

ing to Gangestad and Simpson's (2000) strategic pluralism model, is the prime determinant of women's conditional switch towards a more unrestricted sociosexual orientation. The different models Buss and Schmitt (1993) and Gangestad and Simpson (2000) derived from Trivers' (1972) parental investment theory would thus make the same predictions for sex differences in populations of college students. The critical studies of sociosexuality in the context of highly committed long-term relationships and especially marriages are grossly absent from the literature (Simpson et al. 2004).

Our data. To provide some clarification for these issues, Penke and Denissen (2005) studied a German community sample (over 1,000 sexually experienced heterosexuals aged 18 to 50). As expected, they found that sex differences were absent in self-reports of past behaviors but more pronounced in future expectations and especially unrestricted sexual fantasies. The latter aspect also showed a clear connection to the attitudinal, but not the behavioral component, the former being indifferent in between. In line with the conditional sexual strategies emphasized by the strategic pluralism model, but contrary to the sex-specific mixed sexual strategies proposed by Buss & Schmitt (1993), a lack of sex differences in the total sociosexuality score for married (but not for dating) participants emerged, which was the result of a greater number of reported unrestricted behaviors by married (vs. dating) women. Just as suggested by recent evidence on female strategy shifts conditional to their natural ovulatory cycle (Thornhill & Gangestad 2003), this effect was especially pronounced when controlling for hormonal contraceptive usage.

Conclusion. Schmitt has made a great contribution in proving conditional shifts in sexual strategies across cultural contexts and environmental conditions. Unfortunately, he drops this ecological sensitivity to argue for universal sex differences in sociosexuality based on national averages, without making an attempt to account for the large residual intranational variance in both sexes (even though he explored interactions with relationship status and sexual orientation in the ISDP article on the less controversial sex differences in the desire for sexual variety, Schmitt et al. 2003). Because different evolutionary models with concurring predictions exist, such claims can be misleading, even when restricted to college populations. Although demonstrating that mean (or median) sex differences in the human mating psychology was surely helpful for the initial establishment of modern evolutionary psychology, its current state demands a more differentiated perspective and more carefully designed empirical studies to give consideration to the full scope of possibilities the evolutionary metatheory has to offer.

Sex Differences: Empiricism, hypothesis testing, and other virtues

David P. Barash

Psychology Department, University of Washington, Seattle, WA 98195.
 dpbarash@u.washington.edu
<http://faculty.washington.edu/dpbarash/>

Abstract: "Sociosexuality from Argentina to Zimbabwe: A 48-nation study of sex, culture, and strategies of human mating" delivers on its title. By combining empiricism and careful hypothesis testing, it not only contributes to our current knowledge but also points the way to further advances.

David Schmitt is to be congratulated. There is undoubtedly a great need for a "cross-culturally validated measure of human mating strategies," and it is quite likely that the Sociosexual Orientation Inventory (SOI) fills the bill. In addition to filling this near-vacuum, Schmitt has succeeded in putting together what appears to be the most comprehensive worldwide study of its sort, ever. And in the politically reactionary, antiscience environment fostered by

the George W. Bush Administration – in which research into human sexual behavior has been woefully inhibited – such efforts should be especially applauded.

Male–female differences in preferences for multiple partners and in thresholds for sexual activity (a more "unrestricted" sexuality, in this study's terms) generally have emerged as among the most robust aspects of evolutionary theory applied to human behavior, and Schmitt's research – which also represents a notable and perhaps unique degree of international, cross-disciplinary collaboration – may well provide the final nail in the coffin of the doctrine of male–female sexual indistinguishability. If not, then this will be testimony to the persistence of ideology over empirical science, not unlike that of theologians clinging to a geocentric universe in the decades after Copernicus and Galileo.

Schmitt's research is particularly notable not only in further documenting the increasingly well established patterns of male–female differences but also in testing specific, closely formulated hypotheses, finding impressive support for two ("sex ratio theory" and "strategic pluralism theory") along with disconfirmation of a third ("developmental-attachment theory").

