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Original Article

Men's perception of women's attractiveness is calibrated to relative mate value and dominance of the women's partner☆

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Abstract

We tested the hypothesis that men are particularly sensitive to individual differences in the attractiveness of women of the same mate value as themselves and less sensitive to variation among women of lower or higher mate value. We first assessed sensitivity to variation in women's attractiveness by asking men (n=148) to choose the more attractive of two photographs of the same target woman (n=116), photographed once at ovulation, when estrogen—a hormone that has been found to increase women's attractiveness—is known to be high, and once during a nonfertile phase of the cycle. Across all women, men did not rate the picture of the ovulating woman as more attractive (p>.10), but they did rate this picture as more attractive for women of similar mate value to themselves. When we increased the implicit costs of mate pursuit by presenting a photograph of a boyfriend before presenting the woman's photographs, men showed higher sensitivity to variation in the attractiveness of women of equal and lower mate value, and less sensitivity or preference for the nonovulating photograph for women of higher mate value. Furthermore, experimentally increasing men's self-perceived mate value by providing false "datability" feedback shifted their sensitivity to variation in the attractiveness of women of higher mate value than the men's baseline. The results suggest that men's mate searching is calibrated to the relative mate value of themselves and prospective mates and varies dynamically with the cost–benefit tradeoffs of pursuing such a relationship.

Keywords: Mate search; Fertility; Male choice; Ovulation; Mate value

1. Introduction

Women and men tend to choose partners of comparable mate value, but the mechanisms that result in this assortative mating are not fully understood (Buss & Barnes, 1986). Human courtship in particular can be a protracted process that is influenced by the physical, behavioral, and cognitive traits of the man and the woman, as well as by multiple players, including competitors (Geary, 2010). The implicit and explicit mechanisms that guide courtship must result in the dynamic weighting and calibration of these multiple traits and social influences such that one eventual result is assortative mating on mate value. Our focus is on men's initial winnowing of the pool of prospective mates to those of similar mate value and for whom the costs of expending mating effort are not prohibitive. We show that men's sensitivity to variation in the physical attractiveness of women, one easily assessable component of their mate value, is calibrated to the relative mate value of the man and the woman, and by the woman's relationship status. Results suggest that the early stages of the mate search appear be to guided by mechanisms that increase men's sensitivity to variation in attractiveness among women of similar mate value than of women of lower and higher mate value, and this sensitivity is dynamically changed by the costs associated with mate pursuit (e.g., presence of a boyfriend and the relative dominance of the boyfriend).

1.1. Calibrating the mate search process

The costs of an extended courtship and later investment in a long-term reproductive relationship create conditions that

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will favor the evolution of mechanisms that quickly and efficiently enable the winnowing of the pool of prospective mates (Gigerenzer et al., 1999); specifically, reducing the set of all members of the opposite sex to those for whom the combination of mate value and the probability of attracting the individual as a mate is highest, given some level of mating effort. Such calibrating mechanisms ensure a balancing of the cost–benefit tradeoffs associated with the search for a mate, resulting in reduced effort devoted to pursuing a mate who is not likely to be responsive or is of low relative quality. The result will be a subset of individuals that are of roughly the same mate value as oneself, that is, a subset for whom additional mating effort is best expended.

The initial winnowing is likely to be influenced by readily observed traits and not by traits (e.g., cooperativeness) that require extended time and effort to evaluate and are thus more costly, even if the latter may contribute more to the long-term stability of an eventual relationship. Physical attractiveness is one of these readily observed traits and contributes to the mate value of both sexes, but more so for women than for men (Li, Bailey, Kenrick, & Linsenmeier, 2002; Li, 2007; Todd, Penke, Fasolo, & Lenton, 2007). Efficient winnowing, however, requires an implicit or explicit comparison of one's mate value vis-à-vis that of potential mates such that men are predicted to focus their mating effort on women whose physical attractiveness is comparable to the man's overall evaluation of his own mate value. People likely develop a sense of their mate value through awareness of traits valued by the opposite sex, self-appraisal of one's standing on these traits vis-à-vis that of potential competitors, and one's experiences with the opposite sex (Ellis & Kelley, 1999; Li, 2007). In other words, one's self-perceived mate value (SPMV) may be an important component of the mechanisms that govern assortative mating.

1.2. Potentially calibrated traits

Relative mate value is an important potential cue to the costs and benefits of pursuing a potential mate. Compared to an individual who pursues a potential mate of similar or slightly higher mate value, those who pursue potential mates of much lower mate value will not receive the same evolutionary benefits (e.g., a healthy fertile partner) from a mateship, and those who pursue potential mates of much higher mate value will face increased risk of failing to form a relationship. If women's physical attractiveness influences men's initial winnowing of the pool of potential mates and if the underlying mechanisms implicitly result in a calibration between the man's relative mate value and the mate value indicated by the woman's attractiveness, then men should be more attentive to subtle variation in attractiveness among the set of women close to their mate value and less attentive to these individual differences among women of lower or higher mate value.

