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The Journal of Mind and Behavior  
Summer and Autumn 2006, Volume 27, Numbers 3 and 4  
Pages 367–372  
ISSN 0271–0137

**Female Infidelity and Paternal Uncertainty: Evolutionary Perspectives on Male Anti-Cuckoldry Tactics.** Edited by Steven M. Platek and Todd K. Shackelford. Cambridge, England: Cambridge University Press, 2006, 248 pages, \$120.00 hard cover, \$55.00 soft cover, \$44.00 Adobe e-reader.

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Cross-culturally, women interact more with children than do men, spend more time on parenting behaviors, and invest more in their children no matter how “investment” is measured (Bjorklund and Pelligini, 2002; Bjorklund and Shackelford, 1999). In traditional societies, in our prehistoric past, and among many primates, child rearing is a task usually left to groups of female relatives. Furthermore, a fascination with infants is almost universal in primates, but this strong interest in playing with infants seems to be restricted to females (Hrdy, 1999; Maestriperieri and Pelka, 2002). The pervasiveness of these patterns of behavior has led many researchers to argue that females have evolved a number of psychological parenting mechanisms that are lacking in males.

The million dollar question, of course, is *why* this would be the case. What tricks of evolution have made mothers so much more caring than fathers when it comes to the care and rearing of their offspring? The selection pressure that brought about the large differences between fathers and mothers in the willingness to invest in offspring is simple and straightforward. Whereas females are *always* sure who their children are, males *never* are. Hence, males can achieve greater gains in reproductive success by spending their time mating rather than parenting, and the greater uncertainty surrounding parenthood for males has implications that echo not only through the extended family, but throughout the traditions of all human cultures as well.

Steven Platek and Todd Shackelford's edited volume *Female Infidelity and Paternal Uncertainty: Evolutionary Perspectives on Male Anti-Cuckoldry Tactics* zeroes in on the strategies that males have evolved to assure paternity throughout the timeless tug-of-war between the sexes. Males who lived their lives as unwitting cuckolds, investing their hard-earned resources in the genes carried by other men's children, became evolutionary dead ends. Females who failed to manage the delicate balance between acquiring the best possible male genes for their offspring while also hanging onto

reliable male providers suffered a similar fate. Hence, those of us alive today carry the arsenals shaped by natural selection that insure that human sexual relationships will always be a lively and interesting topic of conversation. *Female Infidelity and Paternal Uncertainty* not only describes the anti-cuckoldry strategies that have evolved over time; it also explores the ramifications of these strategies for romantic relationships, child rearing, and violence against spouses, partners, and children.

This book grew out of a symposium held at the annual meeting of the Human Behavior and Evolution Society in 2003. The quality of the writing is consistently clear and to the point, and the writing style across the different chapters blends together quite nicely for an edited book. The material is fairly technical though, and it is pitched at a sufficiently high level that at least a cursory acquaintance with the principles of evolutionary psychology and reproductive biology are necessary to fully appreciate the ground covered by most of the chapters. Perhaps because so many of the chapters are written by different combinations of the same authors, there is a bit too much overlap — the book could have been streamlined a bit by combining some of these chapters. Nevertheless, this is an important contribution to the field of evolutionary psychology and every graduate student and researcher whose work is in any way involved with the sexual relationships of men and women will want to have a copy of this book.

The book is divided into four parts that roughly parallel the sequence of anti-cuckoldry strategies that males engage in:

- a. Males do whatever they can to prevent sexual infidelity by their female partners.
- b. Having failed to prevent infidelity, male sperm has evolved a variety of tricks for out-competing the sperm of other men.
- c. On the chance that the previous strategies may have failed, men engage in differential parental investment according to how well cues from the children reassure them of paternity.

Part I is an introduction and overview of the controversies and debates that this book addresses. Consequently, Part I should be required reading for any individual who is not already well versed in the field. Part II examines the “mate guarding” strategies that men have evolved to prevent their partners from dallying with other males. Part III deals with the “intravaginal tactics” such as sperm competition and semen displacement that have evolved to deal with the situation that occurs when mate guarding has proven to be less successful than the male might have hoped. Part IV is concerned with the dilemma faced by men after the birth of a child when they must ascertain whether or not they are in fact the fathers of the children in question. This review will address each of these sections in turn.

Part I, “Introduction and Overview,” consists of a chapter written by the editors (Platek and Shackelford) and another written by David Geary. The chapter by Steven Platek and Todd Shackelford presents an overview of the book and describes how the chapters will fit together to paint a complete picture of how males have evolved to deal with the problem of paternity uncertainty. David Geary’s chapter provides a nice review of human evolutionary history and primate ecology as it relates to human mating and parenting behaviors. He also provides an overview of the anti-cuckoldry mechanisms that will be examined in later chapters: relationship jealousy, mate guarding, paternity cues, and sperm competition. The first two chapters firmly establish that the idea of parental investment as a trade-off between the benefits to offspring and the risks of cuckoldry will be a central organizing theme of the book.

