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Research Article

SOCIOSEXUALITY AND RELATIONSHIP STATUS INTERACT TO PREDICT FACIAL SYMMETRY PREFERENCES

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ABSTRACT

Past research demonstrates that the relationship between sociosexual orientation and "good genes" face preferences is moderated by participants' own relationship status. Specifically, those women who are relatively sexually unrestricted demonstrate a greater preference for sexual dimorphism in faces, but only when unpartnered; for partnered women, sociosexuality does not predict preferences for sexual dimorphism. The current study extended these findings by assessing whether sociosexuality and relationship status interact to influence preferences for a different phenotypic cue, facial symmetry, in both male and female targets. A secondary hypothesis assessed whether this pattern of face preferences was moderated by either participant or target sex. Men and women completed a symmetry preference task, the sociosexual orientation inventory, and were asked to report their relationship status. Unrestricted sociosexual orientation predicted a heightened preference for facial symmetry in both male and female faces, but only in unpartnered participants. This effect was not qualified by participant gender. These findings provide additional evidence that an important moderating variable when assessing the association between mating personality (i.e., sociosexual orientation) and "good genes" face preferences is an individual's own relationship status.

Key words: *face perception, evolution, sociosexuality, relationship status*

INTRODUCTION

In sexually reproducing organisms, including humans, producing healthy offspring is contingent upon one's own genetic quality (e.g., mutation load) and that of any partner(s) one produces offspring with. Given that organisms cannot directly improve their own genetic quality, it would be adaptive to possess strategies for identifying mating partners of high genetic quality with whom to mate. Although evolution did not endow organisms with the ability to detect genetically healthy partners directly, the fact that genes code for observable phenotypic qualities means that organisms can potentially identify mates of relatively higher genetic quality through detection of, and preference for, certain physical cues in faces and bodies (e.g., Rhodes, 2006).

Indeed, a wealth of research has not only demonstrated that individuals perceive certain physical characteristics as more or less attractive, but also that those preferred traits are associated with underlying health and disease resistance (Gangestad & Scheyd, 2005). For example, cross-cultural evidence indicates that people are attracted to individuals with more bilaterally symmetric faces as well as sexually dimorphic facial characteristics (among other phenotypic cues). Such differential preferences are adaptive. High facial symmetry is associated with fewer deleterious genetic mutations and higher levels of disease resistance (Gangestad, Thornhill, & Yeo, 1994), and more facially symmetric individuals have been shown to suffer fewer respiratory infections over their lifetime than their less symmetric counterparts (Thornhill & Gangestad, 2006). In regard to sexual dimorphism, feminization of female faces is a consequence of exposure to estrogen during development and is associated with female reproductive value and fecundity, whereas masculinization of male faces is a consequence of testosterone exposure and has been associated with greater immune function (Rhodes, 2006; Rhodes, Chan, Zebrowitz, & Simmons, 2003; Smith et al., 2006).

While such adaptive face preferences have shown remarkable cross-cultural consistency (see Rhodes, 2006), additional evidence has demonstrated that they are moderated by individual characteristics, most notably aspects of mating personality and current relationship status. For example, one of the most common moderators of "good genes" face preferences is the extent to which individuals adopt a short-term (unrestricted) versus long-term (restricted) mating strategy. When this construct, as measured by the Sociosexual Orientation Inventory (SOI, SOI-R; Penke & Aspendorf, 2008; Simpson & Gangestad, 1991), is included in research on adaptive face preferences, the results demonstrate that individuals with a more unrestricted mating personality show stronger preferences for facial symmetry and sexual dimorphism in faces compared to those with a more restricted mating personality (e.g., Quist, Watkins, Smith, Little, DeBruine, & Jones, 2012; Sacco, Hugenberg, & Sefcek, 2009; Waynforth, Delwadia, & Camm, 2005). These results are consistent with theoretical predictions derived from evolutionary theory in that the short-term mating strategy adopted by unrestricted individuals leads them to emphasize physical characteristics related to health and disease-resistance to a greater extent than those with long-term mating strategies (sexually restricted individuals).

