

The Role of Accurate Self-Assessments in Optimising Mate Choice

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Abstract

Individuals are thought to seek the best possible romantic partner in exchange for their own desirability. We investigated whether individuals' self-evaluations were related to their partner choices and whether the accuracy of these self-evaluations was associated with mating outcomes. Participants (N=1354) took part in a speed-dating study where they rated themselves and others on mate value and indicated their willingness to date each potential partner. Individuals were somewhat accurate in their self-evaluations, and these self-evaluations were associated with individuals' revealed minimum and maximum standards for a potential partner, but not the number of partners they were interested in. Participants who overestimated their mate value were accepted by an equivalent number of partners compared to under-estimators, but the over-estimators were choosier and thus ended up with fewer (but similarly attractive) reciprocal matches. Results support social exchange theory and the matching hypothesis, and contrast findings that self-enhancement facilitates positive social outcomes.

Key words: Mate choice, attraction, dating, self-perception, social exchange theory

The Role of Accurate Self-Assessments in Optimising Mate Choice

Choosing a romantic partner can be one of the most critical decisions a person makes in their lifetime, in both an evolutionary and modern context. Mate choice can directly affect reproductive success and offspring fitness, and the quality of mating relationships has been strongly associated with mental and physical health (Robles, Slatcher, Trombello, & McGinn, 2014). Given its importance, it is expected that humans use strategies to optimise mate choice and resulting outcomes. In the current study, we investigated whether individuals' self-evaluations were related to their partner choices, and whether the accuracy of these self-evaluations was associated with mating outcomes.

Partner standards and choosiness

Social exchange theory applies economic principles to interpersonal behaviour, and suggests that individuals act to seek relationships that offer optimal rewards (Kelley & Thibaut, 1978; Thibaut & Kelley, 1959). According to this theory, each individual attempts to attract the most valuable mate in exchange for their own desirability, resulting in a mating market (Cameron, Oskamp, & Sparks, 1977). Whether due to an evolutionarily adapted mating psychology or simple rationality, we would expect individuals to accurately consider their own mate value and adjust their choices accordingly to increase their chances of finding an optimal partner (Fisher, Cox, Bennett, & Gavric, 2008; Regan, 1998).

According to social exchange theory, highly desirable individuals should expect to pair with potential romantic partners of similarly high mate value, and should therefore demonstrate higher mate value standards (Kelley & Thibaut, 1978; Kurzban & Weeden, 2005). There is existing evidence consistent with this prediction, though with some caveats. In one study, participants reported their minimum and ideal standards on 22 desirable traits of a potential partner, and those with a higher self-reported mate value had higher standards (Edlund & Sagarin, 2010). However, this study only tested hypothetical standards. Given the

disconnect between stated preferences and those revealed through behaviour (Eastwick, Luchies, Finkel, & Hunt, 2014), evidence regarding hypothetical standards should be regarded as tentative.

In the current study, we use standards to refer to the mate value an individual is willing to accept in a potential partner, indicated by willingness to date actual potential mates. One previous study which examined revealed partner preferences showed that participants with higher self-perceived mate value reported more interest in dating profiles of physically attractive targets, perhaps (but not necessarily) indicating higher general standards (Ha, Overbeek, & Engels, 2010). The only study to test directly whether self-perceived mate value is linked to higher revealed partner standards found equivocal results. Todd, Penke, Fasolo, and Lenton (2007) found that speed-daters' self-reported overall mate value did not predict the mate value of their partner choices, but for women, self-reported physical attractiveness did predict selection of men with higher mate value. The study involved only 46 participants, giving poor statistical power to detect realistic effect sizes. In all, the existing evidence is suggestive but inconclusive of an effect of self-perceived mate value on partner standards. That is, it is unclear whether the mate value that an individual would accept in a partner is related to that individual's self-evaluations.

