



## FlashReport

## Would male conspicuous consumption capture the female eye? Menstrual cycle effects on women's attention to status products

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## ABSTRACT

In line with evolutionary principles of reproduction and mate selection, the current research shows that women's attention to status cues fluctuates across their menstrual cycle. Specifically, we show that women pay more attention to status products in a visual display around ovulation than in other phases of their menstrual cycle. Pill use eliminates these cycle phase effects. The results are discussed in relation to research on female mating goals and conspicuous consumption.

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Prior research investigated why individuals engage in the conspicuous consumption of status products (e.g., Rucker & Galinsky, 2009; Sivanathan & Pettit, 2010). However, no research explicitly examined when status products draw people's attention. This paper approaches this issue from an evolutionary psychological perspective. Research within this paradigm has documented that women favor men with status and, correspondingly, that men signal their mate value through conspicuous consumption. We investigate whether and when women pay attention to such signals of status.

Our research contributes to the literature in two ways. First, while previous studies focus on women's self-reported *interest* in high-status men, we focus on their spontaneous *attention* to status signals. Second, we examine the effectiveness of (men's) conspicuous consumption by investigating how women's attention to status products shifts across the menstrual cycle. It has not been studied before how mate selection motives, activated around ovulation, influence women's relation with specific products.

### Theoretical background

Sex differences in parental investment have led to differences in partner preferences (Bjorklund & Shackelford, 1999; Trivers, 1972). While men prefer youthful and attractive women (Buss, 1989; Buss & Schmitt, 1993; Kenrick & Keefe, 1992; Singh, 1993), women favor mates who exude genetic fitness and who are able to invest (economic) resources in their offspring (Bjorklund & Shackelford, 1999; Buss, 1989; Hill & Buss, 2008). Consequently, women are attracted to men with status (Colarelli & Dettmann, 2003; Kenrick, Sadalla, Groth, & Trost, 1990). In response, men in a mating mindset attach more importance to their status (Roney, 2003; Saad & Vongas, 2009) and show an increased interest in status-signaling products (Griskevicius et al., 2007; Janssens et al., 2011).

Women's mating motivations increase at peak fertility (i.e., around ovulation). Ovulation may activate two goals. The *mate attraction goal* involves displaying one's qualities to attract a mate. Therefore, ovulating women attempt to enhance their appearance (Durante, Griskevicius, Hill, Perilloux, & Li, 2011; Haselton, Mortezaie, Pillsworth, Bleske-Rechek, & Frederick, 2007; Hill & Durante, 2009). The *mate selection goal* involves screening potential mates for desired qualities. For instance, ovulating women are attracted to more masculine, taller, and more socially dominant men (Gangestad, Thornhill, & Garver-Apgar, 2005; Lukaszewski & Roney, 2009). As men may attempt to signal their mate qualities through their possessions ovulating women may also be particularly interested in men who engage in conspicuous consumption.

However, women's interest in high-status men may not necessarily translate to an increased sensitivity to male conspicuous consumption around ovulation because conspicuous consumption

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may not be a *trustworthy* signal of status. After all, men with access to credit may improve their capacity to purchase status products, for instance by running up debt, while their reproductive qualities remain unchanged (Colarelli & Dettmann, 2003; Gallup & Frederick, 2010). In fact, conspicuous consumption may even signal the opposite of status as people are more interested in status products when their self-esteem is threatened (Sivanathan & Pettit, 2010) or when they feel powerless (Rucker & Galinsky, 2008, 2009).

Although women would be better off focusing on less ambiguous signals of male mate value, conspicuous consumption may nevertheless draw their attention. First, conspicuous consumption may have become a less trustworthy signal of status only in our recent past. In fact, when Veblen (1899) coined the term conspicuous consumption, he mainly described the consumption pattern of the rich in a time when luxury was unattainable for the masses (Silverstein & Fiske, 2003). Second, women may spontaneously pay attention to any signal of status. Making inferences about its trustworthiness may require more deliberative processing.

In sum, while women may be interested in high-status men, it does not necessarily follow that they would also be interested in men who engage in conspicuous consumption. Still, if women's preference for status results from evolutionary selection mechanisms, one could expect women to be *spontaneously* interested in any signal that may identify high-status men, especially around ovulation. If this assumption holds, this heightened interest should be so fundamental that it affects women's orientation of *attention* (see also Anderson et al., 2010) towards signals of status, even in the absence of men. Consequently, we predict that ovulating women more readily perceive status products in their environment.

