

Intra-sexual selection and the evolution of the human beard.

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Abstract

Sexual selection has likely driven the evolution of striking male secondary sexual traits in many primate species, including humans. Yet whether brightly colored patches of skin, capes of hair and beards function as 'badges of status' between males or enhance sexual attractiveness to females is strongly debated. We compared data on male primate ornamentation (including beardedness in men) from 154 species representing 45 genera. Multivariate regressions with phylogenetic correction revealed that ornamentation was most pronounced among males of species with large social group sizes and multi-leveled social organizations. This suggests that in more anonymous settings where individual recognition may be compromised, selection on ornamentation, either as badges of status or attractive traits, is stronger. To test whether beards enhance male attractiveness or formidability, we conducted cross-cultural studies in which participants rated bearded and clean-shaven stimuli across a number of sociosexual attributes. We found that beards enhanced men's ratings of male facial age, masculinity, and social dominance. However, women rated clean-shaven faces as more attractive than bearded faces. Finally, we tested how prevailing environmental factors, including facets of male-male competition, influenced the attractiveness of facial hair. We quantified frequencies in men's beardedness and women's preferences for beards using a large cross-cultural sample spanning more than 30 countries. We found that men were more bearded and the attractiveness of beards was higher in larger more developed cities in which incomes were low. Taken together, our findings suggest that beardedness may have evolved primarily to communicate aspects of social dominance between males and that women's preferences for facial hair may be greater when prevailing environmental conditions are characterized by the need for greater male-male competition.

Keywords:

Human evolution; sexual selection; male-male competition; female choice; facial hair