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Promiscuity is related to masculine and feminine body traits in both men and women: Evidence from Brazilian and Czech samples

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ABSTRACT

One of the possible explanations for human within-sex variation in promiscuity stems from conditional strategies dependent on the level of body sex-dimorphism. There is some evidence that masculine men and feminine women are more promiscuous than their sex-atypical counterparts, although mixed results persist. Moreover, another line of evidence shows that more promiscuous women are rather sex-atypical. We tested whether diverse sex-dimorphic body measures (2D:4D, WHR/WSR, handgrip strength, and height and weight) influence sociosexual desires, attitudes, promiscuous behavior, and age of first intercourse in a sex-typical or sex-atypical direction. Participants were 185 young adults, 51 men and 54 women from Brazil, and 40 men and 40 women from the Czech Republic. In men stronger handgrip and more feminine 2D:4D predicted higher sociosexual behaviors, desires, and lower age of the first sexual intercourse. While in women, sociosexual desires were predicted by lower handgrip strength and more feminine 2D:4D. It thus seems that it is rather a mixture of masculine and feminine traits in men, and feminine traits in women that increase their sociosexuality. Masculine traits (height) predicting female promiscuous behavior were specific for only one population. In conclusion, a mosaic combination of sex-typical but also sex-atypical independent body traits can lead to higher promiscuity, particularly in men. Limitations, implications, and future directions for research are considered.

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1. Introduction

Cross-culturally, men on average score higher on sociosexual orientation than women (Lippa, 2009; Penke and Asendorpf, 2008; Schmitt, 2005), which means they show a higher tendency for uncommitted sexual variety, usually referred to as a sexual unrestrictiveness or promiscuity. Despite that, there is substantial intrasexual variation in sociosexuality that still needs to be explained (Bailey et al., 2000; Gangestad and Simpson, 2000; Gross, 1996; Landolt et al., 1995). Individual variance in mating behavior can be seen as a result of each individual adjusting his/her mating tactics according to his/her physiological, morphological, cognitive, or psychological state (Gross, 1996; Oliveira et al., 2008).

One of the factors that can influence the intrasexual variation of mating tactics is the degree of overall individual masculinization. It has been suggested that higher androgen levels, in particular during the organizational period of individual ontogeny, influence the development of masculine traits in general, including psychological or cognitive traits, physical traits or sexuality (Mikach and Bailey, 1999). Consequently, irrespective of sex, individuals with higher androgen exposure during prenatal development are expected to show more masculine traits, including sexual strategies. In other words, similar mechanisms that influence average sex differences are supposed to also cause the intrasexual variation in such traits. Thus, more typical sexual behavior, such as higher sociosexuality, should be connected to other more masculine, for example somatic, traits in both men and women, pointing to their similar aetiological proximate mechanisms.

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On the other hand, it has been hypothesized that it is not the process of masculinization per se, but rather the degree of individual sex typicality that influences intrasexual variation in sociosexuality or sexual promiscuity in general. Sex-typical body traits (sizes and shapes) in both men and women are supposed to reflect optimal levels of sex hormones (current, pubertal or/and prenatal) and indicate sexual maturity, fertility, and genetic and developmental underlying heritable qualities of the organism ('good genes') (for reviews, see Gallup and Frederick, 2010; Grammer et al., 2003). Consequently, more sex-typical individuals might have increased mating opportunities and facilities to access mates, and thus higher sociosexuality. From the evolutionary perspective, sexual promiscuity can increase reproductive success in males more than in females (Gangestad and Simpson, 2000). However, women can also benefit from uncommitted sexual encounters through receiving both direct benefits (e.g., immediate resources, social status) and indirect benefits (e.g., 'good genes', 'sexy sons') (Gangestad and Simpson, 2000). Also, within-subject studies have shown that women during their fertile phase of the menstrual cycle, i.e. when they have higher estrogen levels, show higher tendencies to extra-pair copulations, short-term matings, and preferences for more masculine men (e.g. Gangestad and Thornhill, 2008). Thus, more feminine women could benefit from a short-term sexual strategy, at least under certain conditions.

Interestingly, these two theories are in agreement when hypothesizing about the connection between male sociosexuality and the degree of masculine, or sex-typical, somatic traits: men higher on sociosexuality should show higher sociosexual behaviors and desires. Nevertheless, the hypotheses are in sharp contrast when it comes to women. Following the logic of the first approach we would expect rather masculine women adopt more promiscuous sexual strategies, while according to the second approach we would expect rather feminine women to show elevated sociosexuality.