In addition to the relative attractiveness of a potential mate, relationship status and partner dominance are critical cues to the potential costs of mate pursuit. A man who pursues a potential mate who is already in a romantic relationship is more likely to fail, given the potential costs to the woman (e.g., losing investment from a romantic partner, retaliation from her current partner) and to the man (e.g., retaliation from the woman's romantic partner). Men are predicted to be more attentive to variation in attractiveness among women in romantic relationships when these women are of slightly lower mate value than themselves, under the assumption that these women are more likely to pay the cost of mate switching than are other women. Costs to the woman and to the pursuing man may be higher when the woman's partner is a dominant man, as retaliation from a dominant man is potentially more dangerous than that from a less dominant man. We therefore predicted that men would be less attentive to subtle variation in attractiveness among those women with physically dominant partners, assuming those with dominant partners are implicitly or explicitly eliminated as potential mates. Alternatively, to the extent that men attend to individual differences in the attractiveness of women with physically dominant partners, they may prefer the slightly less attractive of these women, as these women may require less investment to leave their current partner.

1.3. Current study

Do men differentially process the physical features of women as a function of the likely costs and benefits of pursuing them as mates? To investigate this question, we examined whether men's preference for photographs of women at the time of ovulation compared to the same women at a nonfertile phase of their cycle varied as a function of relative mate value and the costs of mate pursuit. At the time of ovulation, women experience increases in estrogen that result in subtle physical (e.g., soft tissue changes that increase facial attractiveness) and behavioral changes (e.g., shifts in choice of dress) that result in their being more attractive to men (Durante et al. in press; Durante, Li, & Haselton, 2008; Kirchengast & Gartner, 2002; Law Smith et al., 2006). We were not interested in sensitivity to ovulation per se, but rather used the cycle-related change in attractiveness as a means to assess men's sensitivity to subtle variation in attractiveness among women of similar mate value to themselves. In this view, individual differences in attractiveness among the sets of women of much lower or much higher mate value are less relevant to men's mate searching than are differences among women of roughly equal mate value. Of course, our manipulation includes a comparison of the same woman at different points in the ovulatory cycle, but, because brain mechanisms likely use estrogen level as an index of a woman's overall fertility (e.g., reproductive health; Roney, 2009), we assume that sensitivity to these subtle within-woman changes reflects a broader sensitivity to individual differences in women's attractiveness.

We experimentally tested our predictions by artificially increasing the men's SPMV through false feedback and predicted a corresponding shift to greater sensitivity to women of higher mate value than the men's baseline mate value; that is, women who are now, from the man's perspective, of the same relative mate value. If the mechanisms that enable this calibration are dynamically adjusted, then pairing women with boyfriends should shift men's sensitivity to women of lower mate value, under the assumption that women in this range are better targets for mate poaching than are other women. Moreover, the costs of mate poaching should vary with the relative dominance of the boyfriend and the rater; specifically, men are predicted to prefer the ovulating woman only when she is paired with a relatively less dominant partner.

2. Methods

2.1. Participants

A total of 153 male undergraduates participated in the study for course credit. Only data from the 148 men who reported themselves to be heterosexual and completed the entire experiment were used in the analyses.

2.2. Stimuli

The stimuli were pairs of photographs of 164 female undergraduates (mean age=18.97 years, S.D.=1.63) at the University of Texas at Austin (see Durante et al., 2008; Durante & Li, 2009). All women in the photographs were normally ovulating and not taking any form of hormonal contraception. One of the photographs was taken near the time of ovulation and the other at a time of low fertility. Ovulation was confirmed using over-the-counter urine applicator tests (Clearblue® Easy Ovulation Test Kit; Inverness Medical Innovations, Waltham, MA, USA) that accurately detect the surge in luteinizing hormone (LH) that occurs 24–36 h prior to ovulation. On average, high-fertility photographs were taken 0.39 (S.D.=1.44) days prior to ovulation. Low-fertility photographs were taken 6 days or more after the LH surge and at least 3 days prior to menstrual onset (mean=4.61, S.D.=3.22). Photographs were full-body digital images with participants instructed to stand with their hands at their sides. Participants were given no instruction regarding choice of dress during each testing session. Women without photographs from both sessions or with slightly distorted photographs were discarded, leaving 116 pairs.

2.3. Self-perceived mate value

The 10-item Self-Perceived Mating Success scale was used to assess the men's SPMV (Lalumière & Quinsey, 1996). The items assess the individuals' perception of the extent to which members of the opposite sex perceive them as desirable. The test is reliable (α=.87) and has been used in previous studies of mate value (e.g., Surbey & Brice, 2007).

