



Men's Mating Orientation Does Not Moderate the Accuracy with which they Assess Women's Mating Orientation from Facial Photographs

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Abstract

Previous research indicates that men can accurately assess women's mating orientation from facial photographs (DeLecce et al. *Archives of Sexual Behavior*, 43, 319–327, 2014). The current study investigated whether this ability is moderated by men's own mating orientation. To that end, 89 men completed the Sociosexual Orientation Inventory (SOI)—an assessment of mating orientation—and rated the perceived faithfulness of 55 women (who also completed the SOI) depicted in facial photographs. Although men were indeed accurate in their faithfulness perceptions of the female targets, men's mating orientation did not moderate the negative association between their faithfulness ratings and the self-reported mating orientation of the female targets. Limitations of the current study and directions for future research are addressed in the discussion.

Keywords Mating orientation · Sociosexual orientation · Facial perception accuracy

One of the traits desired by men in a long-term mating partner is sexual fidelity, because selecting a faithful partner reduces the probability of extra-pair copulations (EPCs) and increases paternity certainty (Buss 1989; Mogilski et al. 2014). Although women also benefit from faithfulness in a long-term partner, EPCs can be more detrimental to male reproductive success because they could lead to cuckoldry (i.e., investing resources in genetically unrelated offspring; Shackelford et al. 2015). Therefore, the ability of men to accurately assess whether a potential long-term partner is likely to be sexually faithful—even with minimal information about the potential mate—may have been favored by selection.

Previous research indicates that men may have the ability to assess the faithfulness of women. Leivers and colleagues (Leivers et al. 2015) found that men's assessments of women's trustworthiness from facial photographs are accurate at above-chance levels (although

with a small effect size). Similarly, women who reported greater interest in casual sex (i.e., a short-term mating orientation) were judged to be less trustworthy (measured as a composite of general trustworthiness, sexual trustworthiness/faithfulness, and kindness), and less desirable as a long-term partner on the basis of facial photographs by men who were blind to women's self-reported mating orientation (Campbell et al. 2009). Another study asked men to rate facial photographs of women in terms of desirability as a long-term partner (i.e., faithfulness, attractiveness, and youthfulness) and documented a negative correlation between men's faithfulness ratings and women's self-reported short-term mating orientation (DeLecce et al. 2014). Short-term mating orientation is a reasonable proxy of infidelity risk as it is positively associated with both intentions to commit infidelity (Arnocky et al. 2018; Barta and Kiene 2005; Hackathorn and Brantley 2014; Weiser et al. 2018) and with a history of infidelity (Rodrigues et al. 2017).

Men's own mating orientation may affect the accuracy with which they assess women's mating orientation based on minimal information. Cuckoldry threatened ancestral male reproductive success and, therefore, may have produced in men with a long-term mating orientation a

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sensitivity to facial features and other cues that signal the likelihood of infidelity. In contrast, cuckoldry would have been a less severe adaptive problem for short-term oriented ancestral men because they would have been less likely to invest resources in one woman and her offspring (Buss and Schmitt 1993). Although cuckoldry is a problem that differs in severity for men pursuing these two different mating orientations, sperm competition is an adaptive problem for both long-term and short-term oriented men. Animal models indicate that some males are more likely to use the strategy of avoiding sperm competition through investment in mate guarding and prudent partner choice, whereas other males are more likely to invest in physiologically expensive ejaculates for sperm competition. This logic has successfully been applied to humans (see Leivers et al. 2014). One factor that may affect whether sperm competition is avoided or actively engaged is mating orientation, such that long-term oriented men may be more likely to avoid sperm competition by avoiding as long-term partners women that pose a greater risk of infidelity.

Consistent with this argument, men attend to photos of famous attractive women differently depending on their mating orientation. Short-term oriented men are more interested in the women's physical attractiveness and rate them as more attractive than do long-term oriented men, who are more interested in social characteristics of the women (Townsend and Wasserman 1997). A study using a similar design but featuring non-celebrity models produced similar results (Townsend and Wasserman 1998). In another study examining men's willingness to approach women of differing attractiveness levels, long-term oriented men were less willing than short-term oriented men to approach extremely attractive women (Brase and Walker 2004). Similarly, men's ratings of the attractiveness of breasts differ by mating orientation: long-term oriented men provide lower attractiveness ratings than do short-term oriented men for larger breasts (which are generally rated as more attractive; Zelazniewicz and Pawlowski 2011). Highly attractive women are more likely to be the targets of mate poaching attempts (Schmitt and Buss 2001) and are more likely to be unfaithful (Hughes and Gallup 2003). Taken together, these results are consistent with the argument that long-term oriented men are more sensitive than short-term oriented men to cues of infidelity risk in a prospective partner, including cues revealed in facial photographs.