In a research environment increasingly polarized into two seemingly irreconcilable camps, namely, evolutionary psychology on the one hand and the traditional social science model on the other, Schmitt's work is also important in helping to construct a much-needed bridge. (Or, looked at alternatively, it comprises a needed blow against simplistic *either/or* theories, whether they mistakenly focus only on biology or on culture.) Thus, despite his clear predilection for the importance of evolutionary considerations, Schmitt points unambiguously toward a substantial role for environmental factors, notably operational sex ratio and resource plenitude. As with earlier and unproductive debates about whether human aggression is instinctive, researchers need to refocus their thinking from the question of whether male–female differences in sociosexuality are instinctive to more productive avenues. Given that sociosexual inclinations, like inclinations toward aggression and violence, are almost certainly the adaptive consequence of natural selection, one question, at least, is this: Under what circumstances are women and men likely to embrace more sexually restrictive (or unrestrictive) behavior patterns? Not only is this matter theoretically important, but in a world beset with sexually transmitted diseases, sexually linked violence (especially toward women), and unwanted pregnancy, as well as the profound socioeconomic consequences of each of these, a deeper understanding of human sociosexuality is not only desirable but desperately necessary.

On a narrower note, *contra* Schmitt, I have not argued that with regard to sexual inclinations, "both men and women are naturally unrestricted (Barash & Lipton 2001), with sex roles in certain cultures causing large sex differences by suppressing women's innate tendency toward sexual promiscuity." Rather, I maintain that female inclinations toward extra-pair copulations have in the recent past been underestimated by too-facile generalizations on the part of sociobiologists – myself included (e.g., Barash & Lipton 2002). To clarify: There is little doubt that various cultures suppress female (and male) sexual inclinations to varying degrees, but as Schmitt's work demonstrates – and my own has supported – there is no reason to think that men and women are "naturally unrestricted" (or restricted) to the same degree. Certainly, some cultures repress female sexuality more than do others; the same can be said, doubtless, for men, although anecdotally at least, the amount of such repression appears less in the latter case. The reasons for this, incidentally, are not intuitively obvious, because given the salience of male–male competition, we might expect that cultural traditions, however patriarchal, might be structured – by powerful men – to limit the sexual opportunities of other men who are potential competitors. Alternatively, perhaps males tend to recognize the potentially destabilizing social effect of going too far in directly restricting the reproductive opportunities of other men, and they have typically opted instead to achieve greater control of female sexuality.

In any event, much of the research and speculation in evolutionary psychology revolves around sexual and reproductive strategies, in large part because much of human evolutionary psychology does in fact revolve around sexual and reproductive strategies (Gandolfi et al. 2002). On occasion, however, I have wondered whether the thrust of such efforts reflect the genuine, evolved predispositions of *Homo sapiens*, as opposed to the living conditions currently experienced by the great majority of practicing, publishing scientists. Granted that the projection of genes into the future is what natural selection is all about, and that reproduction (defined more inclusively to embrace assistance toward kin) is the means of achieving this end, it is also true that survival is typically a prerequisite for sexual selection, parenting, and so forth. Given the strong likelihood that during most of our evolutionary prehistory mortality factors were omnipresent, it seems equally likely that human nature has long been concerned with basic survival (resource accrual, predator avoidance, temperature regulation, suitable response to and avoidance of pathogens, etc.), at least as much as with reproduction *per se*. Although there may well be room for sex differences in survival selection, these promise to be less dramatic than sex differences in sexual selection, but no less important.

Because evolutionary psychologists and sociobiologists lead privileged lives (for the most part in affluent Western societies, in which food, shelter, and adequate medical are available, as well as a reasonable probability that researchers will not themselves be seriously menaced by predators), they are able to take survival pretty much for granted and focus their research energy on “sexier” topics, notably sex and reproduction. This in turn has led me to question whether evolutionary psychologists should focus more on those presumed mental modules – possibly including sex differences – that contribute to survival and perhaps less on sex and reproduction itself.

In this regard, once more Schmitt’s research is, if not conclusive, at least reassuring. His massive cross-cultural sample, which includes data from many developing countries, suggests that – as most of us have long intuited – sex is important, and so are sex differences, and not only for those in the affluent West. An important extension of the present study would therefore involve surveys of less privileged people in developing countries, among whom sheer survival cannot be taken for granted.