This predicted effect of ovulation is assumed to be driven by hormonal shifts across the menstrual cycle (e.g., Garver-Apgar, Gangestad, & Thornhill, 2008; Lukaszewski & Roney, 2009). However, pill usage suppresses the natural flow of hormones and eliminates cycle effects on mate preferences and search effort for mating partners (Miller, 2010). Although this does not allow us to make predictions about pill users' average level of attention to status products, it does imply that their attention will not vary across cycle phases. In sum, we hypothesize the following:

**H1.** Female attention to status products is higher around ovulation (fertile phase of menstrual cycle) than before (menstrual phase) and after (luteal phase) ovulation.

**H2.** Pill use moderates the effect of cycle phase on attention to status products, such that the effect of cycle phase will only be found in normally cycling women, not in pill users.

## Empirical evidence

### Participants and procedure

One hundred and sixty-two female students ( $M_{\text{age}} = 22.34$ ,  $SD = 1.57$ ) participated in the study. Of them, 38 did not use a hormonal contraceptive.

### Visual attention task

Participants sequentially saw ten computerized visual displays, each containing images of six products (cf. Roskos-Ewoldsen & Fazio, 1992). For each display, the products were randomly arranged in a circle. Exposure to each display lasted one second after which participants had 25 s to write down what they had seen. Each display contained one status product (Breitling watch, Porsche, Aston Martin, laser keyboard, exclusive mansion, I-mate, I-pod, Maserati, Mont Blanc pen, home cinema); the remaining five products were functional products (e.g., bucket, towel, bicycle,...). As we study attention to signals of male mate quality, we did not include typically

feminine products (e.g., jewelry). In line with previous research (e.g., Griskevicius et al., 2007), the status products were pretested to be more conspicuous ( $M_{\text{status}} = 5.03$ ,  $SD = .34$  vs.  $M_{\text{functional}} = 1.96$ ,  $SD = .89$ ,  $t(37.17) = 18.50$ ,  $p < .001$ ) and expensive ( $M_{\text{status}} = 6.22$ ,  $SD = .66$  vs.  $M_{\text{functional}} = 2.95$ ,  $SD = 1.05$ ,  $t(58) = 9.46$ ,  $p < .001$ ) than the functional products (scales from 1 to 7).

We tested our hypotheses using two measures: recall probability and recall position. To measure *recall probability*, we calculated the proportion of recalled status products (number of recalled status products divided by 10) as well as the proportion of recalled functional products (number of recalled functional products divided by 50). To measure *recall position*, per display, we determined a position score for the status product by tallying the reverse ordinal position in which it was recalled. So, in case four products were recalled, the status product received a score of 4 if it was recalled first and a score of 1 if it was recalled last. If the status product was not recalled, it received a score of 0. We summed the position scores across all displays and transformed this absolute score into a relative position score by dividing it by the total number of products recalled across all displays. Higher numbers indicate earlier recall of status products. Alternative coding schemes yielded similar results.

### Menstrual cycle data

After the attention task, participants indicated whether they used a contraceptive pill or other hormone based medicine and indicated on a calendar when their last menstruation had started (day 1 of the cycle). Participants were divided in three cycle phase groups: the menstrual phase (days 1–5), the fertile phase (days 9–15), and the luteal phase (days 18–28; cf. Miller, Tybur, & Jordan, 2007).<sup>4</sup> Participants who reported an unusually long cycle, who fell in between two phases or who reported not to menstruate were excluded. At the time of the experiment, 9 normally cycling and 23 pill using women were in the menstrual phase, 11 normally cycling and 25 pill using women were in the fertile phase and 12 normally cycling and 47 pill using women were in the luteal phase.<sup>5</sup>

