

## PART 2

# MATE CHOICE BASED ON PHYSICAL CHARACTERISTICS

### Introduction

What physical traits are used by men and women as criteria in choosing a mate, and why? Do all members of a society exhibit the same preferences, or are there differences between and even within individuals related to experience, condition, situation, etc.? Are alternative mating tactics used by less “attractive” individuals? How stable are standards of beauty across societies and historical periods? These are some of the questions addressed by the five papers in this section. The traits considered are the major histocompatibility complex (MHC), the waist-to-hip ratio (WHR), facial features including symmetry and averageness, and fluctuating asymmetry (FA).

In the first paper, Ihara Yasuo reviews the evidence for disassortative (negative assortative) mating with regard to MHC genes. The “t-shirt experiments” by Wedekind and his colleagues (Wedekind et al. 1995; Wedekind & Furi 1997) have shown that subjects find the odor of target individuals who differ genetically from themselves to be pleasant and sexy. If such odor preference is reflected in actual marriages, spousal MHC types should be more dissimilar than had mating been at random. To date, disassortative mating with regard to MHC genes has only been demonstrated in the Hutterites (Ober et al. 1997). Two other recent studies—by Hedrick and Black (1997) on eleven South Amerindian tribes, and by Ihara et al. (2000) on twenty-two regional Japanese populations—produced negative results.

Ihara also discusses the reasons why a preference for MHC-dissimilar mates may be adaptive (Brown & Eklund 1994; Penn & Potts 1999). The three major hypotheses are: 1) offspring are more likely to be heterozygotes that are able to deal with more antigens; 2) offspring will tend to differ genetically from both parents, whence they will be more resistant to parasites afflicting the parental generation; 3) offspring are less likely to be inbred (see also Wolf this volume).

Devendra Singh, the author of the second paper of this section, is well known for his provocative hypothesis that men are universally attracted to women with a low waist-to-hip ratio (WHR)—specifically a value of about 0.7. His initial observations on American white and Hispanic subjects (Singh 1993) have been replicated in many studies, but with two notable exceptions (Singh this volume). Since WHR is an accurate indicator of a woman’s health and fertility, at least in the developed world (Zaadstra et al. 1993; Waas et al, 1997), Singh argues that such a preference is adaptive, whence it has evolved to become a panhu-

man male characteristic. However, men in subsistence societies desire heavier women, which—because of the positive correlation between weight and WHR—results in a preference for a tubular female figure (Yu & Shepard 1998; Wetsman & Marlowe 1999).

Still, it remains true that a low WHR is preferred in the majority of societies studied to date. In response to the objection that indigenous tastes may have recently been altered by exposure to Western culture, Singh points out that often, as in India, not all customs change. So why should attitudes toward WHR be so flexible? In addition, Singh looks at sculptures and romantic poems depicting women in several geographically distant historical societies. At least in the societies he samples, a low WHR is apparently an attribute of a beautiful woman.

The third (Little et al.) and fourth (Rhodes and Halberstadt) papers are about facial attractiveness. Many studies have demonstrated that people agree in finding symmetry and averageness attractive in a face (Langlois & Roggman 1990; Jones & Hill 1993; Grammer & Thornhill 1994; Rhodes et al. 1998; Perrett et al. 1999; Rubenstein et al. 1999).

A.C. Little et al. review the recent work of David Perrett and his colleagues on variation in facial preference. Photographed faces of engaged and newly married couples tend to look similar as judged by other people (Griffiths & Kunz 1973; Hinsz 1989). Although it is not clear why this is so, two possibilities are suggested. First, assortative mating for personality (Botwin et al. 1997) may result in “partners [who] look similar in personality.” Second, sexual imprinting on the facial features of parents may generate a weak preference for self-similar faces.

Using faces manipulated with computer graphics, Perrett et al. (1998) have previously shown that women prefer slightly feminized male facial shapes. However, women who regard themselves as attractive show an increased preference for relatively masculine faces. Little et al. argue that mating with such a male may be a condition dependent female tactic (see also Waynforth this volume), since her children may inherit their father’s immunological competence but at the risk of reduced paternal investment. Finally, there may be short-term changes in female preferences for male faces over the menstrual cycle (Penton-Voak et al. 1999).

The next paper by Gillian Rhodes and Jamin Halberstadt returns to the basic theme that symmetrical and average faces are attractive. They ask whether facial symmetry and averageness provide cues to mate quality, in particular whether there is an association with health. Facial photographs of seventeen-year-olds were rated for symmetry and averageness by participants from the general public. Health ratings made by physicians were also available for these individuals from childhood to adulthood. Facial symmetry was not correlated with health at any age. On the other hand, averageness was correlated with childhood health in males and with current and adolescent health in females.

These observations suggest that attraction to averageness may be an evolved psychological mechanism specific to faces to identify high quality mates. Alternatively, a preference

for average faces may be the by-product of a more general perceptual mechanism that evolved in a different context. Rhodes and Halberstadt test this very reasonable conjecture by looking at the correlations between averageness and attractiveness ratings for dogs, birds, and watches. The reader is encouraged to discover the outcome by reading their paper.

The fifth paper by David Waynforth postulates a “nice guy” tactic of intensive paternal effort that is pursued by less attractive men. Fluctuating asymmetry (FA) is deviation from symmetry in bilateral body features. Men with low FA have more lifetime sex partners and father more children (Thornhill & Gangestad 1994; Baker 1997; Gangestad & Thornhill 1997; Waynforth 1998). Hence, Waynforth argues that, to obtain mates, men with high FA may resort to the conditional tactic of being a nice guy. In both the Mayan and U.S. undergraduate samples, number of sex partners was significantly negatively associated with self-reported nice guy score. However, in neither sample were men with high FA more likely to rate themselves as nice guys.