Relatedly, recent research has demonstrated that individuals' current relationship status can moderate how individual differences in sociosexuality influence preferences for "good genes" features in faces. Specifically, Sacco and colleagues (2012) measured women's sociosexual orientation and their current relationship status, and then asked them to complete a forced-choice task measuring their preference for sexual dimorphism in faces (i.e., masculinity in male faces and femininity in female faces). Specifically, participants saw pairs of male or female faces, with each pair containing a masculinized and feminized version of a target identity, and were tasked with indicating which face they preferred more. The results indicated that unrestricted sociosexual orientation was associated with a stronger preference for sexual dimorphism in male and female faces, but only in women who were not currently in a committed relationship; for partnered women, there was no relationship between individual differences in sociosexual orientation and preferences for sexual dimorphism in faces. Because partnered women's long-term mating goals have already been met, such women typically show preferences that are more focused on short-term mating characteristics such as male masculinity (Little et al., 2002); however, unpartnered women tend to show more systematic variability in the extent to which their preferences are focused on characteristics beneficial for short-term versus long term relationships (because long-term mating goals have not yet been met). Thus, it is likely that individual differences should better tap into variability in mate preferences for unpartnered compared to partnered women.

Given initial evidence that relationship status and mating personality (sociosexual orientation) have an interactive effect on preferences for "good genes" cues in faces, the current study sought to replicate and extend these findings in two ways. Primarily, the current study assessed preferences for facial symmetry in the context of sociosexual orientation and relationship status. Considering that previous research investigated preferences for sexual dimorphism in faces (Sacco et al., 2012), the current study was designed to test how broadly relationship status and sociosexuality influence preferences for other "good genes" cues in faces. As a secondary goal, the current study included a sample of male participants to determine if such findings are specific to female mating strategies or apply more generally to both men and women; given that men also value cues to genetic quality and health in faces (e.g., Little, Jones, Feinberg, & Perrett, 2014), it was hypothesized that participant gender would not moderate the relationship between sociosexual orientation, relationship status, and preferences for facial symmetry.

In order to test these predictions, men and women completed a forced-choice preference task that assessed their preference for symmetry in men's and women's faces, and then completed questionnaires assessing sociosexual orientation and current relationship status. We predicted that more sexually unrestricted participants would show a stronger preference for symmetry in men's and women's faces, but only in unpartnered participants; for partnered participants, we did not expect sociosexuality to be related to facial symmetry preferences. Moreover, we did not expect participant gender or target sex to moderate these findings.

METHODS

A sample of eighty-nine undergraduate participants reported to an experimental laboratory for a study on personality and face preferences. Participants volunteered to complete the study for partial course credit and signed up to participate via the psychology department's research participation recruitment system (SONA). One male participant's symmetry preference data was not recorded due to a computer error. Because this study was interested in understanding heterosexual mating preferences, an additional eight participants' data (seven women, 1 man) were excluded from analysis. This resulted in a final sample of 80 participants (13 single men, 28 single women; 8 partnered men, 31 partnered women). After obtaining informed consent, participants were instructed that they would complete a face preference task in which they would see pairs of male and female faces and would be asked to indicate which face they preferred more. During this task, participants were randomly presented with 20 counterbalanced face pairs (10 male pairs and 10 female pairs). Each pair consisted of one target facial identity, manipulated such that one version was high in facial symmetry while the other was low in facial symmetry (stimulus set borrowed from Quist et al., 2012). On each trial, participants were instructed to indicate which of the two faces they preferred (similar to past research, we chose to ask individuals to indicate preference in a non-sexual format so that participants could rate same and opposite sex faces; Young, Sacco, & Hugenberg, 2011). Following the symmetry preference task, participants completed the Sociosexual Orientation Inventory Revised (SOI-R; Penke & Aspendorf, 2008) and a brief demographic questionnaire which included a question about their current relationship status (as well as their sexual orientation). Participants were thanked for their participation and debriefed.