## Results

A three-way ANOVA with cycle phase and pill use (pill vs. normally cycling) as between-subjects factors and product type (status vs. functional) as within-subjects factor was conducted on the *proportion of recalled products*. Consistent with our predictions, we found a significant three-way interaction,  $F(2, 121) = 5.12$ ,  $p = .007$  (cf. Fig. 1). For the status products, we found no main effect of pill use,  $F(1, 121) = 1.76$ ,  $p = .19$ , but a significant main effect of phase,  $F(2, 121) = 4.13$ ,  $p = .02$ . In the fertile phase women recalled more status products than in other phases. However, this main effect was entirely driven by a significant interaction with pill use,  $F(2, 121) = 5.07$ ,  $p = .008$ . For normally cycling women, the proportion of recalled status products varied across the cycle,  $F(2, 29) = 7.14$ ,  $p = .003$ . Around ovulation, they recalled a significantly larger proportion of status products ( $M = .36$ ,  $SD = .16$ ) than during other phases (both  $ps < .03$ ), consistent with H1. The difference between women in the menstrual ( $M = .23$ ,  $SD = .11$ ) and luteal phase ( $M = .18$ ,  $SD = .09$ ) was not significant ( $p = .29$ ). For pill users, attention to status products did not differ across the cycle,  $F(2, 92) = .14$ ,  $p = .87$ , supporting H2. The proportion of recalled status products did not differ between normally cycling and pill using women in the

<sup>4</sup> Studies relying on self-report data (e.g., Gangestad et al., 2007; Lukaszewski & Roney, 2009; Miller et al., 2007) obtained results that are consistent with studies using biological measures of hormone levels across the cycle (e.g., Haselton et al., 2007; Hill & Durante, 2009).

<sup>5</sup> The limited number of non-pill users results from random sampling. This small sample size has not comprised our analyses and results as we found no outliers that drive the obtained effects.

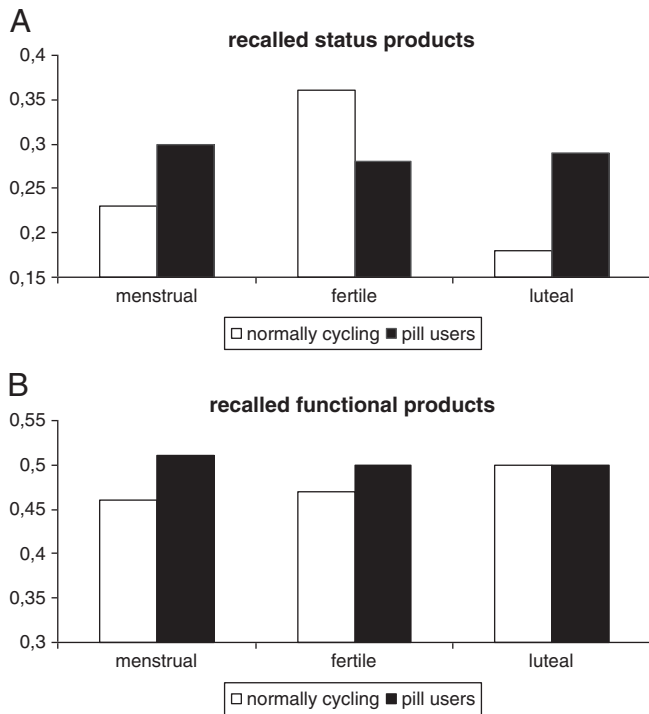


Fig. 1. Proportion of recalled products.

menstrual phase ( $p=.17$ ), but it did in both other phases, (both  $ps<.05$ ).

For the proportion of recalled functional products, we found a marginally significant main effect of pill use,  $F(1, 121) = 2.87, p = .09$ . Pill-using women recalled slightly more functional products than normally cycling women. More importantly, no main effect of cycle phase, nor an interaction effect of cycle phase and pill use was found (both  $ps>.43$ ).

A two-way ANOVA with cycle phase and pill use as between-subjects factors on the *recall position* of the status products yielded no main effect of pill use,  $F(1, 121) = 1.39, p = .24$ , but a significant main effect of phase  $F(2, 121) = 5.97, p = .003$ . Women in the fertile phase recalled status products earlier compared to other phases. However, this main effect was driven by a significant interaction with pill use,  $F(2, 121) = 3.79, p = .03$  (cf. Fig. 2). For normally cycling women, recall position varied by cycle phase,  $F(2, 29) = 7.63, p = .002$ . They recalled status products significantly earlier in the fertile phase ( $M = .24, SD = .11$ ) than in both other phases (both  $ps<.02$ ). The position of status products recalled by participants in the menstrual ( $M = .14, SD = .10$ ) and luteal phase ( $M = .10, SD = .08$ ) did not differ