2.4. Mate value manipulation

Participants completed a “Personal Characteristics Questionnaire” and were informed that they scored 92 out of a possible 100 on the “Hartford and Goldsmith Datability Scale,” a score “significantly higher than average.” Surbey and Brice (2007) found that this manipulation significantly increased SPMV, increased men's mate value more than women's, and resulted in an increase in men's focus on casual sex.

2.5. Male rival manipulation

Pictures of men varying in physical attractiveness were selected from a large photo database of college-aged individuals and randomly paired with target women in this manipulation.

2.6. Procedure and dependent variables

First, participants completed a computerized version of the Self-Perceived Mating Success scale. Pairs of target photographs of the same woman were then presented side by side in four sections on a 3-Ghz Intel compatible CPU computer with a 43-cm monitor, using Direct RT (Jarvis, 2008). The photographs were 15 by 22 cm and were presented at the center of the screen. Participants were instructed to choose the more attractive of the two photographs as quickly as possible. Once the participant made his choice, the photographs disappeared and the next pair was immediately presented. Reaction time (RT) was measured using Direct RT to the nearest millisecond. The choice of the more attractive picture was also recorded. For each participant, one fourth of the photographs were randomly assigned for inclusion in each section.

In Section 1, participants rated a fourth of the photograph pairs and were told that the women were single. Section 2 was the rival male manipulation, where participants were first presented with a randomly chosen photograph of a man described as the boyfriend of the woman in the following pair of photographs and asked to rate his dominance on a 1 to 7 scale as quickly as possible. Once the rating was complete, the man's photograph disappeared and the pair of target photographs was immediately presented.

Participants underwent the mate value manipulation after rating the second set of photos. After completing the computerized Personal Characteristics Questionnaire and receiving their false score from the “Hartford and Goldsmith Datability Scale,” they again completed the Self-Perceived Mating Success scale. Then, in Section 3, participants completed the target rating task, as with Section 1, and repeated the rival male manipulation in Section 4.

3. Results

3.1. Female attractiveness

Two independent judges rated the attractiveness of the women on 1 (*low*) to 9 (*high*) scale and showed acceptable agreement [ICC=0.64; 95% confidence interval=(0.54, 0.72)]. Female attractiveness was the mean of these ratings.

3.2. Manipulation check

Consistent with Surbey and Brice's (2007) findings, participants' SPMV scores increased after receiving false feedback about their "datability" [t(147)=2.95, p=.003]. This result confirms that our manipulation was successful.

3.3. Mate value difference

The difference between the standardized (mean=0, S.D. =1) attractiveness of the woman and the man's standardized baseline SPMV score is the mate value difference variable. A difference value of 0 indicates comparable mate values. A value of 1 indicates that the woman's rated physical attractiveness score is 1 S.D. higher than the man's SPMV score value, whereas a value of −1 indicates that the man's SPMV score is 1 S.D. higher than the target woman's physical attractiveness score.

If men are differentially sensitive to individual differences in the set of women of about the same mate value as themselves, as compared to women of much higher or much lower mate value, a curvilinear relation between the mate value difference scores and men's choice of the photo of the ovulating woman should emerge; men's preference for the photograph in which the woman is ovulating should be high for women of the same mate value and low for women of lower and higher mate value. We tested these predictions using separate multilevel regressions (with RT nested within participants) for each of the four rating sections, with mate value difference and its quadratic component predicting RT; mean RT=3.4 s, S.D.=3.0 s. To reduce collinearity in these regressions and those in the following sections, the quadratic component of the mate value difference variable is the square of the centered (mean=0, S.D.=1) variable. The corresponding functions, across each section's range of mate value difference scores, are shown in Fig. 1, and the multilevel regressions, in Table 1.