Based on this limited previous research, the purpose of the present study was to investigate the relationship between men's own mating orientations and the accuracy with which they assess women's mating orientation using facial photographs. We hypothesized that long-term oriented men will be more accurate than short-term oriented men at assessing women's mating orientation from facial photographs.

Method

Participants

This study included two phases. A total of 55 female undergraduate students participated in the first phase of the study. The mean age of the participants was 19.2 years ($SD = 3.0$). Participants were recruited from psychology courses and awarded extra credit for participating. Of these, 51 participants (92.7%) were Caucasian. In the second phase of the study, 89 male undergraduate students (91.0% Caucasian) were recruited from other psychology classes at the same university and also from a nearby community college ($M_{age} = 24.03$ years; $SD = 9.36$). Participants were awarded extra credit or an opportunity to win a gift certificate, respectively, for participating. These are the same participants (and thus the same data) as in DeLecce et al. (2014). The current article, however, presents new analyses designed to test a new hypothesis.

Measures and Procedure

Upon arriving at the laboratory, all participants (male and female) completed the 7-question Sociosexual Orientation Inventory (SOI) (Simpson and Gangestad 1991). The SOI assesses mating orientation, which can range from restricted (i.e., long-term) to unrestricted (i.e., short-term). Lower SOI scores indicate a more restricted, long-term mating orientation, and higher SOI scores indicate a less restricted, short-term mating orientation. The first four items measure sexual behavior (e.g., "With how many different partners have you had sexual intercourse on *one and only one* occasion?", emphasis in original). The next three items measure attitudes towards casual sex on a 10-point Likert-type scale (e.g., "Sex without love is OK."). Total SOI scores are based on responses to all questions. The unit-weighting system recommended by Simpson and Gangestad (1991) was implemented for responses to the seven questions. In addition, female participants self-reported whether they had engaged in infidelity in past or current relationships. After completing these self-report measures, the 55 women in the first phase of the study were facially photographed. Participants were instructed not to wear makeup (Fink and Mads 2008). Facial photographs were taken at the participant's eye level while she was seated, looking directly into the camera, and maintaining a neutral facial expression. Photographs were taken with a tripod-mounted Nikon Coolpix S630 camera, with focal distance set to 105 cm with a camera resolution of 12 megapixels.

For the second phase of the study, male participants ($n = 89$) completed the SOI and then viewed the facial photographs of the 55 women from the first phase of the study on a computer screen. Viewing distance was 60 cm. Participants evaluated each photograph using a 10-point Likert-type scale on three dimensions: *Faithfulness*, *Attractiveness*, and

Youthfulness. For each dimension, “1” represented the lowest rating and “10” represented the highest rating. Photographs were presented in a random order to control for order effects (for a more detailed description of the methods, see DeLecce et al. 2014).

Results

A series of multilevel models examined whether the SOI scores of the male perceivers moderated the association between their perceptions of the faithfulness of the female targets and the self-reported SOI scores of the female targets. The range of SOI scores for both male participants and female targets was 21–71; for males, $M = 57.0$ ($SD = 31.9$) and for females, $M = 34.3$ ($SD = 24.1$). The data constituted a multilevel data structure because observations at one level of analysis were nested within another level of analysis (i.e., the faithfulness ratings provided for each female target were nested within male perceivers; Bryk and Raudenbush 1992). Multilevel models were used to analyze these data because these models account for the violation of the independence assumption that occurs with a nested data structure. At a conceptual level, these models involved two steps. In the first step, a regression equation was estimated for each individual at Level 1 (the within-person level) to yield intercept and slope coefficients that serve as an index of the association between variables at the level of the targets (e.g., Are the faithfulness ratings provided by the male perceivers associated with the self-reported SOI scores of the female targets?). For the second step, Level 2 analyses (the between-persons level) examined whether the regression slopes obtained from the Level 1 analyses differed across individuals depending on their SOI scores (e.g., Does the association between the perceived faithfulness ratings and the self-reported SOI scores of the female targets depend on the SOI scores of the male perceivers?).