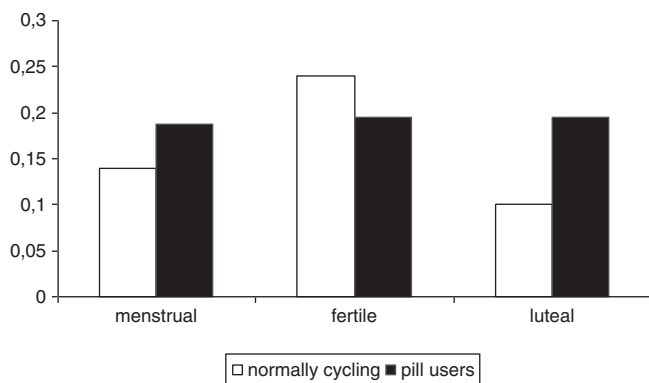


Fig. 2. Relative position of recalled status products.

significantly ( $p=.31$ ). Pill users listed status products in the same relative position throughout their cycle,  $F(2, 92) = .32, p = .72$ .

## Discussion

The current paper shows that ovulating women display an increased attention to status products. In a visual attention task, normally cycling women listed more status products and listed them earlier in the fertile phase than in other phases of their menstrual cycle. Women who used a hormonal contraceptive pill displayed no differences in attention to status products throughout their cycle. These findings suggest that biological processes, such as the flow of hormones, may affect attention. While we used indirect measures of attention (recall probability and recall position) future research may use eye-tracking methodology to measure visual attention directly.

While prior studies have suggested that women favor men with status (e.g., Kenrick et al., 1990), this may reflect *deliberate* preference construction. Our findings show that this preference may be more deeply rooted as women not only *spontaneously* pay attention to status products – even in the absence of (pictures of) men – but also that this attention may fluctuate depending on the activation of (mating) goals. Additionally, prior studies on menstrual cycle effects on product interest have approached this issue from the perspective of mate *attraction*. They documented, for instance, that ovulating women tend to dress more sexily (Durante et al., 2011). The current paper is the first to approach this issue from a mate *selection* perspective.

Fertile women's attention to status products is remarkable for several reasons. First, around ovulation women care more for a mate's genetic fitness than for his ability to provide long-term financial security (Gangestad, Garver-Apgar, Simpson, & Cousins, 2007; Haselton & Miller, 2006; for a review on short- vs. long-term mate preferences see Gangestad & Simpson, 2000). Hence, women's increased attention to status signals around ovulation may reflect an increased interest in genetic fitness rather than in financial resources. Recent findings indeed suggest that status product consumption may function as a short-term mating strategy, rather than as a long-term strategy aimed at signaling financial prosperity (Sundie et al., 2011). Our findings further validate this proposition. Future research may explicitly investigate the meaning of conspicuous consumption in a mating context or explore which specific characteristics of status products constitute their value as signal of mate quality.

Second, irrespective of what conspicuous consumption signals, it is nevertheless a very ambiguous signal for male reproductive qualities (Colarelli & Dettmann, 2003; Gallup & Frederick, 2010). The possibility to incur debt has given men without resources and good genes access to status products. In fact, nowadays, the super-rich may even prefer subtle signals of wealth to conspicuous signals (Berger & Ward, 2010). Still, women's spontaneous attention to status products may not only result from evolutionary selection processes at times when conspicuous consumption was a less ambiguous signal, but may also continue to serve some function. In particular, status products may help women to initially focus on a subset of potential mates. Possibly, women may engage in more deliberate processing to eliminate non-suitable mates from this subset. Future research might thus investigate the conditions under which men's conspicuous consumption stimulates actual approach behavior in women and how consumption signals of status are integrated with physical signs of status.

Finally, while striving for wealth is assumed to be shallow and even negative for one's well-being (e.g., Kasser & Ryan, 1993), our findings demonstrate that men's display of status products may have benefits in a mating context. Indeed, although drawing women's attention may not be the ultimate goal of men in a mating mindset, our findings confirm that men's efforts to seduce women using

conspicuous status symbols might not go unnoticed at times they really matter.

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