

Commentary on Wood et al., 2014

Beyond 'evolutionary versus social': moving the cycle shift debate forward

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Abstract

Wood and colleagues thoroughly evaluate the evidence for menstrual cycle shifts in ratings of several male characteristics and conclude that their analyses fail to provide supportive evidence for consistent cycle effects. The topic of menstrual cycle shifts in mate preferences has been strongly debated, with disagreements over both scientific content and practice. Here, we attempt to take a step back from these acrimonious exchanges and focus instead on how to interpret menstrual cycle shifts in mate preference tasks, independently from the question of when, or if, task performance varies with cycle stage. A greater consideration of domain-general mechanisms could provide an opportunity for investigating how evolved predispositions interact with socially transmitted information in biasing women's responses on mate preference tasks.

Key words: menstrual cycle, mate preferences

Previous researchers have argued that menstrual cycle shifts in responses on mate preference tasks reveal the existence of evolved psychological mechanisms that facilitate complex female mating strategies. Wood and colleagues have applied rigorous meta-analytic techniques to the question of whether women's responses on mate preference tasks vary across the cycle, using a large sample of studies, and argue that the lack of evidence for consistent cycle shifts in preferences severely undermines the evolutionary psychology characterisation of mating strategies. We share Wood and colleagues' concern that attributing women's responses to domain-specific, evolved psychological mechanisms risks producing an overly adaptationist account of human behaviour, particularly given that almost any pattern of cycle shifts could too easily be ascribed an adaptive explanation. However, evolutionary psychologists studying mate preferences have started to consider a broader range of variables that might affect task performance (e.g., Little *et al.*, 2011), and we feel that Wood and colleagues could have taken this opportunity to foster a more moderated, integrative discussion of the literature.

Here, we briefly present evidence that domain-general mechanisms, rather than the more domain-specific mechanisms typically favoured by evolutionary psychologists, could underlie reported cycle shifts in responses on mate preference tasks. As Wood and colleagues mention, ovarian hormones could plausibly impact upon performance on computer-based preference tasks as a result of hormonal effects on motivation, affect and the processing of visual stimuli (e.g., van Wingen *et al.*, 2011). Scott and colleagues (2013) also point out that the aversion to faces seen as threatening could be enhanced during the non-fertile phase due to changes in circulating hormones, resulting in a reduced preference for potentially intimidating male faces. Cycle shifts have been reported in sensitivity to other threatening stimuli (e.g., Derntl *et al.*, 2008), possibly related to progesterone-mediated, domain-general sensitivity to threat. Neural systems are more responsive to both anticipated and actual reward during the follicular phase of the cycle leading up to ovulation (e.g., Dreher *et al.*, 2007), and recent data suggest that risk-taking behaviour

increases around ovulation (Pearson and Schipper, 2013). Thus, any apparent tendency for women to be attracted to extra-pair partners at the time of high conception risk could reflect a more general change in response to novelty and reward.

The evidence that domain-general mechanisms could underlie reported cycle shifts still leaves open the question of why the response to threat and reward might vary with ovarian hormone levels. However, our point is not simply that we need a greater consideration of domain-general processes and a clearer understanding of the neural and endocrine mechanisms that might be involved in cycle shifts. As argued by Wood and Eagly (2012), evolutionary approaches should not be placed in opposition to studies that focus on the role of social factors. The clearest understanding of sex differences in behaviour is likely to result from considering the complex interactions between social factors, predispositions and developmental environments. Both social factors and neuroendocrine responses, for instance, could jointly influence women's performance on preference tasks, particularly given that developing neuroendocrine systems are sensitive to external environments. Current debates within the evolutionary biology literature that question the usefulness of separating proximate and ultimate questions (e.g., Laland *et al.*, 2011) are highly relevant to researchers studying human behaviour, including mating strategies.

In summary, we are supportive of the use of meta-analyses, and we share Wood and colleagues' caution about inferring domain-specific, evolved psychological mechanisms on the basis of cycle shifts. Critics of evolutionary psychology have more generally argued that inadequate consideration of domain-general mechanisms and the role of culture provides a misleading view of how the human mind is constructed (e.g., Bolhuis *et al.*, 2011). The target article provides an excellent opportunity to think more broadly about how cycle shifts might be interpreted in the future and to explore the middle ground between the current opposing viewpoints.

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