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Book Review

The View From the Cuckold[1]

A Review of Steven M. Platek and Todd K. Shackelford (Eds.), *Female Infidelity and Paternal Uncertainty: Evolutionary Perspectives on Male Anti-Cuckoldry Tactics*. Cambridge University Press: New York, 2006. 248 pp. US$ 55.00 ISBN 0-521-60734-5 (paperback)

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It is often suggested that 10% of children are not biologically related to their putative genetic fathers. In a recent review of 67 studies, Anderson (2006) distinguished between studies of high and low paternity confidence samples, and found median rates of actual non-paternity (determined from blood or DNA exclusion tests) of 2% and 30%, respectively, with much variability across studies.[2] These data are supported by fairly high rates of extra-marital affairs in both men and women. In a recent study of a random sample of 9,852 Norwegians aged 18 to 49, 16% of men and 11% of women admitted to having had an affair *during their current relationship*, with 50% not using any form of contraception (Traeen, Holmen, and Stigum, 2007).

Evolutionary psychologists are curious about the selection pressures that extra-pair copulations have had on the design of men and women's mating psychology. Because of internal and non-immediate fertilization, men can never be entirely certain of paternity, whereas women are rarely concerned with maternity certainty. Men and women suffer different types of costs from their partner's dalliances, and thus evolutionary psychologists expect that men and women would have inherited overlapping but different sets of emotions, cognitive biases, and behavioral responses to the threat of or actual extra-pair mating. But why would men and women have affairs in the first place?

[1] All editorial decisions regarding this article were made by Associate Editor David Barash.

[2] Although not relevant to the argument here, even today's DNA paternity tests can only provide an "exclusion probability" of paternity, equivalent of rejecting the null hypothesis of paternity at a certain *p* value.

As in most mammals, the human male has a higher potential reproductive rate than the human female, due to differential parental investment—the minimum amount of investment necessary to produce an offspring (Clutton-Brock and Vincent, 1991). Throughout human evolution, men could increase reproductive output by simply adding sexual partners, whereas women would do better not by simply adding notches in their bedposts but by adding sexual partners who possessed certain qualities: those who would provide better genes and/or resources. The quality of the partner is thus more important to women than to men. This would suggest that men and women would have inherited a tendency for having affairs, but for entirely different ultimate reasons (the degree of similarity of proximal causes—boredom, need for attention, sexual outlet—is an interesting question but not relevant here).

A woman's ideal mating strategy involves securing a mate who can not only provide good genes, but one who is also capable and willing to invest in offspring. Carrying out this strategy is not always possible, however, and many researchers have suggested that women would have evolved a suite of behaviors that allow them to achieve the best of both worlds. Women may have evolved the willingness to secure a mate with material resources and emotional investment, while at the same time obtaining a high-quality genetic contribution from another partner. Cuckoldry occurs when a woman deceives her male social partner into investing in offspring conceived with another man. Although the risks of pursuing such a strategy are high for women (e.g., retaliation, loss of social partner leading to loss of resources for offspring), the risks are even higher for the male social partner: Cuckolded men lose both invested resources and reproductive opportunity.

Platek and Shackelford's (2006) edited book, *Female Infidelity and Paternal Uncertainty: Evolutionary Perspectives on Male Anti-Cuckoldry Tactics*, attempts to elucidate the strategies men use to thwart women's attempts to cuckold them. Three groups of strategies are suggested: early prevention methods, intra-vaginal methods, and post-parturition paternity assessment methods. Early prevention methods are considered to be the first line of defense in cuckoldry-avoidance, in that men are expected to engage in behaviors that will reduce the likelihood that their partners will be unfaithful in the first place.[3] Intra-vaginal anti-cuckoldry tactics are employed when a man has failed at preventing his partner from being unfaithful, and attempts to avert fertilization by another man that may result from extra-pair mating. The final line of defense involves assessing the likelihood of paternity of the child post-parturition and adjusting investment accordingly.

The section on mate guarding begins with an excellent introduction by Gangestad, who carefully lays out alternative explanations for female extra-pair copulations. Shackelford and Goetz then examine male prevention tactics. One of the mating strategies examined as an early prevention method is violence against women within partnered relationships. As noted by previous researchers, the evolution of sexual jealousy in men may be related to paternal uncertainty (e.g., Daly, Wilson, and Weghorst, 1982; Symons,

[3] Another group of strategies, antedating early prevention methods, involves selecting partners who are less likely to later engage in extra-pair copulation. These are not discussed in this book but have been the subject of prior research (e.g., Buss, 1989).

1979). Based on this observation, Shackelford and Goetz provide data suggesting a link between men's use of mate retention tactics (i.e., behavioral manifestations of sexual jealousy) and violence towards their partners. Data from three different samples (men, women, and married couples), and from three different perspectives (i.e., the perpetrators', the victims', and a combination of the two), suggest that men's use of direct guarding (e.g., monopolization of time), intersexual negative inducements (e.g., emotional manipulation), and public signals of possession (e.g., physical possession signals) were positively correlated with controlling behaviors, violence, and injuries against their female partners.