To the extent that individuals use their self-evaluations to adjust their mate value standards, those with high self-evaluations should perceive fewer people to meet these standards. The term choosiness in this context refers to how many potential partners an individual would be willing to accept (not necessarily simultaneously). People who are more choosy are more selective and are interested in fewer potential partners than those who are less choosy. Kurzban and Weeden (2005) found that speed-dating participants who were found more desirable by others were more choosy, saying yes to dating fewer people. Back, Penke, Schmukle, Sachse, et al. (2011) found that this relationship was the same for self-

perceived mate value. In their speed-dating study, those who had higher self-perceived mate values were choosier. In contrast, a similar speed-dating study (Todd et al., 2007) found that women's choosiness was unrelated to their self-perceived mate value. Women in this study tended to accept partners whose mate value matched their own self-perceived physical attractiveness. This meant that even women with low self-evaluations were choosy, but by the exclusion of men above their standard. Although social exchange theory would assert that those with higher quality standards should be more selective overall, it could also be true that all individuals learn their mate value and develop preferences for others of their own standard. This possibility would be somewhat consistent with the matching hypothesis: a theory suggesting that partner preferences vary as a function of one's own attractiveness, meaning less attractive people should prefer similarly unattractive people (Van Straaten, Engels, Finkenauer, & Holland, 2009).

If individuals apply mate choice strategies based on their self-evaluations, as social exchange theory and previous findings suggest, a key question is whether these processes optimise successful matches. Kurzban and Weeden (2005) found that men with higher standards tended to match with women who were thinner, had more attractive bodies, and were younger. Similarly, women with higher standards mostly matched with males who were taller, had more attractive bodies and faces, and were younger. Hence, participants with higher standards matched with partners with greater levels of evolutionarily desirable traits.

According to parental investment theory, the sex that invests more resources in raising offspring will be more selective when it comes to mate choice (Trivers, 1972). It is then left to the less-investing sex to compete in intra-sexual competition for mate access. In humans, this translates to "women are the choosers, men are the provers", although this phenomenon is weaker in humans compared to other animals due to mutual mate choice (Stewart-Williams & Thomas, 2013). Parental investment theory predicts that females will have higher standards

and be choosier when selecting a partner, whereas males will have lower standards and be less choosy. In an online survey, Schwarz and Hassebrauck (2012) found that most mate selection preferences were rated as more important by females than males.

Accuracy and self-enhancement

While higher self-evaluations seem to be associated with higher standards, higher choosiness, and higher quality matches, it could be assumed that using self-perceptions to guide mating decisions would only be useful to the degree that they are accurate. Back, Penke, Schmukle, and Asendorpf (2011) found that individuals' self-perceived mate value was only weakly correlated with others' evaluations, meaning self-evaluations are imprecise.

Errors in self-evaluation could be costly. Hypothetically, overestimation of one's own mate value could lead to wasted resources (time and energy spent on uninterested potential partners) and continual rejection, while underestimation could result in pairing with a suboptimal partner. An alternative possibility is that over-estimation of one's mate value might be beneficial for mating outcomes, as some research suggests that self-enhancement may facilitate more positive social impressions (Dufner, Gebauer, Sedikides, & Denissen, 2019; von Hippel & Trivers, 2011). In this way, self-enhancement may not necessarily result in a waste of resources if the self-enhancement itself leads to a higher chance of mating success. In a speed-dating study, people were more interested in self-enhancers as short-term partners, but not as long-term partners (Schröder-Abé, Rentzsch, Asendorpf, & Penke, 2016). The same study found that self-enhancers were less choosy for short-term partners (especially for male participants), but choosier for long-term partners.

The present research

Here, we investigate these issues using a large speed-dating sample (N=1,354 participants). Given the strong statistical power provided by 2,317 speed-date interactions, we

are able to clarify inconclusive results from previous studies, as well as pose new questions. In particular, we test whether self-perceived mate value predicts revealed mate value standards (the minimum and maximum mate value a participant accepts), and choosiness (the number of partners a participant is interested in). We also assess participants' self-evaluation accuracy, and whether self-enhancement relates to the number of yeses an individual receives, the number of reciprocal matches individuals achieve, and the quality of these matches. Answering these questions will clarify how individuals use perception of their own mate value to guide their mate choices.

Method

All materials, data, and code can be found at https://osf.io/pc69n/?view_only=1ab2277e7a114f29938eeaf858294ff1. We report all manipulations, measures, and exclusions in this study. No analyses in this manuscript were preregistered. All analyses were conducted in R.