## References

Baker, R.

1997. Copulation, masturbation and infidelity: State-of-the-art. In A. Schmitt, K. Atzwanger, K. Grammer & K. Schafer (eds.). *New Aspects of Human Ethology*, 163-188. New York: Plenum.

Botwin, M.D., Buss, D.M., & Shackelford, T.K.

1997. Personality and mate preferences: Five factors in mate selection and marital satisfaction. *Journal of Personality* 65: 107-136.

Brown, J.L. & Eklund, A.

1994. Kin recognition and the major histocompatibility complex: An integrative review. *The American Naturalist* 143: 435-461.

Gangestad, S. & Thornhill, R.

1997. Human sexual selection and developmental stability. In J. Simpson & D. Kenrick (eds.). *Evolutionary Social Psychology*. Mahwah, NJ: Lawrence Erlbaum Associates.

Grammer, K. & Thornhill, R.

1994. Human (*Homo sapiens*) facial attractiveness and sexual selection: The role of symmetry and averageness. *Journal of Comparative Psychology* 108: 233-242.

Griffiths, R.W. & Kunz, P.R.

1973. Assortative mating: A study of physiognomic homogamy. *Social Biology* 20: 448-453.

Hedrick, P.W. & Black, F.L.

1997. HLA and mate selection: No evidence in South Amerindians. *American Journal of Human Genetics* 61: 505-511.

- Hinsz, V.B.  
 1989. Facial resemblance in engaged and married couples. *Journal of Social and Personal Relationships* 6: 223-229.
- Ihara, Y., Aoki, K., Tokunaga, K., Takahashi, K., & Juji, T.  
 2000. HLA and human mate choice: Tests on Japanese couples. *Anthropological Science* 108: 199-214.
- Jones, D. & Hill, K.  
 1993. Criteria of facial attractiveness in five populations. *Human Nature* 4: 271-296.
- Langlois, J.H. & Roggman, L.A.  
 1990. Attractive faces are only average. *Psychological Science* 1: 115-121.
- Ober, C., Weitkamp, L.R., Cox, N., Dytch, H., Kostyu, D., & Elias, S.  
 1997. HLA and mate choice in humans. *American Journal of Human Genetics* 61: 497-504.
- Penn, D.J. & Potts, W.K.  
 1999. The evolution of mating preferences and major histocompatibility complex genes. *The American Naturalist* 153: 145-164.
- Penton-Voak, I.S., Perrett, D., Castles, D., Burt, M., Kobayashi, T., & Murray, L.K.  
 1999. Female preferences for male faces change cyclically. *Nature* 399: 741-742.
- Perrett, D.I., Burt, D.M., Penton-Voak, I.S., Lee, K.J., Rowland, D.A., & Edwards, R.  
 1999. Symmetry and human facial attractiveness. *Evolution and Human Behavior* 20: 295-307.
- Perrett, D.I., Lee, K.J., Penton-Voak, I.S., Rowland, D.R., Yoshikawa, S., Burt, D.M., Henzi, S.P., Castles, D.L., & Akamatsu, S.  
 1998. Effects of sexual dimorphism on facial attractiveness. *Nature* 394: 884-887.
- Rhodes, G., Proffitt, F., Grady, J., & Sumich, A.  
 1998. Facial symmetry and the perception of beauty. *Psychonomic Bulletin and Review* 5: 659-669.
- Rubenstein, A.J., Kalakanis, L., & Langlois, J.H.  
 1999. Infant preferences for attractive faces: A cognitive explanation. *Developmental Psychology* 15: 848-995.
- Singh, D.  
 1993. Adaptive significance of female physical attractiveness: Role of waist-to-hip ratio. *Journal of Personality and Social Psychology* 65: 292-307.
- Thornhill, R. & Gangestad, S.  
 1994. Fluctuating asymmetry and human sexual behavior. *Psychological Science* 5: 297-302.
- Waas, P., Waldenstrom, U., Rossner, S., & Hellberg, D.  
 1997. An android body fat distribution in females impairs the pregnancy rate of in-vitro fertilization - embryo transfer. *Human Reproduction* 12: 2057-2060.

Waynforth, D.

1998. Fluctuating asymmetry and human male life-history traits in rural Belize. *Proceedings of the Royal Society of London, Biological Sciences* 265: 1497-1501.

Wedekind, C. & Furi, S.

1997. Body odor preferences in men and women: Do they aim for specific MHC combinations or simply heterozygosity? *Proceedings of the Royal Society of London, Series B*, 264: 1471-1479.

Wedekind, C., Seebeck, T., Bettens, F., & Paepke, A.J.

1995. MHC-dependent mate preferences in humans. *Proceedings of the Royal Society of London, Series B*, 260: 245-249.

Wetsman, A. & Marlowe, F.

1999. How universal are preferences for female waist-to-hip ratio? Evidence from the Hazda of Tanzania. *Evolution and Human Behavior* 20: 219-228.

Yu, D.W. & Shepard, G.H.

1998. Is beauty in the eye of the beholder? *Nature* 396: 321-322.

Zaadstra, B.M., Seidell, J.C., H. van Noord, P.A., te Velde, E.R., Habbema, J.D.F.,

Vrieswijk, B., & Karbaat, J.

1993. Fat and female fecundity: Prospective study of body fat distribution and conception rates. *British Medical Journal* 306: 484-487.