

What is the significance of cross-national variability in sociosexuality?

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Abstract: Schmitt finds that national sex ratios predict levels of sociosexuality, but how we should interpret this result is unclear for both methodological and conceptual reasons. We criticize aspects of Schmitt's theorizing and his analytic strategy, and suggest that some additional analyses of the data in hand might be illuminating.

Schmitt's most striking finding is the negative cross-national correlation between sex ratios and sociosexuality (Figure 1 of the target article). This is interpreted as support for "sex ratio theory," a set of insights that Schmitt attributes to Pedersen (1991) but that owe much to Emlen & Oring (1977), who first argued that operational sex ratio (OSR) largely determines mating systems. According to Schmitt, when males are scarce, females are sexually selected to succumb to male demands for promiscuous sex (and SOI increases), and when females are scarce, males are sexually selected to succumb to female demands for long-term monogamy (and SOI decreases). However, although the direction of these predictions is reasonable, the logic by which Schmitt justifies them is faulty.

Sexual selection favours traits that improve mating success for the individuals bearing them. This is not equivalent to pandering to the desires of the other sex; if it were, there would be no such thing as sexual conflict. In a female-biased population, women might indeed lower their threshold values of required commitment to avoid being abandoned for rivals offering better returns on male mating effort, but given that there is less male investment to go around, women may also resort to polyandrous mating to extract resources from multiple sources. Both these strategic shifts would increase average SOI scores, but the latter would run counter to the best interests of women's "first-choice" mates rather than pandering to them. Similarly, in a male-biased population, males may reduce SOI levels and forego the pursuit of multiple mates, but the reallocation of male effort need not take the form of compliance with female investment demands; instead, elevated mate guarding may actually impose costs on scarce women (a possibility that Schmitt does entertain, albeit briefly). Averaging male and female SOI scores to produce a single national score was a curious way to address the relevance of OSR. Why not assess how sex ratio is related to each sex's SOI level, particularly since Schmitt predicts that female scores should be more susceptible to variation?

Furthermore, sexual selection is not relevant as an immediate causal process, as Schmitt implies. For SOI to be correlated with sex ratio, it is enough that past sexual selection favoured those who employed mating strategies that respond conditionally as described above. Indeed, even this is unnecessary. If historical sexual selection created an unconditional sex difference in multiple partner preference (males high, females low), even that could produce a correlation between sex ratio and SOI, because there would be fewer unique sexual partnerships when females outnumber males than vice versa. Consider an extreme example where females only ever want one partner and males want many. In a population with 40 men and 60 women, there will be 60 unique sexual pairings, but in a population of 60 men and 40 women, there will only be 40 unique sexual pairings, and 20 males will go without sex. The average SOI score will be higher in the former population than the latter, though both mating systems are driven by the hypothesized female monogamy and strategies are unconditional. But in any event, the process of sexual selection is not a proximate force.

How sex ratios were computed for Figure 1 requires clarification. The x-axis is labelled "National Sex Ratio," but the caption says "operational sex ratio." These are not synonyms; OSR refers

properly to the numbers of males or females simultaneously seeking mates, but Schmitt claims it is usually calculated as males or females in the 15–49 age range. Whether the sex ratios he used were age restricted in this way is inexplicit, but even if so, 15 to 49 may still be too broad, considering that most participants were university students occupying the lower end of this age range.

Schmitt addresses criticisms of the SOI's dual nature by dividing it into behavioural and attitudinal components and demonstrating that both exhibit sex differences. However, calling items 1 to 4 "behavioural" is problematic because only items 1 and 3 are self-reports of actual behaviour. Item 2 concerns expectations, which may or may not be fulfilled, while item 4 is about fantasy and self-monitoring cognitive activity and arguably belongs with "attitudinal" items 5, 6, and 7.

Schmitt claims to have affirmed the SOI's validity, but the ostensible validation concerns only consistency of self-report. Truthfulness is another matter. Whether lying varies cross-nationally cannot easily be determined, but Schmitt's data permit a partial test. Heterosexual contacts are constrained to be equal for males and females in toto, so if there are sex differences in responses to SOI items 1 and 3 in some samples, this may bespeak lying, although there could be other explanations such as variability in undergraduate use of prostitutes.

Ideas about "cultural influences on sociosexuality" need refinement. It will rattle some readers that Schmitt uses "culture" to refer both to his national samples and to decidedly noncultural variables such as pathogen loads, but this is a relatively minor problem of word choice. More important is the absence of clear theoretical rationales for the target article's hypotheses about between-group variability. One example is Schmitt's claim that a female-biased sex ratio "may lead men to engage in greater intrasexual competition" (sect. 7.2). Surely, it is easier to argue precisely the opposite: Female scarcity exacerbates male competition. Similarly, the hypotheses about impacts of environmental stress on sociosexuality (sect. 3.2) lack clear derivations. A formal theory from which one could derive genuine predictions must distinguish resource scarcity from unpredictability, as well as distinguishing both from mortality, rather than conflating these distinct challenges in a vague construct of environmental "stress."

On sociosexual cognitive architecture

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Abstract: Schmitt has equivocated about the underlying psychology of sociosexuality, but from the data presented in the target article, it would appear that he has drawn out the underlying cognitive architecture. In this commentary, I describe this architecture and discuss two emerging hypotheses about heterosexual and homosexual male sociosexuality.

Schmitt's investigation of sociosexuality across 48 nations firmly embeds itself within an evolutionary perspective of human sexual behaviour and cognition. However, there appears to be some equivocation in Schmitt's use of evolutionary theory between the perspectives offered by human behavioural ecology and evolutionary psychology. The former position tends to analyse behavioural responses to contingent ecological demands and seeks evidence of optimality in the face of adaptive challenges. Such a position can lead either to no commitment about the underlying cognitive architecture that delivers optimal behaviours or to the view that aspects of cognition are somewhat global in their processing capabilities. Evolutionary psychology, however, explicitly argues for a cognitive architecture composed of domain specific modules, each selected to solve specific adaptive problems. Such modules deliver conditional algorithms that take particular inputs,