Data for this study was collected from 2010 to 2019 as part of a long-term project, resulting in a sample size of 1,354 participants with data relevant to this study. Nonetheless, a power analysis was conducted using G*Power. In a recent meta-analysis, the estimated effect size for self-enhancement effects on interpersonal perceptions at zero acquaintance was $r=.11$ (Dufner et al., 2019). For a multiple regression analysis with an alpha of .05 and a sample of $N=1,354$, we would achieve 96% power to detect an estimated effect size of $r=.11$.

Participants

Participants were 1,354 first-year psychology students from The University of Queensland (52% female; mean age = 19.5 years, $SD = 2.8$ years). Recruitment was through the university's research participant scheme as part of a larger study between 2010 and 2019.

Students were offered course credit for their participation in the study, advertised as ‘Speed-Meeting Study’. Inclusion criteria required participants to be heterosexual and native English speakers. Four cases with out of range values were excluded.

Given the nature of some variables in this study, the sample size differed for each analysis. For instance, the ‘match quality’ variable represents the average mate value of a participant’s matched partners; this requires participants to acquire at least one match to attain a value for the variable. The ‘minimum/maximum/mean standard’ variables represent mate values of a participant’s accepted partners; this requires participants to accept at least one potential partner to attain a value for the variable. Consequently, participants with no matches or accepted partners were treated as missing data for those variables. Missing data was removed pairwise to retain maximum power for each analysis. Imputation methods for missing data would not be feasible given the nature of the derived variables.

Measures

Self-ratings

Three items of self-rated attractiveness were averaged to create a composite measure of overall self-perceived mate value. Participants responded to the items: “How would you rate your own facial attractiveness?”, “How would you rate your own bodily attractiveness?”, and “How would you rate the attractiveness of your personality?”. All responses were recorded on a 7-point scale, where 1 = well below average and 7 = well above average.

Partner ratings

Participants evaluated each partner they interacted with on various features. Three items of attractiveness were averaged to create a composite measure of overall mate value. Participants responded to the following items regarding each partner: “I would rate the attractiveness of their face as...”, “I would rate the attractiveness of their body as...”, and “I

would rate the attractiveness of their personality as...”. All responses were recorded on a 7-point scale, where 1 = well below average and 7 = well above average.

Originally, self and partner ratings were each assessed with a single item rating of overall attractiveness (original results available in Supplementary Material), but we were encouraged to use a composite measure during the review process. Results are broadly concordant regardless of using single item ratings, the composite measures described above, or composite measures including face, body, personality, and overall attractiveness ratings. Reliabilities for the multi-item measures of mate value are available in Table 3.

Calculated variables

Calculated variables are outlined in Table 1. For minimum, maximum, and mean standards, we used the focal participant’s rating of the accepted partner, rather than how other participants rated that partner, because it is the person’s own evaluation of the partner that they use to implement partner choice strategies. For match quality we used the average of the non-focal participants’ ratings of the matched partner (how other participants rated that partner), because what is of interest here is the more objective measure of matching outcomes that would be relevant to evolutionary processes, regardless of how desirable the participant considered the matched partner.

Procedure

Each speed-dating session had approximately four males and four females; numbers varied due to non-attendance of some participants. Speed-dates were conducted in mixed-sex pairs only. The room was set up with four speed-date stations, spread 1.7m apart to minimise distraction by surrounding speed-dates.

Pre-date

Males and females were taken to separate rooms and given an information sheet including information about confidentiality and voluntary participation. Participants then completed the pre-questionnaire on iPads, which included the demographic and self-rating measures. Once completed, participants were taken to the main room and seated across from their first speed-date partner.

Interaction

Participants were instructed to talk about any topic for three minutes until the bell sounded. After the bell, participants were asked to complete the partner survey while holding up their iPads to ensure the other person would not see their responses. Experimenters supervised the room until it was evident everyone had finished. Participants of one sex would then rotate to the next station, and this process was repeated until all mixed-sex pairs had interacted. The sex of the rotating participants was counterbalanced across sessions. If there was an uneven sex ratio of participants, the extra participant waited quietly until the next speed-date.

Post-date

After the final speed-date, participants completed the post-questionnaire, which contained items not relevant to this study. They were then given a debrief sheet and thanked for their participation.