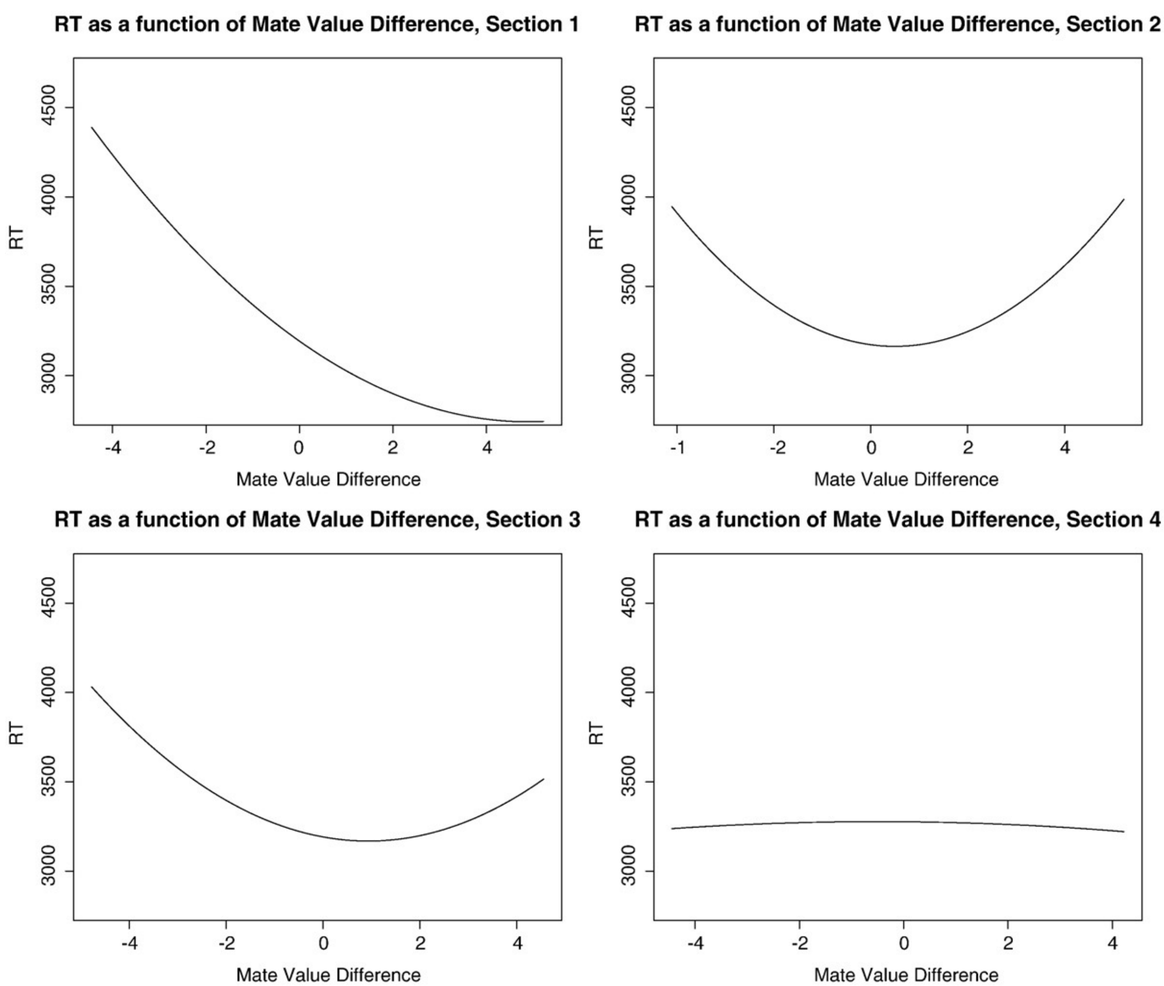

Fig. 1. Reaction time for ratings of women's attractiveness as a function of mate value difference.

Table 1
Regression equations of RT as a function of mate value difference by section (responses nested within participants)

Section	Coefficients	Estimate	S.E.	t value	p (>|t|)
Ratings without partner and before mate value manipulation					
1	Intercept	3193.05	103.04	30.99	<.001
	MV difference	−184.82	27.73	−6.66	<.001
	MV difference^2	18.94	12.03	1.57	.115
Ratings with partner and before mate value manipulation					
2	Intercept	3173.11	105.20	30.16	<.001
	MV difference	−36.83	28.99	−1.27	.204
	MV difference^2	36.86	12.41	2.97	.003
Ratings without partner and after mate value manipulation					
3	Intercept	3192.14	107.08	29.81	<.001
	MV difference	−49.36	31.44	−1.57	.116
	MV difference^2	26.45	13.85	1.91	.056
Ratings with partner and after mate value manipulation					
4	Intercept	3276.91	104.18	31.45	<.001
	MV difference	5.39	34.85	0.15	.877
	MV difference^2	−2.51	16.00	−0.16	.876

MV difference=standardized (mean=0, S.D.=1) mate value difference, with scores of 0 indicating the man's relative SPMV is the same as the woman's relative attractiveness. Values >1 indicate women whose relative attractiveness is higher than the man's mate value, whereas values <1 indicate women whose attractiveness is lower than the man's mate value. MV difference^2=the quadratic component.

