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Sociosexuality and face perception: Unrestricted sexual orientation facilitates sensitivity to female facial cues

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ABSTRACT

Across two studies, sexually unrestricted men and women showed heightened sensitivity to female facial symmetry (a signal of genetic fitness) and female sexual receptivity (happy facial expressions). In Study 1, individuals assessed the attractiveness of male and female targets of varying facial symmetry. Sexually unrestricted men and women, compared to their sexually restricted counterparts, showed a stronger symmetry advantage in attractiveness ratings for female targets, an indication of greater sensitivity to facial symmetry. Study 2 asked participants to discriminate between genuine (Duchenne) and deceptive smiles on both male and female faces. Results indicated that sexually unrestricted men and women, compared to sexually restricted individuals, were better able to discriminate between these actual and deceptive signals of receptivity for female targets. Neither study found any relationship between sociosexual orientation and the perception of male targets. These results suggest that sexually unrestricted individuals are attuned to reproductively-relevant cues in female faces.

1. Introduction

Human mating behavior is remarkably varied. Rather than having one successful mating strategy, humans appear to vary widely in their preferred mating behaviors. Whereas some individuals are *sexually restricted*, preferring sex only within committed, long-term mating relationships, others are *sexually unrestricted* and are much more willing to have sex outside of a long-term mating relationship. Importantly, these individual differences in the amount of intimacy required to engage in sexual activity, known as ***Sociosexual Orientation*** (Simpson & Gangestad, 1991), appear to drive mating behavior.

Consistent with these preferences, sexually unrestricted individuals report having had more previous sexual partners than do sexually restricted individuals (Ostovich & Sabini, 2004; Simpson & Gangestad, 1991). Moreover, individual differences in sociosexuality are related to different priorities and evaluations of potential mating partners. For example, sexually unrestricted females, relative to their sexually restricted counterparts, prefer more masculine male bodies (i.e., wide chest, long trunk, firm musculature; Provost, Kormos, Kosakoski, & Quinsey, 2006), a predictor of higher levels of immunocompetence (Cunningham, Barbee, & Pike, 1990). Sexually unrestricted males are more likely than their sexually restricted male counterparts to prefer women with a low waist-to-hip ratio, a predictor of female fertility (Brase & Walker, 2004). In both cases and consistent with past research, sexually unrestricted persons seem to be more attuned to physical characteristics of others that are diagnostic of elevated reproductive quality in potential partners (rather than cues diagnostic of a committed long-term mate; Simpson & Gangestad, 1992).

The current research seeks to extend past work on sociosexual orientation into the domain of perceptual sensitivity. Specifically, we test the hypothesis that compared to sexually restricted individuals, sexually unrestricted persons will be sensitive to facial cues that reflect underlying genetic fitness and cues that are indicative of whether an individual is more or less sexually receptive. First, we predict that compared to sexually restricted persons, sexually unrestricted individuals will be more sensitive to facial symmetry because of its underlying association with genetic quality (Rhodes, 2006; Thornhill & Gangestad, 1993). Second we predict that sexually unrestricted persons, compared to their more restricted counterparts, will be more sensitive to the distinction between genuine and deceptive smiles because smiles are associated with sexual receptivity (Eibl-Eibesfeldt, 1989) and are sent most intensely during females' most fertile menstrual phase (Mass, Höllldorfer, Moll, Bauer, & Wolf, 2009). Thus, we hypothesize that compared to sexually restricted persons, sexually unrestricted persons will be more sensitive in determining who is a higher quality mate (facial symmetry) and who is likely to be most receptive (facial cues of sexual receptivity), both of which have important consequences for effective human mating (Symons, 1979).

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1.1. Fitness in the female face

Not all faces are created equal; certain faces are attentionally privileged. For example, Maner and colleagues (2007) recently found that both male and female perceivers selectively attend to attractive female faces, but not male faces. Furthermore, research indicates that both men and women over-estimate the frequency of attractive female faces in a face array, as well as show enhanced recognition memory for attractive female faces but attenuated recognition for attractive male faces (Maner et al., 2003). Men and women also better remember both the identity and location of attractive female targets more than other targets (Becker, Kenrick, Guerin, & Maner, 2005).

These results suggest that both men and women selectively attend to attractive female faces. The potential reproductive benefits for men that stem from this attentional bias are fairly straightforward. Because facial symmetry is a major driver of facial attractiveness (Rhodes, 2006) and facial symmetry is highly diagnostic of genetic fitness (Thornhill & Gangestad, 1993), attending to attractive (and symmetrical) women may increase men's chances to mate with females of higher genetic quality. Because such females tend to have more offspring that survive and reproduce than do genetically inferior females (Symons, 1979), this is of clear reproductive importance to men.