Associations of Perceptions of Faithfulness with Self-Reported SOI Scores of Female Targets

The first analysis examined the within-person relationships that perceived faithfulness had with the self-reported SOI scores of the female targets. There was a negative association between the perceived faithfulness ratings provided by the male perceivers and the SOI scores of the female targets ($B = -0.06$, $SE = 0.01$, $\beta = -0.12$, $t = -8.67$, $p < .001$). These results show that the male perceivers provided lower ratings of faithfulness to female targets with higher self-reported SOI scores. Although this general finding was reported in a simple correlation and multiple regression analysis in DeLecce et al. (2014), the use of multilevel modeling to arrive at the same conclusion is novel.

Associations of SOI Scores of Male Perceivers with their Faithfulness Ratings

The Level 2 (between-person) analyses first examined whether the SOI scores of the male perceivers were associated with the average faithfulness ratings they provided for the female targets. This type of analysis is referred to as a *means as outcomes* analysis (Bryk and Raudenbush 1992). The SOI scores of the male perceivers were not associated with the average faithfulness ratings they provided for the female targets ($B = 0.00$, $SE = 0.02$, $\beta = -0.03$, $t = -0.62$, $p = .54$). This is a novel finding and shows that the average perceived faithfulness of the female targets did not depend on the SOI of the male perceivers.

SOI Scores of Male Perceivers as a Moderator of Associations Between Faithfulness Ratings and Self-Reported SOI Scores of Female Targets

The second purpose of the Level 2 (between-person) analyses was to examine whether the SOI scores of the male perceivers moderated the associations that the faithfulness ratings had with the self-reported SOI scores of the female targets (e.g., Was the association between the faithfulness ratings and the self-reported SOI of the female targets especially strong for those male perceivers with low SOI scores?). This type of analysis is referred to as a *slopes as outcomes* analysis (Bryk and Raudenbush 1992). The expected cross-level interaction between the SOI scores of the male perceivers and their faithfulness ratings of the female targets did not approach conventional levels of statistical significance ($B = 0.00$, $SE = 0.01$, $\beta = 0.01$, $t = 0.98$, $p = .32$). This means that the association between the faithfulness ratings provided by the male perceivers and the self-reported SOI scores of the female targets did not depend on the SOI scores of the male perceivers (also a novel finding not reported in DeLecce et al. 2014).

Discussion

The current results indicate that men’s mating orientation does not moderate the accuracy with which they assess women’s mating orientation based on facial photographs of the women. That is, although the faithfulness ratings provided by male perceivers were associated with the self-reported SOI scores of female targets, the strength of these associations did not depend on the SOI scores of the male perceivers. This does not mean that men were inaccurate in assessing women’s mating orientation. Rather, the current results indicate that individual differences in mating orientation in men do not moderate the accuracy with which they assess the mating orientation of women from facial photographs. These results contribute to the literature on social perception concerning whether

perceivers can decode the non-verbal behavior of others (e.g., extraversion or agreeableness) based on minimal cues (Borkenau and Liebler 1992). In the current study, a characteristic of the perceiver (i.e., mating orientation) did not moderate the accuracy with which they assessed a characteristic of the target.

A limitation of the current study is our reliance on a homogeneous sample of men to provide ratings for a homogeneous sample of women. Perhaps with more heterogeneous samples of men and women (e.g., greater diversity with regard to age or racial-ethnic background), we may have found support for the hypothesized effect of men's mating orientation on the accuracy with which they assess women's self-reported mating orientation from facial photographs. Attempting to replicate this research with more heterogeneous samples is a clear first step for future work. Another possible reason for the failure to find the hypothesized moderation effect is that our sample size was small. Depending on the method used to calculate required sample size, an adequate sample to detect a small effect could be above 100 (see Erdfelder et al. 1996; Shieh 2009). An additional limitation of the current research is our reliance on the SOI instead of the currently more widely used SOI-R (Penke and Asendorpf 2008). The reason for not using the SOI-R is that the data were collected in 2010, before the SOI-R became as widely used as it currently is. Finally, only men's mating orientation was assessed in this study, so it is not possible for us to investigate whether other factors, such as men's mate value, might contribute to men's ability to accurately assess women's desirability and/or faithfulness.

To our knowledge, this is the first study to investigate whether men's mating orientation moderates the accuracy with which they assess women's self-reported mating orientation from facial photographs. Although previous research documented that men can accurately assess women's mating orientation in this context, the accuracy of these assessments is not moderated by men's own mating orientation, at least in the homogeneous samples of men and women studied in the current research.

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