Section 1 yielded a nonsignificant positive quadratic [$t(4058)=1.57$, $p=.12$] and a significant negative linear [$t(4058)=-6.66$, $p<.001$] component. The corresponding function minimum was at mate value difference=4.88, indicating that rating RTs were fastest for women nearly 5 S.D.'s higher in mate value than the man. Section 2 yielded a significant positive quadratic [$t(4058)=2.97$, $p<0.01$] and a nonsignificant negative linear [$t(4058)=-1.27$, $p=.20$] components. The minimum was at mate value difference=0.50. Section 3 yields a trend toward a significant positive quadratic [$t(4058)=1.91$, $p=.06$] and a nonsignificant negative linear [$t(4058)=-1.57$, $p=.12$] component. The function is similar to that in Section 2, with a minimum at mate value difference=0.93. Section 4 yielded nonsignificant negative quadratic and linear components [t's $(4058)=-0.16$, 0.15; p's$=0.88$, 0.88].

The gist is that men rated the photographs quickly, as instructed. With the exception of Section 4, men's RTs were as fast or faster for the photograph ratings in which significant preferences (next section) emerged as compared to other photographs: The preferences described in the next section cannot be attributed to the men spending more time examining some photographs than others.

3.4. Photograph preference

Participants chose the picture in which the woman was ovulating as more attractive in 64/116 (55%) of the photo pairs. This is not significantly higher than chance ($p=.11$), but this result does not address the hypothesis that the *difference* in mate value will affect sensitivity to variation in attractiveness. Multilevel logistic regressions in PROC NLMIXED in SAS (SAS Institute, 2004) were used to test this hypothesis; specifically, with mate value difference and its quadratic component predicting whether men's selection of the picture taken at high or low fertility differed from chance. These analyses were only performed within section, thereby treating each fourth of the experiment as a separate data set. This was because, due to the nature of the design, we could not vary the order of the sections; therefore, between-section effects were completely confounded by the effect of order.

Lowess functions (Cleveland, 1981) were plotted for each logistic regression (these plots do not represent the mixed models because responses are not nested within subjects, but they closely resemble the observed multilevel models), with mate value difference on the x-axis and the probability of photo choice on the y-axis; the proportion of observations used to calculate each smoothed value=2/3, with 3 robustifying iterations, and delta=0.01. Lowess functions allow for a more precise examination of curvilinear relationships than linear regression models with quadratic terms. As shown in Fig. 2, values above the 50% line (chance) represent more frequent choices of the picture of the ovulating woman and values below the line represent choices of picture in which the woman is not ovulating.

In addition to testing the linear and quadratic relationships between mate value difference and photograph preference, we assessed whether choices differed from chance at mate value differences of 0 and ±4 S.D.'s. These allow for significance tests at key points in the distributions. To achieve this, we reran all of these models with mate value difference recentered at −4 and at 4, retesting

