

## Facial attractiveness signals different aspects of “quality” in women and men

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### Abstract

We explored the relationships between facial attractiveness and several variables thought to be related to genotypic and phenotypic quality in humans (namely fluctuating asymmetry (FA), body mass index (BMI), health, age). To help resolve some controversy around previous studies, we used consistent measurement and statistical methods and relatively large samples of both female ( $n=94$ ) and male ( $n=95$ ) subjects (to be evaluated and measured), and female ( $n=226$ ) and male ( $n=153$ ) viewers (to rate attractiveness). We measured the asymmetry of 22 traits from three trait families (eight facial, nine body and five fingerprint traits) and constructed composite asymmetry indices of traits showing significant repeatability. Facial attractiveness was negatively related to an overall asymmetry index in both females and males, with almost identical slopes. Female facial attractiveness was best predicted by BMI and past health problems, whereas male facial attractiveness was best predicted by the socioeconomic status (SES) of their rearing environment. Composite FA indices accounted for a small (<4%) but usually significant percentage of the variation in facial attractiveness in both sexes, when factors related to asymmetry were controlled statistically. We conclude that, although facial attractiveness is negatively related to developmental instability (as measured by asymmetry), attractiveness also signals different aspects of “quality” in the two sexes, independent of FA. © 2001 Elsevier Science Inc. All rights reserved.

*Keywords:* Fluctuating asymmetry; Facial attractiveness; Sexual selection; BMI

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Humans prefer to associate with, date, and mate with facially attractive individuals (Barber, 1995; Buss, 1994; Patzer, 1985; Walster, Aronson, Abrahams, & Rottman, 1966) and attractive people are considered to be more successful, interesting and intelligent than

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unattractive people (Dion, Berscheid, & Walster, 1972). But what is it that attractiveness signals to potential mates? Sexual selection theory predicts that individuals gain some aspect of quality for their offspring by mating with attractive individuals, either by obtaining good genes or getting a mate that will be a good parent (Andersson, 1994).

Over the last 10 years, several studies have investigated the relation between attractiveness and the fluctuating asymmetry (FA) of body traits. FA, small deviations from perfect bilateral symmetry, is thought to be an index of underlying developmental instability (Palmer & Strobeck, 1986), and is thus expected to be an index of genetic quality (reviewed in Gangestad, 1993; Gangestad & Thornhill, 1997a; Thornhill & Gangestad, 1996). For example, individuals with low levels of facial (Rikowski & Grammer, 1999) and body asymmetry (Gangestad, Thornhill, & Yeo, 1994) seem to be most attractive and FA is lower in healthy people (Shackelford & Larsen, 1997) who are also considered more attractive (Grammer & Thornhill, 1994; Shackelford & Larsen, 1999, but see Kalick, Zebrowitz, Langlois, & Johnson, 1998). Thus, attractiveness seems to be positively related to the degree to which an individual copes with stresses during development (i.e., developmental stability as revealed by FA). We assume that human assessment of physical attractiveness has evolved because attractiveness was related to some aspect of “quality” in ancestral environments (Gangestad et al., 1994).

In the present study, we tested whether facial attractiveness signals “quality” in humans by examining how attractiveness is related to age, indices of health and the FA of physical traits. In conducting this study, we had three primary aims. First, we wanted to bring together in one study a methodology that uses a number of developmentally and quantitatively dissimilar traits to critically examine the prediction that attractiveness is negatively related to FA in humans. Second, we determined whether any other variables might be responsible for the apparent relationship between attractiveness and FA (e.g., body mass index or BMI, as suggested by Thornhill & Grammer, 1999). Third, we analyzed the attractiveness (to the opposite sex) of male and female faces separately, so we could compare the traits that attractiveness appears to signal.

Our study responds to the scarcity of research measuring the FA of different kinds of traits by measuring a total of 22 traits comprising three trait families (eight facial, nine body and five fingerprint). Previous studies of attractiveness and FA have typically measured only one trait or a small family of traits: body asymmetry (e.g., length of digits, width of joints: Gangestad et al., 1994; Thornhill & Gangestad, 1994; Thornhill, Gangestad, & Comer, 1995) or facial asymmetry (e.g., asymmetry of nose and jaw: Grammer & Thornhill, 1994; Scheib, Gangestad, & Thornhill, 1999; Shackelford & Larsen, 1997). A notable exception to this single trait family approach is a recent study by Rikowski and Grammer (1999) that measured asymmetry in both facial and body traits of a mixed sex sample. Rikowski and Grammer found that facial asymmetry in males was significantly negatively related to their attractiveness, but they did not find any relationship between attractiveness and body asymmetry of males nor between attractiveness and asymmetry in any trait category of females.

Each of the three trait families that we measured is developmentally different: facial traits develop throughout life and are considered by some to be secondary sexual traits (Møller & Thornhill, 1998; Thornhill & Grammer, 1999). In contrast, the body traits we measured (ankles, feet, fingers, wrists, ears) are not considered to be sexually selected nor directly

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