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Investigating an imprinting-like phenomenon in humans Partners and opposite-sex parents have similar hair and eye colour

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Abstract

Research has shown that human partners are more similar than expected by chance on a variety of traits. Studies examining hair and eye colour show some evidence of positive assortment. Positive assortment may reflect attraction to self-similar characteristics but is also consistent with attraction to parental traits. Here, we examine self-reported partner hair and eye colour and the influence that own and parental colour characteristics have on these variables. Parental characteristics were found to correlate positively with actual partner characteristics for both men and women. Regression analysis predicting partner characteristics from maternal and paternal traits (which controls for own traits) revealed the greater importance of the opposite-sex parent over the same-sex parent in predicting both hair and eye colour of actual partners. The findings may reflect an influence of parental colour characteristics on human partner choice. Attraction to opposite-sex parental characteristics is seen in a wide variety of animals where it is usually attributed to imprinting processes in infancy. Although the mechanism is unclear and not necessarily confined to infancy, the data reported here are consistent with a somewhat analogous process to imprinting occurring in humans.

Keywords: Parental influence; Hair colour; Eye colour; Imprinting; Assortative mating

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1. Introduction

It is a widespread belief that human partners look alike. Positive assortative mating, mating with partners more similar than expected by chance, may result in more stable partnerships (e.g., Hill, Rubin, & Peplau, 1976) and may have genetic benefits (e.g., Rushton, 1988; Thiessen & Gregg, 1980), although costs of inbreeding may limit the amount of self-similarity that should be tolerated (e.g., Bateson, 1980). Research has shown positive assortment ($r = .01 - .35$) for many physical features (reviewed by Spuhler, 1968), and partners' faces resemble each other in ways that allow them to be identified as partners at levels above chance (Griffiths & Kunz, 1973; Hinsz, 1989; Zajonc, Adelmann, Murphy, & Niendenthal, 1987).

If assortative mating for a variety of traits is genuine and is due to active mate choice, how do individuals comes to be attracted to (or avoid) self-similar traits? While it is conceivable that animals recognise kin through similarity to their own phenotype (e.g., Petrie, Krupa, & Burke, 1999), there is considerably more evidence of effects of early exposure to parental characteristics on later mate preferences (e.g., Bateson, 1980; Fujita, Watanabe, Widarto, & Suryoboto, 1993; Kendrick, Hinton, & Atkins, 1998; Vos, 1995). Positive assortative mating with respect to heritable characteristics should result from such imprinting even if there is no direct response to one's own phenotype.

Negative imprinting has been proposed to play a role in human mate choice. Westermarck (1894) argued that children have an innate tendency to develop a sexual aversion to individuals with whom they live closely in infancy and early childhood (usually siblings and parents). In other animals, however, parental characteristics have generally been found to be attractive in potential mates later in life, not aversive.

The idea of attraction to the opposite-sex parent's form has been a popular one since Freud (1927) and several studies indeed suggest that parental characteristics may influence partner choice. For example, Wilson and Barrett (1987) and Zei, Astolifi, and Jayakar (1981) have both reported small but significant tendencies for the daughters of older men to choose older partners, but of course, this may reflect inheritance of maternal mate choice preferences rather than an influence of paternal appearance. Race is also an observable parental trait, and Jedlicka (1980) found that children of mixed race marriages were more likely to marry someone of the same race as their opposite-sex parent than someone of the same race as their same-sex parent; such choices were consistent across first and second marriages.

Preferences have also been shown to vary in relation to parental traits. Perrett et al. (2002) investigated whether parental age predicted preferences for faces of different ages, and found that both men and women born to old parents were less impressed by youth and more positive to age cues in opposite-sex faces than were individuals with young parents. Thus, visual attraction to parental traits is a plausible explanation for the findings of correlations between parent and partner characteristics.

Hair and eye colour are other parental characteristics that offspring may learn. Significant correlations are found between own and partner's hair and eye colour, indicating assortative mating for these colour traits (Pearson, 1907; Pearson & Lee, 1903; Schiller, 1932). Wilson