As evolutionary thinking matures, analysis of human mating patterns has been making headway in numerous disciplines within which it had previously been lacking. Thanks to the work of Schmitt and others, it seems likely that we are on the brink of a true multidisciplinary understanding of human sexuality, and not a moment too soon.

Sociosexual strategies in tribes and nations

Stephen Beckerman

Anthropology Department, Pennsylvania State University, University Park, PA 16802. stv@psu.edu

Abstract: Extending the findings of this work: Tribal peoples need study. Monogamy as marital institution and monogamy as sociosexual orientation must be separated. Sociosexuality must be considered as an aspect of somatic as well as reproductive effort; third-party interventions in sociosexuality need attention; and multiple sociosexual orientations, with frequency-dependent fitness payoffs equal at equilibrium, need to be modeled.

The interesting and important work reported in the target article is a necessary step toward an evolutionary understanding of human mating. That my comments are directed largely at its limitations and their implications for further research should not be taken as deprecation of this essential research but as an attempt to locate its results in their wider anthropological context.

Limitations of the sample. As Schmitt is clearly aware, a sample of people from modern states (the great majority of which enforce monogamy as their only legal form of marriage) does not represent the full range of human mating systems. As Schmitt notes, it is an anthropological commonplace that in most tribal societies polygyny is considered the preferred form of marriage, even if it is usually achieved only by a favored minority of successful men. As he further notes, a sample of college-age people, who are mainly at the beginning of their sexual careers and largely unmarried, does not necessarily represent the opinions and behaviors of even the same people a few years down the road. Less obvious is the problem that any survey of this sort is necessarily restricted to people who are literate and comfortable with the idea of grading behaviors and opinions on a numerical scale: The instrument inherently eliminates the tribal people, who represent 95% of human history, the time in which in which our modern sociosexuality evolved. The need for an alternate instrument that can be administered to nonliterate peoples who may not be able to count beyond 2 or 3 is clear. The problem of developing such an instrument, and calibrating it to surveys such as the current one, is immense.

Limitations of the descriptive apparatus. Schmitt appears generally to use the word *monogamy* to mean a sexually exclusive arrangement between a single man and a single woman. Sometimes, he uses monogamy to mean a marriage between a single man and a single woman. It is important to note that the two uses are distinct, and one cannot take the presence of the latter as evidence of the former. It is fairly common in tribal societies (no one knows how common, because the subject is underinvestigated and underreported, for obvious reasons of ethnographer discretion) that a married man’s brothers have legitimate sexual access to his wife. In many societies, men classified as brothers include parallel cousins (e.g., father’s brothers’ sons and mother’s sisters’ sons), as well as children of the same mother and father. It also happens that a man may have legitimate sexual access to his wife’s sisters, whether or not they are married to other men. The lending of a wife to a visitor, even one who is not close kin to the husband, is also common in some tribal societies. In a number of tribes, married women accept socially sanctioned, long-term lovers. Finally, there are a number of societies with ceremonies or other regular occasions for sexual license. All of these practices are compatible with monogamy as a system of marriage. The distribution of monogamy as a marital institution tells us little about whether sexual attentions are restricted or unrestricted. The terminological confusion of mating system with marital institution is a recurring problem in discussions of the evolution of human mating. Eventually, there may have to be some sort of nomenclatural convention.

Limitations of the theories. The theories evaluated here are significant attempts to deal with the evolution and current manifestations of human mating strategies. However, they simplify the natural history of these strategies in at least three important ways. First, all of them except that of Eagly and Wood (1999) see human sexual behavior simply as reproductive effort, the imperative of finding mates and producing offspring who will themselves reach reproductive status. However, since the advent, very early in human history, of the sexual division of labor and food sharing, sexual behavior has also been, particularly for females, an aspect of somatic effort, of the basic need to get enough food and other resources to stay alive. Put simply, in virtually all tribal societies, making a sexual connection (usually marriage) with a man or men is an indispensable part of the way a woman makes a living, irrespective of her reproductive interests. In the substantial number of societies in which a man cannot survive without the foods or services a woman supplies, the same is true for males. Although a mate is not a fundamental survival necessity for any of the college students surveyed by Schmitt’s collaborators, one cannot ignore the occupational and other economic advantages that can be obtained by a successful mating strategy in the modern nation state.

Second, in focusing on the individual’s own sexual attitudes and