Table 1*Descriptions of created variables and their calculations*

Variable	Description	Calculation
Accuracy	How close an individual's perception of their own mate value is to mate value ratings received from others	The absolute difference between an individual's self-ratings and others' given ratings of mate value (values closer to zero represent greater accuracy)
Directional accuracy	An individual's over/underestimation of their mate value compared to mate value ratings from others	The directional difference between an individual's self-rating and others' given ratings of mate value (values closer to zero represent greater accuracy, positive values represent overestimation)
Self-enhancement	A measure of directional accuracy correcting for actor effects of both the participant and partner	The directional difference between an individual's self-rating (corrected for participant actor effects) and other's given ratings (corrected for the partner's actor effects) of mate value (values closer to zero represent greater accuracy)
Choosiness	Tendency to say no to dating potential partners	Proportion of "no" responses out of total opportunities (greater values indicate greater choosiness)
Minimum standard	Lowest mate value of any target the participant said yes to	The lowest mate value rating (using the focal participant's rating) of all partners the participant said yes to

Maximum standard	Highest mate value of any target the participant said yes to	The highest mate value rating (using the focal participant's rating) of all partners the participant said yes to
Mean standard	Mean mate value of any target the participant said yes to	The mean mate value rating (using the focal participant's rating) of all partners the participant said yes to
Potential match quantity	The number of partners who said yes to a potential date with the participant (i.e. number of partners who the participant could have matched with)	The number of individuals who said yes to the participant as a proportion of the number of individuals the participant met
Match quantity	The number of matches for an individual (i.e. both partners said yes to a potential date)	The number of individuals the focal participant matched with as a proportion of the number of individuals they met
Match quality	The average quality of individuals the participant matched with (i.e. both partners said yes)	Average rated mate value of targets (omitting the focal participant's rating) with whom the participant matched

Social Relations Analysis Plan

When assessing accuracy and self-enhancement, we implemented social relations analysis to reduce the effect of participants' individual rater biases. The speed-dating methods used in this study established a full-block design. In each speed-dating session, all males rated all females, all females rated all males, and no participants rated any same-sex partners. According to the Social Relations Model, each individual mate value rating can be broken down into three components: the actor effect of the participant (how desirable the participant tends to find partners), the partner effect of the partner (how desirable the partner tends to be rated by others), and the relationship effect of the participant and partner (the degree to which the participant finds this partner desirable, more or less than expected by the relevant actor and partner effects). First, we calculated all participant and partners' actor effects based on equations given by Kenny, Kashy, and Cook (2006). We treated our data as a round-robin design with missing data, as suggested by Kenny (2007). Example calculations for a single speed-dating session can be found in the Supplementary Materials. We then used the resulting actor effects to correct participants' self-assessments, and the partners' assessments of each participant. The equations below are based on equations described by Humberg et al. (2018) and Kwan, John, Kenny, Bond, and Robins (2004):

$$\text{Corrected self-perceived mate value} = \text{participant self-perceived mate value} - \text{participant actor effect}$$

$$\text{Corrected received mate value} = \text{participant received mate value} - \text{relevant partner actor effect}$$

To assess participants' overall accuracy in mate value self-evaluations, we ran a regression with corrected self-perceived mate value as a predictor of corrected received mate value, controlling for sex and including a sex interaction term. To test self-enhancement effects, we used condition-based regression analysis (Humberg et al., 2018). This method tests whether degrees of self-enhancement (or self-devaluation) are related to an outcome,

disentangled from the effects of positivity of self-view. Condition-based regression uses a linear regression model in which an outcome variable is regressed on their self-evaluation and a reality criterion:

$$\text{outcome} = c_0 + c_1 \times \text{self-evaluation} + c_2 \times \text{reality criterion} + \varepsilon$$

Humberg et al. (2018) offer the following set of conditions for self-enhancement effects:

positive self-enhancement effect: $abs = |c_1 - c_2| - |c_1 + c_2| > 0$ and $(c_1 - c_2) > 0$

negative self-enhancement effect: $abs = |c_1 - c_2| - |c_1 + c_2| > 0$ and $(c_1 - c_2) < 0$

To conclude either a positive or negative relationship between the outcome variable and self-enhancement, the first statement must be significant, and the second statement must hold numerically. Humberg et al. (2018) provide detailed explanation of this method along with R code which uses one-tailed significance testing for statement one, $abs > 0$, and evaluates the direction of a self-enhancement effect per the second statement.