The section on intra-vaginal anti-cuckoldry tactics focuses on sperm competition, providing fascinating descriptions of the semen-displacement hypothesis (Gallup Jr. and Burch) and the psychobiology of semen (Burch and Gallup Jr.). Goetz and Shackelford provide interesting data indicating a link between a man's risk of being cuckolded and the use of mate retention tactics, semen-displacing tactics, and a combination of the two tactics. Men's recurrent risk of sperm competition was assessed through the participants' ratings of their partner's physical and sexual attractiveness and the participants' ratings of other men's evaluations of their partner's physical and sexual attractiveness, because more attractive women are more likely to be unfaithful (e.g., Dijkstra and Buunk, 2001; Streeter and McBurney, 2003). Recurrent risk of sperm competition was significantly correlated with men's use of mate retention tactics and semen-displacing tactics, and these two tactics were highly correlated. This section also includes discussions of the interesting notions that the refractory period may function to prevent sperm displacement of one's own sperm, that women should not be motivated to have sex with their main partner right after an extra-pair copulation because of the possibility of sperm displacement (the penis appears to be shaped to do just that), that a man may manipulate a woman's mood via semen content (Rice, 1996, has experimentally shown something similar in fruit flies), and that preeclampsia (failure to complete the second implantation phase, at the end of the first trimester) may result from the presence of "unfamiliar" sperm.

An interesting implication of the notion of male intra-vaginal competition is that male sexual arousal need not always be tightly connected to male sexual preferences. In general, men physiologically respond to sexual situations that match their sexual interests (something that is not quite true in women). But intra-vaginal battles demand men to become aroused to situations that are actually unpleasant for them, for instance the suspicion of their partner's infidelity. Men, therefore, may become very sexually aroused at the *idea* of their partner having sex with someone else, even though they would strongly avoid such a situation (see work by Pound, 2002). Of note, partner swapping seems to involve older couples and appears to be a way to reignite flagging sexual passions.

The last section describes post-parturition assessment of paternity and focuses on sex differences in allocation of resources based on facial similarities. Burch, Hipp, and Platek suggest that men differentially allocate hypothetical resources and punishments toward images of children based on physical resemblance between themselves and a child's image. As noted by Burch et al., a man's ability to determine physical resemblance is dependent on that man having seen his own face—something that may not have been possible before mirrors. As such, men may have been selected over time to rely on descriptions of resemblance from members of their social group.

To test the effect of this "social mirror", Burch et al. describe an innovative study in which men and women were presented with images of children, some of which had been

morphed with the participants' images. Participants were also provided with feedback regarding resemblance between themselves and the images they were viewing. Similar to previous research (e.g., Platek, Burch, Panyavin, Wasserman, and Gallup Jr., 2002), men were more likely than women to select self-morphed images of children (i.e., images of children that had been morphed with an image of the participant) in response to questions regarding positive resource allocation (e.g., adoption), suggesting that men possess the ability to detect physical resemblance in offspring. Affirmative feedback did not increase men's likelihood to allocate resources to self-morphed images, but men were significantly less likely to allocate resources to self-morphed images when told the morphed image did not resemble them, suggesting that, to a certain extent, men also rely on ascriptions of resemblance from their family and peers.

Platek and Thomson note in a later chapter that sex differences in resource allocation are accompanied by sexually dimorphic neurobiological correlates: Only men exhibit differential brain activation in the anterior left prefrontal lobe and anterior cingulated gyrus when looking at self-morphed faces in comparison to non-morphed faces (e.g., Platek et al., 2004), and only women show greater activation in other cortical areas (e.g., right and medial prefrontal cortices) in response to all children's faces.

Overall, the material presented in this book provides a concise summary of recent work investigating the evolution of anti-cuckoldry tactics in men. The material is quite interesting and well-written, in particular the section on intra-vaginal tactics. It is clear that this area of mating psychology has been neglected and requires more attention, and that the best is yet to come.

The book's limitations are mostly due to the fact that the study of anti-cuckoldry tactics is in its infancy. Several chapters cover the same information, and thus the book is at times repetitive, in particular those chapters in sections in which the material presented is relatively recent (i.e., the chapters on early prevention methods and kin recognition post-parturition). Likewise, some chapters are quite thin and could have been merged into more substantial chapters. For instance, although the information described in the post-parturition section is certainly interesting, it would have been beneficial to amalgamate these two chapters, and include other chapters on different post-parturition paternal investment strategies, such as infanticide and child abuse.

In addition, although much of the research in the book is quite compelling, some sections are not. As noted by several of the authors, much of the research presented is correlational, and the direction of the relationship between variables such as mate retention behaviors and violence against partners is far from clear. Many of the authors lamented, with good reasons, the absence of experimental or longitudinal research. We were also surprised that there were no chapters on anti-cuckoldry tactics in other species; not only because we are biophilic, but because nonhuman research sometimes speaks to what is possible, to convergent evolution to similar problems (humans do behave a lot like birds), and also provides a more general scientific context to guide human research. Finally, we would have liked to see more research on female counter-tactics, but that may be a topic for a future book.

This book provides a much-needed compendium in an emergent and fascinating area of mating psychology, while offering a solid basis that encourages further thought into men's and women's mating behavior. It would be a valuable resource for graduate and

undergraduate seminars in mating psychology, as well as for anyone interested in better understanding the ubiquitous conflicts between the sexes.

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