing facial hair styles with scores on scales for benevolent and hostile sexism. Our first hypothesis was that since both hostile and benevolent sexism support male dominance in society, and facial hair may enhance ratings of male dominance (Dixson & Vasey, 2012; Muscarella & Cunningham, 1996; Neave & Shields, 2008), men with facial hair would score higher on both hostile and benevolent sexism scales than men who

opt to be clean-shaven. After controlling for nationality, age, education level, relationship status, and sexual orientation, men with facial hair scored significantly higher on hostile sexism than clean-shaven men. Furthermore, hostile sexist attitudes and nationality were the only significant predictors of whether or not men chose to grow facial hair. This suggests that in our sample, while men's decisions to grow facial hair is not influenced by sexual orientation, relationship status, age, or education, it likely does have some cultural and personal significance.

We also hypothesized that men who scored high on hostile sexism would be more likely to choose to grow facial hair because it enhances facial masculinity and perceived social dominance (Dixson & Vasey, 2012; Muscarella & Cunningham, 1996; Neave & Shields, 2008). Hostile sexism consists of derogatory patriarchal views, such as the view that most women interpret innocent remarks or acts as being sexist and that they seek to gain power by getting control over men (Glick & Fiske, 1997). Thus, men holding more patriarchal views may be inclined to reinforce their masculinity and dominance by growing facial hair. Consistent with this hypothesis, men with facial hair scored higher for hostile sexism than clean-shaven men, and hostile sexism predicted facial hair status over and above nationality and other demographic variables. Previous research has shown that men's drive for a more muscular appearance is also associated with their hostility toward women and sexist attitudes (Swami & Voracek, 2013). Further, men's drive for muscularity is positively correlated with their support for group-based social dominance hierarchies (Swami et al., 2013a) and muscularity enhances men's physical formidability and attractiveness (Dixson, Grimshaw, Ormsby, & Dixson, 2014; Hill et al., 2013). Taken together, these studies suggest that sexually dimorphic masculine traits are a means by which men can differentiate themselves from women and potentially reinforce their feelings of masculinity and social dominance.

It is unclear why facial hair status was associated with hostile but not benevolent sexism. Overall, facial hair was most frequent among ambivalent sexists (those high in both hostile and

benevolent sexism), but benevolent sexism was not a significant predictor of facial hair status either alone or in combination with hostile sexism. One might expect men high in benevolent sexism to favor facial hair since benevolent sexism is associated with paternal protection, which assumes a form of male dominance. However, perhaps a relationship between facial hair and benevolent sexism would only be evident if facial hair conveyed protection, which implies warmth and trustworthiness. Interestingly, full beards receive higher ratings than clean-shaven faces for long-term relationships and parenting skills (Dixson & Brooks, 2013; Neave & Shields, 2008), but lower ratings for sociability (Muscarella & Cunningham, 1996; Wogalter & Hosie, 1991). However, given the concordance across studies in facial hair conveying age, masculinity, social dominance, and aggressiveness, beards may function like muscularity to reinforce gender roles, which aligns more closely with hostile sexism.

While these data can be interpreted as the choice to grow facial hair being influenced by men's gender attitudes, the correlational nature of the data allows for a number of alternative interpretations. It is possible, for example, that men with facial hair possess more hostile sexist attitudes because both facial hair and masculine gender attitudes are related to levels of circulating testosterone. Facial hair growth is androgen dependent, requiring the conversion of testosterone into dihydrotestosterone via 5 alpha reductase activity (Ebling, 1987; Farthing et al., 1982). In one study, men who chose to grow beards had higher levels of serum testosterone than clean-shaven men (Knussmann & Christiansen, 1989) and testosterone is associated with greater social dominance (van Honk et al., 2014). Another possibility is that growing facial hair causes men to express more hostile sexist attitudes, possibly owing to different social reactions to beards than clean-shaven appearances from peers, colleagues, or other members of social groups. Interestingly, very few experimental studies have been undertaken to test possible causative effects of growing a beard on behavioral changes in men. Clearly, the formation of sexist attitudes in men is complex and likely arises in the context of many interacting social factors. A causal effect of growing a beard on changes in sexist attitudes could be addressed experimentally by recruiting participants who are normally bearded and clean-shaven and inducing beard removal and growth, respectively, and measuring changes in patriarchal attitudes over time.

Our study had some limitations that should be highlighted. Firstly, a shortened version of the Ambivalent Sexism Inventory was used that included four items measuring each construct. Although both scales showed good reliability, they may have captured slightly different concepts of hostile and benevolent sexism than had the full scales been deployed. Further, with only four items each, it was not possible to explore whether facial hair status was particularly related to any of the subcomponents of hostile sexism, such as dominant paternalism, derogatory views, or heterosexual hostility (Glick & Fiske, 1997). Thus, future research should aim to use the full ASI to allow for more fine-scale analyses. Additionally, future research could

incorporate measures of sex-role ideology and masculine identity as possible mediators or moderators of the links between facial hair and sexism.

Secondly, our study included only two cultures and we found significant differences between cultures in both responses to sexism scales and the propensity of men to grow beards. Future studies expanding the sampling regime to include a broader range of cultures, rates of beardedness, and degree of ambivalent and hostile sexist attitudes would also be beneficial. We would expect the relationship between facial hair and sexism to hold across cultures provided individuals are able to grow facial hair and facial hair is not stigmatized or otherwise sanctioned. In addition to beardedness, androgens also reduce cranial hair density and distribution to varying degrees among men (Randall, 2008). While male patterned baldness may lower men's attractiveness, it augments ratings of men's age, masculinity, and aspects of non-threatening social dominance (Muscarella & Cunningham, 1996). Interestingly, men who elected to shave their scalp hair were judged as looking more masculine and dominant than men with naturally thinning hair (Mannes, 2013). Whether or not patterned baldness and shaving head hair are associated with different facets of embodied masculinity would be valuable to determine. It would also be interesting to expand our analysis to women, to examine whether women with more traditional sex-role ideologies (or indeed, hostile and benevolent sexist attitudes) are more or less inclined toward behaviors that enhance the appearance of sexually dimorphic traits via makeup or cosmetic surgery.

For the present, our study reports that facial hair status was related to gender attitudes, with men who scored high in hostile sexism being more likely to grow facial hair than men scoring lower in hostile sexism. Although there are a number of possible interpretations of this relationship, facial hair may appeal to hostile sexist males because it maximizes facial masculinity and augments perceived dominance. This is consistent with the view that male facial hair has both biological and social significance as a cue of social dominance and that both likely interact to determine men's pursuit of a more masculine appearance. We believe our study also contributes to a new area of social psychology and body image exploring the relationships between masculinity and patriarchal views. We hope that it provides some new perspectives on how a highly masculine trait at the interface of culture and biology may relate to underlying patriarchal views in men.

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