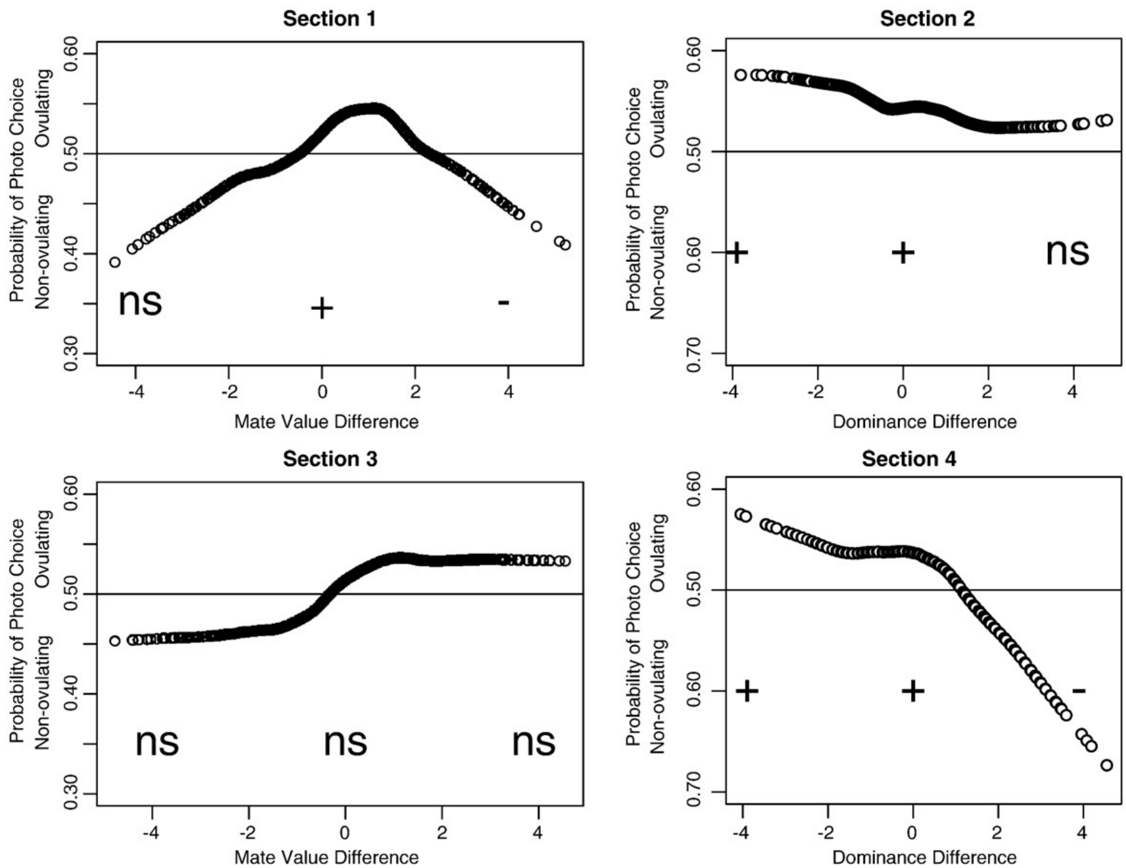

Fig. 2. Lowess functions of preference for photographs of ovulating or nonovulating women as a function of the mate value difference.

Table 2
Logistic regression equations of fertility detection as a function of mate value difference by section (responses nested within participants)

Section	Coefficients	Estimate	S.E.	t value	$p\ (>\lvert t\rvert)$
Ratings without partner and before mate value manipulation					
1	Intercept	0.096	0.038	2.52	.013
	MV difference	0.055	0.021	2.60	.010
	MV difference^2	−0.029	0.010	−2.78	.006
Ratings with partner and before mate value manipulation					
2	Intercept	0.168	0.038	4.42	<.001
	MV difference	−0.027	0.022	−1.22	.223
	MV difference^2	−0.001	0.011	−0.08	.939
Ratings without partner and after mate value manipulation					
3	Intercept	0.026	0.038	0.69	.491
	MV difference	0.072	0.022	3.19	.002
	MV difference^2	−0.005	0.011	−0.44	.658
Ratings with partner and after mate value manipulation					
4	Intercept	0.112	0.038	2.94	.004
	MV difference	−0.029	0.024	−1.22	.226
	MV difference^2	−0.024	0.013	−1.88	.063

MV difference=standardized (mean=0, S.D.=1) mate value difference, with scores of 0 indicating the man's relative SPMV is the same as the woman's relative attractiveness. Values >1 indicate women whose relative attractiveness is higher than the man's mate value, whereas values <1 indicate women whose attractiveness is lower than the man's mate value. MV difference^2=the quadratic component.

the intercept against chance, and thereby estimating whether participants' choices differed from chance at three different points on the mate value difference continuum. The results of these tests are represented as either "+" (i.e., participants preferred the photographs of the ovulating women at higher than chance levels), "–" (i.e., participants preferred the photographs of the nonovulating women at higher than chance levels), or "ns" (i.e., participants preferred the photographs of the ovulating and nonovulating women at chance levels).

As shown in Table 2, Section 1 yielded significant negative quadratic [$t(144)=-2.78$, $p<.01$) and positive linear [$t(144)=2.60$, $p=.01$] components, indicating that photograph choice varied in a significant curvilinear pattern. At mate value difference=−4, the Lowess curve suggests a preference for the pictures of nonovulating women, but the values in this range did not significantly differ from chance, possibly due to fewer observations than at difference=0 and 4. At mate value difference=0, participants preferred the photographs of ovulating women at greater than chance levels, whereas at mate value difference=4, participants preferred the photographs of nonovulating women at greater than chance levels. Fig. 2 (Section 1) shows a function maximum at mate value difference=0.94, that is, the probability of choosing the ovulation picture peaked for women with a mate value about 1 S.D. greater than the man's SPMV.

Section 2 yielded nonsignificant negative quadratic and linear components [t's$(144)=-0.08$, -1.22; p's$=0.94$, 0.22), but the function (Fig. 2, Section 2) suggests a trend for men to choose the picture of ovulating women whose mate value was below the men's SPMV. At mate value difference=−4, participants' choices did not differ from chance. At mate value difference=0, participants preferred the photographs of ovulating women, despite preferring them at a lower rate than at mate value difference=−4. This is probably because the estimates close to the score of 0 are based on more observations than those at −4. At mate value difference=4, participants' choices did not differ from chance.

Section 3 yielded a nonsignificant negative quadratic component [$t(144)=-0.44$, $p=.66$] and a significant positive linear component [$t(144)=3.19$, $p<.01$], meaning that men chose the photo of ovulating women for mate value differences at or greater than 0 (Section 3, Fig. 2). Although the overall trend is significant, none of the values at mate value differences of −4, 0, and 4 differed from chance.