RESULTS

To test our primary hypothesis, we calculated preferences for symmetric male and female faces separately by dividing the number of times participants chose the symmetric target by the total number of trials for male and female faces, respectively. As the sociosexual orientation inventory consists of three subscales (behavior, attitudes, and desire), we computed an average SOI score for each participant (see Sacco et al., 2012 for similar treatment of SOI data). To test our primary and secondary hypotheses, we conducted a 2 participant sex (male, female) x 2 relationship status (partnered, unpartnered) x 2 symmetry target sex (male, female) custom mixed model ANOVA, with repeated measures over the last factor, and included participant SOI and age as covariates (as our hypotheses were about mating preferences, we thought it prudent to control for any impact of age). There was a main effect of relationship status, $F(1,71)=4.08$, $p=.047$, $\eta_p^2=.054$, such that partnered individuals ($M=.90$, $SD=.12$) indicated stronger symmetry preferences than unpartnered individuals ($M=.88$, $SD=.13$), which is consistent with past research demonstrating that people in relationships tend to have preferences focused more on short-term mating characteristics (Little et al., 2002).

Importantly, the only other significant effect to emerge was the critical interaction between sociosexual orientation and relationship status in predicting facial symmetry preferences, $F(1,71)=4.16$, $p=.045$, $\eta_p^2=.055$. Because this interaction was not qualified by participant sex, $F(1,71)=1.37$, $p=.25$, $\eta_p^2=.019$, we tested the correlation between sociosexual orientation and symmetry preferences separately for unpartnered and partnered participants. For unpartnered participants, there was a marginally significant positive correlation between sociosexuality and symmetry preferences, $r(39)=.298$, $p=.059$, such that single participants with a more unrestricted sociosexual orientation indicated a stronger preference for symmetry in male and female faces. For partnered participants, however, the relationship between sociosexuality and symmetry preferences was nonsignificant, $r(37)=-.075$, $p=.652$.

DISCUSSION

While past research has explored the kinds of phenotypic cues that individuals prefer in others' faces that connote underlying genetic quality and health (see Rhodes, 2006 for a review), as well as how such preferences may be influenced by mating personality (i.e., sociosexuality) and relationship status (e.g., Sacco et al., 2012), the current results extend these findings in several important ways. Foremost, past research exploring how sociosexuality and relationship status interact to influence "good genes" face preferences examined one cue specifically: preferences for sexual dimorphism in faces. However, numerous other facial features connote genetic viability and convergent evidence across different facial feature preferences is necessary to determine how broadly sociosexuality and relationship status influence face preferences. Secondly, prior research on this topic explored how sociosexuality and relationship status interact to influence face preferences for women only. Because men are also motivated to identify healthy conspecifics, it was also important to determine if these previous findings are qualified by participant gender.

By including male participants and assessing preferences for facial symmetry, the current study both replicated and extended the previous literature by demonstrating that relationship status and sociosexuality interact to influence "good genes" preferences more broadly. That is, sociosexuality also predicts preferences for symmetry in faces for unpartnered individuals, but not partnered individuals. Furthermore, this relationship between sociosexuality and face preferences does not appear to be moderated by participant gender.

Although the sample of participants utilized in the current study was relatively small, particularly our sample of male participants, the data were collected in a controlled laboratory setting, thus exerting more control over extraneous variables during data collection. Furthermore, even with a relatively small sample, our findings are consistent with both previous literature (Sacco et al., 2012) and with evolutionary theory more generally (e.g., Gangestad & Scheyd, 2005). Nonetheless, it would be beneficial for future research to replicate the current findings using a larger sample of male participants. A potentially

surprising finding in the current study is the fact that both unpartnered men and women with a more unrestricted sociosexual orientation demonstrated greater symmetry preferences for both male and female faces, rather than just opposite sex faces. This finding suggests that it may be adaptive for heterosexual individuals motivated by a short-term mating strategy to be sensitive to others who may be a source of reproductive opportunity (attractive opposite sex targets) as well as individuals who may be a source of intrasexual threat (attractive same sex targets; see Sacco et al., 2009). Nonetheless, given the now growing literature on how relationship status moderates the relationship between mating personality and "good genes" face preferences, it seems prudent for future research to account for participants' relationship status when exploring how aspects of mating personality influence adaptive face preferences.