But why might women also attend to attractive female faces? Gutierres and colleagues (1999) argue that such sex-general biases toward attractive women may have emerged among women due to intrasexual competition. It is important for women to attend to attractive female faces because they may represent the most potent competitors for mates. To successfully mate with desirable partners, whether long- or short-term, females must successfully identify attractive female conspecifics because such women represent potential intrasexual competition (Gutierres, Kenrick, and Partch, 1999). This is particularly true because women are sexual gatekeepers. That is, women are the more sexually selective sex, whereas men must compete to be chosen as sexual partners (e.g., Baumeister & Vohs, 2004; Symons, 1979). As such, it may be more important for both men and women to attend to *women* when attempting to predict who is sexually available. Human reproductive success depends on identifying potential mating partners as well as potential intrasexual rivals in order to engage the appropriate mate acquisition or mate guarding tactic (Maner, Gailliot, & DeWall, 2007). Past research indicates that for both men and women, this seems to involve being attentive to female faces.

Although men certainly engage in intrasexual competition for partners as well, this competition is commonly conducted on dimensions other than physical attractiveness. Research indicates that males' mating potential is primarily determined by characteristics related to *status* whereas female mating potential is to a great extent determined by *physical attractiveness* (Buss, 1994). Because faces reveal more about physical attractiveness than they do about status, perceptual sensitivity to female facial cues, rather than male facial cues, is important for men assessing potential mates and women assessing potential intrasexual competitors. Thus, when it comes to visual attention and memory, both men and women attend to physical attractiveness in female faces.

This recent data regarding attention to female faces may indicate a critical moderator of our proposed effects: target sex. Given that both men and women attend to female faces, and in particular to attractive female faces, perhaps being sexually unrestricted translates into superior perceptual acuity for signals of fitness and approachability *uniquely in female faces*. Thus, although it is possible that unrestricted individuals may simply be more sensitive to reproductively-relevant cues in both male and female faces, a growing body of recent findings suggests that these effects may also be limited to female targets (e.g., Becker et al., 2005; Maner et al., 2003).

1.2. The current research

In two studies, we investigate whether sexually unrestricted individuals are more sensitive to facial symmetry (a facial cue of genetic fitness) and the distinction between genuine and deceptive smiles (a facial cue of sexual receptivity) than are sexually restricted persons, particularly for female faces. In our first study, participants rated the attractiveness of male and female targets that varied in facial symmetry. Facial asymmetry is a signal of genetic abnormality or disease, whereas facial symmetry is a signal of genetic fitness (Rhodes, 2006). Furthermore, highly symmetric faces are rated as attractive, whereas highly asymmetric faces are rated as unattractive. If sexually unrestricted individuals are more sensitive to signals of genetic fitness, relative to restricted individuals, we hypothesized that unrestricted individuals would show a stronger symmetry advantage in perceptions of facial attractiveness for female faces than would sexually restricted persons.

In our second study, participants discriminated between genuine (Duchenne) and deceptive smiles; that is, they discriminated between genuine and deceptive signals of receptivity. If sexually unrestricted individuals are more sensitive to facial signals pertinent to mating, we hypothesize that compared to sexually restricted persons, sexually unrestricted individuals should be more sensitive to the distinction between genuine and deceptive signals of receptivity when perceiving female faces.

2. Experiment 1

2.1. Method

2.1.1. Participants

Sixty-three undergraduate participants (39 females) volunteered to participate in exchange for partial course credit. Of these participants, 60 were Caucasian, two were Hispanic, and one participant described their ethnicity as "other." Eight participants (4 men) failed to complete the Sociosexual Orientation Inventory (SOI); as such, analyses involving the SOI included only the 55 participants who completed the scale.

2.1.2. Materials

The Sociosexual Orientation Inventory (SOI; Simpson & Gangestad, 1991), consisting of seven questions, was used to assess participants' sociosexual orientation (unrestricted vs. restricted). This study also employed 18 unique target faces (9 male; 9 female), taken from those used by Rhodes, Proffitt, Grady, and Sumich (1998) in the 'low symmetry,' 'normal,' and 'high symmetry' conditions of their Experiment 1. Within each target sex there were 3 asymmetrical targets, 3 targets of normal symmetry (i.e., veridical, unmanipulated images), and 3 highly symmetric targets. As described by Rhodes and colleagues (1998), perfectly symmetric versions of an original face can be created by averaging the normal and mirror images of each face using computer software. To make low symmetry targets (asymmetric targets), this software used a set of predetermined points on each face to increase the difference between the original face and its perfectly symmetric version by 50%. Highly symmetric targets were created in a similar manner, but with the software *decreasing* the distance between the original face and its perfectly symmetric version by 50% (Rhodes et al., 1998).

2.2. Procedure

Participants completed all materials at individual work desks in classrooms. After obtaining informed consent, participants were instructed that the study would investigate face perception. Participants were given a packet containing the experimental materials.