Results

Standards and choosiness

Zero-order correlations between all variables of interest are available in Table 2. Descriptive statistics are provided in Table 3. Males tended to give higher ratings to themselves and their partners compared to females and were also more likely to over- rather than underestimate their own mate value. Females were more likely to underestimate their own mate value and tended to be choosier than males.

Zero-order Correlations

Table 2

Zero-order correlations between all variables used in regression models

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Self-perceived mate value	-										
2. Received mate value	.15***	-									
3. Corrected self-perceived mate value	.76***	.29***	-								
4. Corrected received mate value	.18***	.87***	.14***	-							
5. Minimum standard	.15***	.06	-.13***	.19***	-						
6. Maximum standard	.15***	-.02	-.27***	.18***	.59***	-					
7. Mean standard	.17***	.02	-.23***	.20***	.90***	.88***	-				
8. Choosiness	-.02	.09**	.29***	-.06*	.28***	-.26***	.02	-			
9. Match quantity	.08**	.35***	-.05*	.40***	-.11***	.10**	-.01	-.56***	-		
10. Potential match quantity	.10***	.68***	.17***	.61***	.05	.03	.05	.05*	.56***	-	
11. Match quality	.13**	.10**	.17***	.34***	.33***	.22***	.31***	.13***	-.00	.08*	-

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 3*Means, standard deviations, and ranges of all variables*

Variable	Mean (SD)			Min	Max	α
	Males	Females	Total			
Self-perceived mate value (1-7)	4.73(0.74)**	4.60(0.77)	4.66(0.76)	1.00	6.67	.68
Received mate value (1-7)	4.51(0.78)***	4.75(0.72)	4.63(0.76)	2.00	6.67	.80
Directional accuracy (-6 to +6)	0.22(0.94)***	-0.15(1.00)	0.03(0.99)	-4.11	3.33	-
Accuracy (0-6)	0.76(0.60)	0.79(0.63)	0.78(0.61)	0.00	4.11	-
Self-enhancement	0.00(1.10)	0.06(1.13)	0.03(1.11)	-4.11	3.87	-
Choosiness (0-1)	0.49(0.34)***	0.58(0.33)	0.53(0.34)	0.00	1.00	-
Minimum standard (1-7)	5.04(0.67)*	4.95(0.74)	5.00(0.71)	2.00	7.00	-
Maximum standard (1-7)	5.59(0.65)***	5.43(0.71)	5.52(0.68)	2.00	7.33	-
Mean standard (1-7)	5.31(0.58)**	5.19(0.65)	5.25(0.62)	2.00	7.00	-
Match quantity (proportion; 0-1)	0.22(0.26)	0.23(0.27)	0.23(0.26)	0.00	1.00	-
Match quality (1-7)	4.90(0.69)*	4.77(0.74)	4.83(0.72)	2.33	6.67	-

Note. For directional accuracy, positive values indicate overestimation and negative values indicate underestimation. Descriptives were calculated using each participant's condensed scores (averaged across dates). * $p < .05$ ** $p < .01$ *** $p < .001$ for t-tests comparing male and female means. α = Cronbach's alpha.

Participants' self-perceived mate value was significantly associated with their mate value standards for potential partners (see Table 4). Self-perceived mate value predicted minimum, mean, and maximum mate value standards. That is, the greater participants perceived their own mate value, the higher their mate value rating of the least desirable partner they accepted and the more willing they were to aim for dates higher in mate value. However, there was no significant effect of self-perceived mate value on choosiness. That is, participants were interested in a similar number of partners regardless of their own self-perceived mate value. There were significant interactions between self-perceived mate value and sex for the minimum and mean standard analyses, indicating that the effects of self-perceived mate value on standards were different for males and females. The same analyses broken down by sex (see Supplementary Materials) demonstrates that these effects may be

stronger for females, which would be consistent with the paternal investment theory prediction that females must be more thoughtful about mate choice than males (Trivers, 1972).

Table 4

How do people use their self-assessments to choose partners?