REFERENCES

Gangestad, S. W., & Scheyd, G. J. (2005). The evolution of human physical attractiveness. *Annual Review of Anthropology, 34*, 523-548.

Gangestad, S. W., Thornhill, R., & Yeo, R. A. (1994). Facial attractiveness, developmental stability, and fluctuating asymmetry. *Ethology and Sociobiology, 15*, 73-85.

Little, A., C., Jones, B. C., Feinberg, D. R., & Perrett, D. I. (2014). Men's strategic preferences for femininity in female faces. *British Journal of Psychology, 105*, 364-381.

Little, A.C., Jones, B.C., Penton-Voak, I.S., Burt, D.M., & Perrett, D.I. (2002). Partnership status and the temporal context of relationships influence human female preferences for sexual dimorphism in male face shape. *Proceedings of the Royal Society of London, 269*, 1095-1100.

Penke, L., & Asendorpf, J. B. (2008). Beyond global sociosexual orientations: A more differentiated look at sociosexuality and its effects courtship and romantic relationships. *Journal of Personality and Social Psychology, 95*, 1113-1135.

Rhodes, G. (2006). The evolutionary psychology of facial beauty. *Annual Review of Psychology, 57*, 199-226.

Rhodes, G., Chan, J., Zebrowitz, L. A., & Simmons, L. W. (2003). Does sexual dimorphism in human faces signal health? *Proceedings of the Royal Society of London. Series B: Biological Sciences, 270* (Suppl 1), S93-S95.

Sacco, D.F., Hugenberg, K., & Sefcek, J.A. (2009). Sociosexuality and face perception: Unrestricted sexual orientation facilitates sensitivity to female facial cues. *Personality and Individual Differences, 47*, 777-782.

Sacco, D. F., Jones, B. C., DeBruine, L. M., & Hugenberg, K. (2012). The roles of sociosexual orientation and relationship status in women's face preferences. *Personality and Individual Differences, 53*, 1044-1047.

Simpson, J. A., & Gangestad, S. W. (1991). Individual differences in sociosexuality: evidence for convergent and discriminant validity. *Journal of personality and social psychology, 60*, 870-883.

Smith, M. L., Perrett, D. I., Jones, B. C., Cornwell, R. E., Moore, F. R., Feinberg, D. R., ... & Hillier, S. G. (2006). Facial appearance is a cue to oestrogen levels in women. *Proceedings of the Royal Society B: Biological Sciences*, *273* (1583), 135-140.

Thornhill, R., & Gangestad, S.W. (2006). Facial sexual dimorphism, developmental stability, and susceptibility to disease in men and women. *Evolution and Human Behavior*, *27*, 131-144.

Quist, M.C., Watkins, C.D., Smith, F.G., Little, A.C., DeBruine, L.M., & Jones, B.C. (2012). Sociosexuality predicts women's preferences for symmetry in men's faces. *Archives of Sexual Behavior*, *41*, 1415-1421.

Waynforth, D., Delwadia, S., & Camm, M. (2005). The influence of women's mating strategies on preference for masculine facial architecture. *Evolution and Human Behavior*, *26*, 409-416.

Young, S.G., Sacco, D.F., & Hugenberg, K. (2011). Vulnerability to disease is associated with a domain-specific preference for symmetrical faces relative to symmetrical non-face stimuli. *European Journal of Social Psychology*, *41*, 558-563.