Section 4 yielded a trend for a negative quadratic component [$t(144)=-1.88$, $p=.06$] and a nonsignificant negative linear component [$t(144)=-1.22$, $p=.23$], indicating a trend toward a curvilinear pattern similar to that in Section 1, but with a maximum value at mate value difference=−0.60. At mate value differences of −4 and 4, participants' choices did not differ from chance. At mate value difference=0, participants preferred the photographs of ovulating women.

3.5. Dominance

The dominance difference variable was the difference between the standardized dominance (mean=0, S.D.=1) score for the photo of the man paired with the rated woman and SPMV z score of the rater; baseline SPMV for Section 2 and SPMV assessed after the mate value manipulation for Section 4. High values indicate that the pictured male's dominance was higher than the rater's SPMV. Results are from a multilevel logistic regression, as before.

For Section 2 (Fig. 3), dominance difference yielded a nonsignificant trend toward a negative linear relationship [$t(144)=-1.37$, $p=.17$]. At dominance difference=−4 and at dominance difference=0, participants preferred the photographs of ovulating women, whereas at dominance difference=4, participants' choices did not differ from chance.

For Section 4, dominance difference yielded a significant negative linear effect [$t(144)=-3.49$, $p<.01$]. At dominance

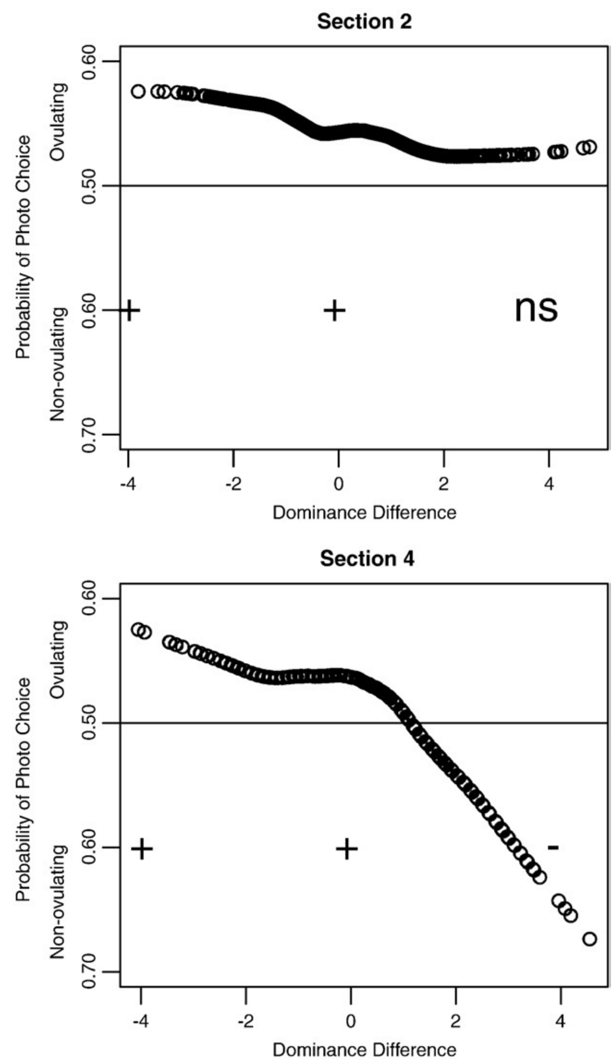

Fig. 3. Lowess functions of preference for photographs of ovulating or nonovulating women as a function of dominance difference.

difference=−4 and at dominance difference=0, men preferred the photographs of the ovulating women, whereas at dominance difference=4, they preferred the photographs of nonovulating women (Fig. 3, Section 4). In short, men preferred the photographs of ovulating women when the women were paired with relatively less dominant men and preferred the photographs of nonovulating women when the women were paired with relatively more dominant men.

4. Discussion

It is well documented that men find some women more attractive than others (e.g., Cunningham, 1986; Singh, 1993) and are more likely to pursue attractive women when dating (Todd et al., 2007). Our results add nuance to this phenomenon, suggesting that men are particularly sensitive to variation among women who are, more or less, equally attractive but only if these women are of the same or slightly higher mate value than the men: Men differentiate subtle differences among women in their “ballpark” but not among women below or above this range. Experimentally increasing men’s perceived mate value shifted this range to women of even higher mate value, and pairing women with a boyfriend shifted it in the other direction; specifically, to women of lower mate value than themselves. The latter effect was particularly pronounced if the rated dominance of the boyfriend was higher than men’s SPMV. The calibration of men’s SPMV and women’s relative attractiveness combined with the boyfriend effect suggests that the young men in this study at least implicitly processed the pictures of the young women as if they were potential mates and supports our hypothesis that the mechanisms that enable this calibration are features that guide the initial mate search process.

