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## Facial masculinity and fluctuating asymmetry

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### Abstract

Recently, women have been found to prefer the scent of symmetrical men and relatively masculine male faces more during the fertile (late follicular and ovulatory) phases of their menstrual cycles than during their infertile (e.g., luteal) phases. These findings make most theoretical sense if men's symmetry is associated with the masculinity of their faces and, therefore, men's symmetry and facial masculinity tap a shared underlying quality. This study examined associations between masculine facial features and nonfacial body symmetry as well as facial symmetry in samples of 141 men and 154 women. As predicted, a component of facial features that discriminates the sexes and reflects masculinization of the face significantly covaried with symmetry in men. No significant correlation was observed for women. These findings suggest that men's facial masculinity partly advertises underlying developmental stability.

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### 1. Introduction

Recently, Perrett, Penton-Voak, and colleagues have reported two surprising findings regarding male facial attractiveness. They digitized male and female faces, composited these images to create average sex-specific faces, and then blended or exaggerated differences between the composites to create male faces varying in masculinity. First, they found that

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women in the UK and Japan generally prefer male faces that are slightly feminized, not hypermasculinized (Perrett et al., 1998). Perrett et al. speculated that feminized faces are perceived to promise willingness to invest exclusively in a mate (Berry & Wero, 1993; Cunningham, Druen, & Barbee, 1997; Graziano, Jensen-Campbell, Todd, & Finch, 1997; Johnston, Hagel, Franklin, Fink, & Grammer, 2001), which may be traded off when women select a mate who possesses a masculine face perhaps indicative of other valuable traits (e.g., social dominance; Mazur & Booth, 1998; Mueller & Mazur, 1997; Swaddle & Reiersen, 2002). The literature is not consistent in this regard, however; other studies have found that women find masculine faces more attractive (e.g., Johnston et al., 2001; Keating, 1985) or that they prefer neither masculinized nor feminized faces over average faces (e.g., Swaddle & Reiersen, 2002).

Secondly, Penton-Voak et al. (1999) found that women's attraction to men's facial masculinity–femininity shifts across the cycle. Gangestad and Thornhill (1998a) reported that women prefer the scent of men who possess low fluctuating asymmetry (FA), but only during the fertile phase of their cycle. FA is a marker of developmental instability: imprecise expression of developmental design due to developmental perturbations (e.g., mutations, pathogens, toxins) or inability to deal with these perturbations (Gangestad & Thornhill, 1999; Møller 1999; Møller & Swaddle, 1997). This pattern has been replicated in three additional studies (Rikowski & Grammer, 1999; Thornhill & Gangestad, 1999a; Thornhill et al., in press). Gangestad and Thornhill conjectured that the value that women have evolved to place on indicators of good investment on the one hand and genetic benefits on the other hand shifts across the menstrual cycle. Women should have evolved to place greater value on genetic benefits when they are fertile and hence can obtain those benefits for their offspring than when nonfertile, particularly when extrapair sex is a possibility. Penton-Voak et al. reasoned that if, as they previously speculated, feminine features in a man advertise willingness to invest in a mate whereas masculinity advertises allocation to intrasexual competition (which may be condition dependent and partly heritable), women might prefer greater masculinity near ovulation. This prediction has now been supported in four published studies in four different countries (UK, Japan, US, and Austria) (Johnston et al., 2001; Penton-Voak & Perrett, 2000; Penton-Voak et al., 1999 [two studies]). Although the notion that genetic benefits (in ancestral populations) account for these preference shifts remains speculative (e.g., Gangestad & Simpson, 2000; Kirkpatrick, 1996; Thornhill & Gangestad, in press), systematic shifts of preferences are well established.

These results make most theoretical sense if, in fact, men who possess low FA also have more masculine facial features on average, such that male symmetry and facial masculinity tap a shared underlying quality (Thornhill & Gangestad, 1993), but little work has systematically examined this association. Penton-Voak et al. (2001) found no significant correlation between male facial symmetry and masculinity; interestingly, however, a composite of the most symmetrical faces in their study was rated as more masculine than a composite of the least symmetrical faces. Scheib, Gangestad, and Thornhill (1999) found significant positive associations between male facial symmetry and features that may be related to facial masculinity (e.g., lower face length). The current

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