Part II is a collection of three chapters, one by Steve Gangestad and two by Aaron Goetz and Todd Shackelford. Gangestad’s chapter poses the question “Do females

possess adaptations to facilitate extra-pair matings?" He concludes that they do, based upon the tantalizing changes in female mate preferences that appear across the menstrual cycle. In a nutshell, Gangestad explains that females who are in the most fertile phase of their menstrual cycle prefer the scent of symmetrical men who are probably carrying healthy genes (Gangestad and Thornhill, 1998; Rikowski and Grammer, 1999; Thornhill and Gangestad, 1999), men with more masculine faces (Johnston et al, 2001) and deeper voices (Puts, 2005), and men who engage in behaviors that display dominance and competitiveness (Gangestad et al, 2004). Females report more sexual fantasies and attraction to men other than their partners when they are most fertile (Gangestad, Thornhill, and Garver, 2002). Gangestad also reports that women choose talented men (i.e., good genes) over wealthy men more often when fertile, but only when considering a man as a short-term mating partner (Haselton and Miller, 2006). Gangestad reviews alternative explanations for the aforementioned findings that do not assume that these phenomena are evolutionary by-products of female desires to seek extra-pair copulations, but he finds these other explanations to be less than satisfying.

The two chapters by Goetz and Shackelford are about predicting when men will commit acts of violence or rape against their partners, and they propose that these behaviors are almost always triggered by the feelings of sexual jealousy that have evolved to protect men from the possibility of their partners engaging in sex with other men. Jealousy is a highly aversive emotional state that motivates individuals to take whatever actions might be necessary to avoid the loss of a current (or future) partner who is considered to be reproductively valuable. Chapter four focuses on the warning cues to violence in romantic relationships. Male behaviors that have been related to relationship violence include direct guarding of the female by monopolizing her time and checking on her whereabouts (Wilson et al, 1995), punishing possible infidelity with yelling and threats, excessive affirmations of love and gift-giving, and public signals of possession used by males to advertise their "ownership" over the females they are with. Shackelford and Goetz report the results of three studies that confirm most, but not all, of their hypotheses. They found that the strongest predictors of male relationship violence were emotional manipulation of the female (e.g., "I'll kill myself if you ever leave me") and vigilance/monopolization of the female's time. In chapter five, Goetz and Shackelford explore the issue of why men sometimes rape their partners in committed relationships. Other researchers (e.g., Frieze, 1983; Thornhill and Thornhill, 1992) have reported that marital/relationship rape is most commonly performed by sexually jealous men following either an accusation of female sexual infidelity or a breakup. In this chapter, Goetz and Shackelford report the results of two surveys of 246 men and 276 women in committed relationships that confirm that relationship rape is positively related to infidelities by the female and to mate-retention behaviors by the male.

Part III consists of five chapters co-authored by various combinations of five people. All of these chapters are concerned with strategies evolved by males to deal with cuckoldry after the fact. Whenever a female mates with multiple partners in a short period of time, sperm from these males may coexist simultaneously in the reproductive tract. It is clear from the information presented in these chapters that this has been a recurrent evolutionary problem for males throughout human history and that they have evolved multiple adaptations to deal with it. It is my opinion that Part III describes the most interesting and least publicized evidence for the evolution of anti-cuckoldry strategies. Unfortunately, in a brief review like this there is not enough time to detail all of the fascinating recent findings by researchers in this

area. However, these chapters are a virtual treasure trove of fun things to know and tell about the sneaky ways in which male biology goes to war against its intrasexual competition. Thus, we are treated to detailed explanations of how the number of sperm in an ejaculation is calibrated according to cues about the probability of sperm competition from other men and how the structure of the human penis has evolved as a pile driver for displacing the sperm of other men during intercourse. We learn about how different types of sperm (egg getters vs. kamikaze sperm) may have evolved to make the fertilization of the female a true team effort. This chapter even treats us with delightful speculation about the determinants of the intensity and depth of penile thrusting and why watching two presumably heterosexual women making love holds erotic appeal for men. [The short version: It signals the presence of sexually receptive women in the absence of competition from other men's sperm.] Chapter 8 by Rebecca Burch and Gordon Gallup on the "Psychobiology of Human Semen" is especially engaging. Based upon their review of the literature, Burch and Gallup generate a series of predictions about the effects of unprotected sexual intercourse on heterosexual women, reaching the conclusion that semen chemistry has evolved to influence female reproduction in ways that benefit the male.