4.1. Attractiveness perception and mate value difference

The cost–benefit tradeoffs of searching for a mate create conditions for the evolution of perceptual and cognitive mechanisms that will allow people to winnow the pool of potential mates to those that are likely to be responsive, that is, those for whom the expenditure of mating effort will result in some probability of forming a romantic or sexual partnership. The costs include expending mating effort on a would-be partner who is not likely to be responsive or is of low relative quality. The changes in women’s attractiveness across the ovulatory cycle (Durante et al., 2008; Kirchengast & Gartner, 2002; Law Smith et al., 2006) provided a means to assess men’s sensitivity to very subtle differences in physical attractiveness—a proximal cue to the benefits of mate pursuit (i.e., mating with a fertile partner)—and to test our hypothesis that any such sensitivity is heightened for the pool of women who are about the same mate value as the men. Again, we were assuming that men’s differential sensitivity is not related to ovulation detection per se—this issue remains to be settled (Singh & Bronstad, 2001; Thornhill & Gangestad, 2008)—but rather reflects a more general evaluation of individual differences in the attractiveness of women in their “ballpark.” These women represent the pool from which men will make their initial mate search choices.

We found support for this prediction; however, men’s peak sensitivity to variation in attractiveness preference occurred for women of moderately higher mate value than we expected. One possibility is that the peak was shifted relative to our prediction because of men’s higher weighting of women’s physical attractiveness relative to other traits (e.g., income) when assessing overall mate value (Buss & Schmitt, 1993; Li et al., 2002). In other words, physical attractiveness is only one component of a woman’s mate value, but it is weighted such that men prefer women who are relatively more attractive than themselves, even if the overall mate value of the man and the woman is comparable. In any case, the increased preference was subtle but robust across manipulations of the man’s perceived mate value and with the single or paired status of the woman. Our finding that men preferred the photographs of nonovulating women—the relatively less attractive of the paired photographs—who were of much higher mate value than themselves may reflect a strategy to reduce the mate-value difference; that is, move these women closer to their “ballpark.” Another possibility is that the focus on the presumably less attractive photograph may reduce the desirability of the woman and thus reduce the likelihood of pursuing a high-cost relationship. Regardless, men preferred the more attractive (ovulating) of the pair of photographs for the set of women closest to their mate value in three of the four sections, but they did not differ from chance in seven of the eight statistical tests performed for women of significantly higher or lower mate value.

The finding that RTs were generally shorter in the range in which our significant effects emerged suggests that the results are not due to the men taking more time to compare the corresponding photographs; the sensitivity emerged with a total processing time of about 3 s for both photographs. In other words, sensitivity to subtle variation in attractiveness does not appear to engage explicit, conscious processing.

4.2. Partner dominance

We predicted that presenting a photo of a boyfriend just before the men made their attractiveness choices would implicitly increase the costs of mate pursuit. In this situation, the pairing would shift the cost–benefit tradeoffs and we expected a corresponding shift such that men would show enhanced sensitivity to variation in attractiveness among women who were of lower relative mate value. We found evidence for such a tradeoff, but this varied with the dominance of the boyfriend relative to rater. Men preferred photographs of nonovulating and presumably less attractive women who were partnered with relatively dominant men (even far below chance in Section 4), and preferred the photographs of ovulating and presumably more attractive women partnered with relatively less dominant men. For women paired with dominant men, the preference for the presumably less attractive photographs may, as noted above, have been a strategy to reduce the mate value difference, or a strategy to focus on the less attractive option and thus reduce the desire to pursue a potentially high-cost relationship. In contrast, the costs to women and to the would-be poacher are lower for women partnered with low-dominant men (Schmitt & Buss, 2001), whether the women are considering mate switching or a short-term extrapair relationship (Gangestad & Simpson, 2000).

4.3. Limitations

There are several factors that limited the power and generalizability of our analyses. The raters showed only moderate agreement in their ratings of the attractiveness of the 116 target women, which likely increased the error of the regression estimates and thereby decreased the power of our analyses. High and low values of mate value difference came disproportionately from low and high mate value raters, respectively. The high correlation between SPMV and mate value difference makes it difficult to examine the effects of these variables simultaneously, but the lack of any consistent linear differences across levels of mate value difference is inconsistent with the possibility that between-rater differences are fully responsible for the reported effects of mate value difference. The participants and targets were sampled from a restricted range of potential mate values, given that they were all university students. The restricted range of mate values and forced-choice nature of photograph selection may have reduced the sensitivity of our study. Also, how well the mean attractiveness for the targets calibrates with the mean SPMV of the raters is not known. However, even if these measures are not perfectly calibrated in terms of the mate value of the woman and the man, our major findings would remain unchanged.

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