Outcome	Predictor	β[CI]	<i>p</i>	Model
Minimum standard	Self-perceived mate value	0.15[0.09-0.21]	<.001	$F(3, 1054)= 10.73$
	Sex	-0.05[-0.11-0.01]	.077	$R^2 = .030, p<.001$
	Interaction	0.07[0.01-0.13]	.024	N = 1058
Mean standard	Self-perceived mate value	0.17[0.10-0.23]	<.001	$F(3, 1054)= 14.33$
	Sex	-0.09[-0.15- -0.03]	.004	$R^2 = .039, p<.001$
	Interaction	0.07[0.01-0.13]	.022	N = 1058
Maximum standard	Self-perceived mate value	0.15[0.09-0.21]	<.001	$F(3, 1054)= 13.79$
	Sex	-0.11[-0.17- -0.05]	<.001	$R^2 = .038, p<.001$
	Interaction	0.05[-0.01-0.11]	.124	N = 1058
Choosiness	Self-perceived mate value	-0.01[-0.06-0.04]	.712	$F(3, 1338)= 8.83$
	Sex	0.13[0.08-0.19]	<.001	$R^2 = .019, p<.001$
	Interaction	-0.04[-0.09-0.02]	.180	N = 1342

Note. Sex is coded as 0 for males and 1 for females. Therefore, a positive beta for sex indicates that females score higher on the outcome variable than males, and a negative beta for sex indicates that males score higher than females on the outcome variable.

We assessed whether these results could be confounded by a relationship between self-perceived mate value and ratings of others, but there was no significant correlation between these two variables ($r=.05, p=.051$). Nonetheless, comparable models using other participants' ratings to calculate standards are presented in the Supplementary Materials, along with the analyses broken down by sex.

Accuracy

Participants were somewhat accurate in their self-evaluations, as self-perceived mate value was positively associated with mate value received from partners (see Table 5). The interaction term was a significant predictor, implying a significant sex difference in the

accuracy of self-evaluations. The same analyses broken down by sex (available in the Supplementary Materials) demonstrates that males may have more accurate self-evaluations than females.

Table 5*Accuracy*

Outcome	Predictor	β [CI]	<i>p</i>	Model
Corrected received mate value	Corrected self-perceived mate value	0.13[0.08-0.19]	<.001	$F(3, 1336) = 10.31$
	Sex	0.02[-0.04-0.07]	.536	$R^2 = .023, p < .001$
	Interaction	-0.06[-0.11- -0.01]	.028	$N = 1340$

Self-enhancement and matching outcomes

Table 6 shows the condition-based regression results. There was no self-enhancement effect for potential match quantity, as the first condition for a self-enhancement effect was not satisfied ($abs = -0.06[-0.08- -0.04]$, $p = .999$). There was also no self-enhancement effect for match quality ($abs = -0.20[-0.32- -0.08]$, $p = .999$). There was a negative self-enhancement effect for match quantity ($abs = 0.06[0.04-0.08]$, $p < .001$), indicating that under-estimators achieved more reciprocal matches than over-estimators. Additionally, there was a positive self-enhancement effect for choosiness ($abs = 0.10[0.04-0.16]$, $p < .001$), indicating that over-estimators were choosier than under-estimators. These analyses were also run separated by sex; results were comparable (available in Supplementary Materials).

Table 6*Condition-based Regression Analysis for Effects of Self-Enhancements on Mating Outcomes*

Outcome	Predictor	Coefficient [CI]	<i>p</i>
Potential match quantity	Corrected self-perceived mate value (c_1)	0.03[0.02-0.04]	<.001
	Corrected received mate value (c_2)	0.30[0.27-0.32]	<.001
Match quantity	Corrected self-perceived mate value (c_1)	-0.03[-0.04- -0.02]	<.001
	Corrected received mate value (c_2)	0.16[0.14-0.18]	<.001
Match quality	Corrected self-perceived mate value (c_1)	0.10[0.04-0.15]	<.001
	Corrected received mate value (c_2)	0.38[0.30-0.47]	<.001

Choosiness	Corrected self-perceived mate value (c_1)	0.10[0.09-0.12]	<.001
	Corrected received mate value (c_2)	-0.05[-0.08- -0.03]	<.001

Note. A positive self-enhancement effect is present when ($c_1 - c_2$) is positive (i.e. choosiness), because when received mate value is held constant, higher self-perceived mate value (and therefore higher self-enhancement) is related to higher outcome values. A negative self-enhancement effect is present when ($c_1 - c_2$) is negative (i.e. match quantity), because when received mate value is held constant, lower self-perceived mate value (and therefore lower self-enhancement) is related to higher outcome values.