The final two chapters of the book (Part IV) tackle the issue of how men calculate their odds of paternity from the degree of resemblance between child and father. Chapter 11 (Burch, Hipp, and Platek) brings up the interesting problem of exactly how men handled this in an ancestral world without mirrors when they did not really have a very clear idea of what they themselves actually looked like. The authors describe how important the opinions of other people become in this situation (the "social mirror") and how the opinions of some people (e.g., the female and her immediate relatives) are more suspect than others. In a series of creative experiments, Steve Platek and his colleagues (2002, 2003) demonstrated the importance of perceived paternity for a man's investment decisions. In these studies, subjects were exposed to a series of children's faces which had been morphed to resemble the subjects in the study to varying degrees. The subjects were then asked to make hypothetical investment decisions such as which one of the children he or she would be most likely to adopt, spend the most time with, punish the least, or give money to. In these studies, males, but not females, used the degree of resemblance between themselves and the child as the guide for how much investment they would provide. Interestingly, the men in these studies appeared to be completely unaware of the effect that the child's resemblance had on their decisions. The chapter ends by exploring the implications that physical resemblance has for sibling relationships, non-family social relationships, and xenophobia.

Chapter 12 (Platek and Thomson) describes studies using functional magnetic resonance imaging to show that different neural activity occurs in the brains of men and women when looking at the faces of children. More specifically, males typically show more overall activation when looking at faces that have been morphed to resemble their own than do females.

In summary, *Female Infidelity and Paternal Uncertainty* is a nice addition to the field and indispensable for anyone doing research on human sexual relationships. It will also prove accessible and interesting to the more casual reader who simply wants to know more about how natural selection has shaped everything from the biochemistry of semen to the behavior patterns of jealous males to help males avoid the gnawing insecurity and evolutionary damage that accompanies life as a cuckold.

## References

- Bjorklund, D.F., and Pellegrini, A.D. (2002). *The origins of human nature: Evolutionary developmental psychology*. Washington, DC: American Psychological Association.
- Bjorklund, D.F., and Shackelford, T.K. (1999). Differences in parental investment contribute to important differences between men and women. *Current Directions in Psychological Science*, 8, 86–89.
- Frieze, I.H. (1983). Investigating the causes and consequences of marital rape. *Signs: Journal of Women in Culture and Society*, 8, 532–553.
- Gangestad, S.W., and Thornhill, R. (1998). Menstrual cycle variation in women's preference for the scent of symmetrical men. *Proceedings of the Royal Society of London B*, 262, 727–733.
- Gangestad, S.W., Thornhill, R., and Garver, C.E. (2002). Changes in women's sexual interests and their partners' mate retention tactics across the menstrual cycle: Evidence for shifting conflicts of interest. *Proceedings of the Royal Society of London B*, 269, 975–982.
- Gangestad, S.W., Simpson, J.A., Cousins, A.J., Garver-Apgar, C.E., and Christensen, P.N. (2004). Women's preferences for male behavioral displays change across the menstrual cycle. *Psychological Science*, 15, 203–207.
- Haselton, M.G., and Miller, G.F. (2006). Women's fertility across the cycle increases the short-term attractiveness of creative intelligence. *Human Nature*, 17, 50–73.
- Hrdy, S.B. (1999). *Mother nature: Maternal instincts and how they shape the human species*. New York: Ballantine Books.
- Johnston, V.S., Hagem, R., Franklin, M., Fink, B., and Grammer, K. (2001). Male facial attractiveness: Evidence for hormone mediated adaptive design. *Evolution and Human Behavior*, 23, 251–267.
- Maestripieri, D., and Pelka, S. (2002). Sex differences in interest in infants across the lifespan. *Human Nature*, 13, 327–344.
- Platek, S.M., Burch, R.L., Panyavin, I.S., Wasserman, B.H., and Gallup Jr., G.G. (2002). Reactions toward children's faces: Resemblance matters more for males than females. *Evolution and Human Behavior*, 23, 159–166.
- Platek, S.M., Critton, S.R., Burch, R.L., Frederick, D.A., Myers, T.E., and Gallup Jr., G.G. (2003). How much paternal resemblance is enough? Sex differences in hypothetical investment decisions but not in the detection of resemblance. *Evolution and Human Behavior*, 24, 81–87.
- Puts, D.A. (2005). Mating context and menstrual phase affect women's preferences for male voice pitch. *Evolution and Human Behavior*, 26, 388–397.
- Rikowski, A., and Grammer, K. (1999). Human body odour, symmetry, and attractiveness. *Proceedings of the Royal Society of London B*, 266, 869–874.
- Thornhill, R., and Gangestad, S.W. (1999). The scent of symmetry: A human pheromone that signals fitness? *Evolution and Human Behavior*, 20, 175–201.
- Thornhill, R., and Thornhill, N.W. (1992). The evolutionary psychology of men's coercive sexuality. *Behavioral and Brain Sciences*, 15, 363–421.
- Wilson, M., Johnson, H., and Daly, M. (1995). Lethal and nonlethal violence against wives. *Canadian Journal of Criminology*, 37, 331–361.