There have been many studies looking at the relation between somatic masculinity and sexual promiscuity in both men and women (e.g., Boothroyd et al., 2008; Charles and Alexander, 2011; Hill et al., 2013; Hönekopp et al., 2006; Hughes et al., 2004; Manning and Fink, 2008; Puts et al., 2004; Rahman et al., 2005; Scarbrough and Johnston, 2005; Schwarz et al., 2011; Shoup and Gallup, 2008; Sim, 2013). The majority of these studies have investigated only one or a few sex-dimorphic body traits, usually in only one sex and within one population. The results of these studies have generally been ambiguous, so it is still not clear whether sociosexuality is connected with masculine or feminine body traits in either sex. Within-sex variation in promiscuity in both men and women thus deserves further testing using a more detailed approach.

1.1. The current study

In this study, we aimed to overcome many of the limitations of previous studies, by testing the relationship between a broader range of physical traits in both men and women (2D:4D, mean handgrip strength, height, weight, and WHR in women and WSR in men) from two ethnically diverse populations (Brazil and the Czech Republic) and proxies of sexual promiscuity (sociosexual desire, attitudes, promiscuous behavior, and age of the first intercourse). Such approach can shed more light on this research area, and increase the generality of the results.

The main focus of this study was to verify the direction and strength of the relationship between sex-dimorphic body measures and sexual promiscuity in both men and women. According to the first approach outlined above, individual level of somatic masculinity should be positively linked to sexual promiscuity in both men and women. The second approach predicts that sex-typical individuals should show elevated sexual promiscuity, so we should expect more masculine men but more feminine women would show higher tendencies to unrestricted sexual strategies. Concerning women, we thus have two alternative opposing hypotheses.

2. Materials and methods

2.1. Target sample

In total, 185 individuals participated in the study. Fifty-one men (age $M = 23.57$, SD = 3.89) and 54 women (age $M = 24.02$, SD = 4.86) were recruited at the University of São Paulo, Brazil, and 40 men (age $M = 22.65$, SD = 2.51) and 40 women (age $M = 22.43$, SD = 2.42) were recruited at the Charles University in Prague, Czech Republic. From subsequent analyses we removed participants who were 34 or older ($n = 3$), and individuals who indicated bisexual or predominantly or exclusively homosexual orientation (8 women and 10 men), since it has been shown that homosexual and heterosexual individuals can vary in traits such as body morphology (Valentova et al., 2014) and sociosexuality (Schmitt, 2006). The final sample consisted of 163 individuals (age $M = 22.99$, SD = 3.35), 83 women (44 Brazilians) and 80 men (41 Brazilians). Age did not vary according to sex or target country (all p-values > .05). The samples from both populations were comparable, because all participants were students from different undergraduate and graduate courses, from the largest cities and universities of each country.

2.2. Procedure

In both countries, the data were gathered under similar conditions to allow cross-cultural comparisons. Participants were informed about the basic aims of the study, and they came to the laboratory. Each participant who agreed to participate signed a consent form with detailed information about the study. The research was anonymous and voluntary – if anyone would not agree to participate, he or she could leave the study at any time without explanation. According to local law, Brazilian participants were not allowed to receive any financial reward. Czech participants were reimbursed with the equivalent of US$20. Nobody quit the research, but 2 individuals from the Brazilian sample refused to provide some data.

After signing the informed consent, each participant went through the whole procedure which took from 40 to 60 min. Altogether, each participant filled in a battery of questionnaires, and other procedures. The presented study is thus part of a larger project, and only information relevant to this particular study will be provided here in detail.

2.2.1. Questionnaires

Each participant filled in a questionnaire to provide self-reports of basic socio-demographic variables, and the Revised Sociosexual Orientation Inventory (SOI-R; Penke and Asendorpf, 2008), a well-established measure of sexual strategy, particularly propensity for sexual variety, uncommitted short-term sexual relationships. The questionnaire consists of 9 items, which are averaged into three sub-scales of sociosexual Behavior, Attitudes, and Desires. Higher scores known as unrestricted socio-sexual orientation indicate a stronger tendency toward short-term mating strategy (Cronbach's alpha = .750, males = .733, and females = .653). To assess other measures of mating allocation, we asked the participants to indicate the age of their first sexual intercourse (AFSI), and lifetime number of sexual partners (LNSP). The participants also indicated their sexual orientation on a 7-point Kinsey scale, where 0 = exclusively heterosexual, 3 = bisexual, and 6 = exclusively homosexual. Only individuals exclusively or predominantly heterosexual were included in the subsequent analyses.