Discussion

Social exchange theory provides a model of mate choice in which individuals seek relationships that offer optimal rewards, meaning every person aims to attract the most valuable partner possible given their own mate value (Kelley & Thibaut, 1978; Thibaut & Kelley, 1959). Past research has predominately supported this model, as individuals tended to use their self-perceived mate value to guide their mating strategies (Edlund & Sagarin, 2010; Ha et al., 2010; Kurzban & Weeden, 2005). We aimed to clarify the role of self-evaluations in mating strategies and investigate how mating outcomes are influenced by the accuracy of these self-evaluations.

Standards and Choosiness

Overall, we found that females were choosier than males, as predicted by parental investment theory. While descriptive statistics suggested that males have higher minimum standards than females, this is not necessarily indicative of a true sex difference, because females also tended to receive higher mate value ratings than males. With regards to social exchange theory, we found that the minimum standard of partner that participants would date was positively predicted by participants' self-perceived mate value. This was expected based on theory and previous research. Presumably, participants with higher mate values can afford to set their minimum standard higher, because they are more likely to be successful. Participants' mean and maximum standards were also positively predicted by their self-perceived mate value. Participants tended not to indicate interest in partners who were too far

above their own self-perceived mate value. Findings so far suggest that participants were interested in a specific range of partners determined by their own self-evaluations, rather than setting a minimum standard and being interested in anyone above that standard. In further support of this possibility, there was no relationship between participants' self-evaluations and the number of partners they were interested in.

It is worth noting that the R^2 for these analyses are low, explaining only 3-4% of variance in partner standards. This could be due to our small speed-dating groups (with participants each meeting 4 others on average), as other studies with larger groups find larger effect sizes. For example, Back, Penke, Schmukle, Sachse, et al. (2011) find that self-perceived mate value explained 6% of variance in choosiness ($r = .25$). Their speed-dating sessions included an average 23 participants in each speed-dating session. Todd et al. (2007) found that for women, self-perceived physical attractiveness explained 24-30% of the variance in various traits of chosen partners, including wealth and status, family commitment, and physical appearance. They also found that for women, self-perceived family commitment explained 24% of variance in the physical appearance of chosen partners. This study also had a large speed-dating group (total $N=47$), but there was only one speed-dating session and as such a relatively small sample size. For the current study, using larger group sizes could have allowed for more precise estimates of choosiness and partner standards, because each participant would be more likely to encounter and provide responses for partners of all mate value levels.

Our findings suggest that individuals may use their self-evaluations to set mate value standards for potential partners, including maximum standards for partners who disproportionately exceed their own mate value. This phenomenon resulted in individuals accepting a similar number of partners regardless of self-perceived mate value. The finding that participants tended to be interested in partners around their own self-perceived mate

value is consistent with the matching hypothesis, which posits that partner preferences vary as a function of one's own mate value, meaning less attractive people should prefer similarly unattractive people (Van Straaten et al., 2009). However, there is a question of whether this preference is genuine, since there is evidence that attractiveness is universally perceived regardless of one's own desirability (Lee, Loewenstein, Ariely, Hong, & Young, 2008). An alternative explanation is that those who see themselves as less attractive might be willing to reject more attractive partners as a self-protective strategy. Penke, Todd, Lenton, and Fasolo (2007) suggest that humans have two preferences in a partner: someone in good overall condition (as cued by physical attractiveness), and someone they can securely attach. Potentially, those lower in self-perceived mate value believe that partners higher in mate value would be unreliable in terms of attachment, as the partner could potentially 'do better' and leave the relationship.

Accuracy

Self-perceived mate value was associated, albeit weakly, with other-rated mate value, consistent with previous findings (Back, Penke, Schmukle, Sachse, et al., 2011). This result is also consistent with social exchange theory (Kelley & Thibaut, 1978), which implies that individuals need some amount of accurate insight to appropriately implement mating strategies and find the best possible partner in exchange for their own desirability. Without this finding, any speculations about self-evaluations and mate choice strategy would have been irrelevant, given that such strategies would be based on a seemingly random variable. It is worth noting that the R^2 for this analysis is low, indicating that although participants' accuracy was significantly better than chance, it was poor in absolute terms. Participants' self-perceived mate value explained only 2% of variance in received mate value ratings. This is consistent with previous literature which found that expected mate value explained only 1% of objective mate value ($r = .11$; Back, Penke, Schmukle, & Asendorpf, 2011).

Self-enhancement and matching outcomes

Self-enhancement was not associated with the number of people who wanted to date each participant, but it was associated with how many matches each participant had. Participants who under-estimated their mate value tended to have more matches than those who over-estimated their mate value. Findings showed that while both groups received a similar number of potential matches, over-estimators were choosier with the number of partners they said yes to. While over-estimators ended up with fewer matches, their choosiness could still be advantageous if these matches were higher in mate value. However, self-enhancement was not associated with the participants' average match quality.

It is difficult to directly compare these results to findings from Schröder–Abé et al. (2016) since we did not distinguish between long-term and short-term interest. They found that self-enhancers garnered more interest as short-term partners but were no differently desired as long-term partners. Schröder–Abé et al. (2016) also found that self-enhancers were less choosy in the short-term but choosier in the long-term. Our self-enhancement results are consistent with both of their findings regarding long-term interest, but not short-term interest. It could be the case that our participants' ratings and choices were generally more motivated by long-term dating interest. Our results extend these previous finding by not only assessing how self-enhancers are perceived by potential partners, but also how self-enhancement is associated with mating strategies and, most importantly, matching outcomes.

We found no clear advantage for individuals who over-estimated their own mate value. These findings contrast with literature suggesting that self-enhancement may facilitate more positive social impressions (von Hippel & Trivers, 2011). However, we were only able to investigate differences between how participants rated themselves and how their partners rated them. We were not able to assess whether participants' self-evaluations directly

influenced how partners rated them, because mate value ratings were given after interacting with the participant and could therefore already incorporate any potential beneficial effects of self-enhancement. In other words, because our measure of self-enhancement is the degree to which people see themselves more positively than their partner sees them, we can only identify self-enhancement when it has failed to persuade their partner.

Overall we found that over-estimators were choosier than under-estimators, resulting in fewer reciprocal matches (which were of similar quality to under-estimators' matches). While neither over- nor under-estimators garnered more interest from potential dates, over-estimators were ultimately hindered by their mating strategies. These findings suggest that self-enhancement effects need to be considered within the broader context of the research question, rather than focusing on a single outcome. For example, had we only focused on number of interested partners as the outcome, we would conclude that self-enhancement is not relevant to mating outcomes. Once we investigated choosiness and total matches, it became apparent that self-enhancers may be at a mating disadvantage.

Limitations and future directions

There are limitations to the current study. First, participants were predominately young, educated, high socio-economic status, and English speakers. More diverse samples will be needed to determine the extent to which these findings generalise to other demographic groups. Second, while preferences inferred from speed-dates are more ecologically valid than self-reported preferences or ratings of photos or profiles, the 3-minute length of the interactions may limit the degree to which these findings reflect real life courtship situations. Future research could examine similar questions in other contexts, such as romantic feelings within friendship pairs or groups. Third, we did not consider whether participants were searching for long-term versus short-term partners. Different mate choice strategies might be implemented by individuals with different mating goals, and this could be

a fruitful direction for future study. Finally, it would be of interest to further investigate a point of uncertainty in the present findings: whether participants limit their maximum standard due to reasoning along the lines of “I don’t think they would be interested in me, so I won’t express interest in them” or due to a less conscious strategy expressed through genuine preference (“I’m just not attracted to them”).

Overall, our findings have clarified the role of self-evaluations in mating strategies and mating outcomes, in a high-powered study of real-life interactions. We found that individuals’ self-evaluations are related to their standards, resulting in interest for partners who are not too far above or below their own mate value. Individuals who overestimate their mate value do not garner more interest than individuals who underestimate their mate value, but they are choosier and therefore end up with fewer matches overall. Results support social exchange theory and the matching hypothesis, and contrast findings that self-enhancement facilitates positive social impressions and outcomes.

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