Different cognitive processes underlie human mate choices and mate preferences

Peter M. Todd*†‡, Lars Penke§¶, Barbara Fasolo‖, and Alison P. Lenton**

*Center for Adaptive Behavior and Cognition and ¶International Max Planck Research School LIFE, Max Planck Institute for Human Development, Lentzeallee 94, 14195 Berlin, Germany; †Cognitive Science Program, Indiana University, 1101 East 10th Street, Bloomington, IN 47405; §Department of Psychology, Humboldt University, Rudower Chaussee 18, 12489 Berlin, Germany; ‖Operational Research Group, London School of Economics, Houghton Street, London WC2A 2AE, United Kingdom; and **Department of Psychology, University of Edinburgh, 7 George Square, Edinburgh EH8 9JZ, United Kingdom

Based on undergraduates' self-reports of mate preferences for various traits and self-perceptions of their own levels on those traits, Buston and Emlen [Buston PM, Emlen ST (2003) *Proc Natl Acad Sci USA* 100:8805–8810] concluded that modern human mate choices do not reflect predictions of tradeoffs from evolutionary theory but instead follow a "likes-attract" pattern, where people choose mates who match their self-perceptions. However, reported preferences need not correspond to actual mate choices, which are more relevant from an evolutionary perspective. In a study of 46 adults participating in a speed-dating event, we were largely able to replicate Buston and Emlen's self-report results in a pre-event questionnaire, but we found that the stated preferences did not predict actual choices made during the speed-dates. Instead, men chose women based on their physical attractiveness, whereas women, who were generally much more discriminating than men, chose men whose overall desirability as a mate matched the women's self-perceived physical attractiveness. Unlike the cognitive processes that Buston and Emlen inferred from self-reports, this pattern of results from actual mate choices is very much in line with the evolutionary predictions of parental investment theory.

assortative mating | decision making | evolutionary psychology | sexual selection | speed-dating

What characteristics are preferable in a human mate? The answer depends, as ever in behavioral research, on how one asks the question. When asked in a normative manner—what characteristics should men and women seek in a mate?—the question can be addressed from the theoretical framework of evolutionary biology. Starting with the assumption that the underlying function of mate choice is reproductive success, evolutionary psychologists have proposed that men should seek young, fertile, faithful women, and women should seek high-status, resourceful, committed men, and both sexes should bargain for the traits they desire in the other sex by offering the desirable traits that they themselves possess (1, 2). When people are asked what traits they prefer in a mate, however, the answer to this question becomes less clear. On the one hand, the traits that people around the world say they prefer match the evolutionary predictions for making adaptive mate choices (3–5). On the other hand, Buston and Emlen (6) found that people do not indicate that they want to exchange, for instance, male status for female attractiveness (a hypothesis, based on an evolutionary mating market framework, that they call "potentials-attract") but rather seek someone just as high-status (or low) and attractive (or not) as themselves (a form of active positive assortative mating they call "likes-attract"). Why do the theoretical mate choice predictions and stated mate preferences clash in this way? In this work, by comparing the attributes that a group of mate-seeking individuals said they prefer in a mate with what they actually chose in potential partners, we show how the conflicting results can be reconciled.

The reconciliation between the evolutionary predictions and the verbally reported preferences begins in recognizing that the former are not necessarily predictions about the latter. The evolutionary reasoning predicts what traits people will actually tend to choose, not what people say they will (or would like to) choose. Although there is evidence for a certain degree of behavioral validity of stated mate preferences, such as for age differences (1, 3), these preferences often disagree with actual choices, a mismatch that scientists also have shown across a number of other domains and disciplines (7–9). This can happen simply because of environmental constraints: The available opportunities in the world may not match what people want. People also may be forced to make tradeoffs between preferences on different dimensions or to lower their overall standards in the face of competition from others [e.g., intrasexual competition for the same mates (1, 2)]. Mismatches between preferences and choices in many domains also can arise for more psychological reasons, such as when people do not have stable stored preferences but rather must construct them on the spot when asked or when choosing (10). This may lead to different outcomes when choices are stated at different times or in different circumstances (11, 12). Furthermore, people may not be adept at verbalizing their internal preferences (13). Social cues that lead people to try to give answers that they think the questioner wants to hear also can influence the responses given [e.g., demand effects (14)]. Finally, our minds may even be adapted to giving "wrong" responses, opposing or masking our true preferences, especially in important domains such as mate choice, where it may be beneficial to deceive competitors, potential mates (15), and even ourselves (16).

Given the problems inherent in asking people what they want in a mate, it is preferable to turn to a more direct method of observing what traits people actually do choose. One way would be to study current couples and ask them (or infer backward) what traits originally attracted them to each other, but this approach is of questionable usefulness because it relies on fallible memories of what was once found to be attractive in one's mate (cf. ref. 17). Another method would be to observe human mate choice "in the wild," but this is difficult because of the challenges in determining the cues being used and the choices being made (but see ref. 18). In this study, we turned to a more controlled, but still realistically motivated, setting where we could observe mate choice occurring at a rapid rate: speed-dating, a popular social event where men and women talk to each other for a few minutes before deciding whether or not they would like to pursue this person as a potential mate. By asking

Table 1. Beta weights from univariate linear regressions of domain-specific stated preferences on self-perceptions for women

Domain-specific self-perceptions	Domain-specific stated preferences				
	Wealth and status	Family commitment	Physical appearance	Attractiveness	Healthiness
Wealth and status	0.13	0.10	0.17	0.35	−0.07
Family commitment	0.23	0.76***	0.22	0.41†	−0.05
Physical appearance	0.08	0.25	0.84***	0.59**	0.60**
Attractiveness	−0.04	0.21	0.59**	0.65**	0.22
Healthiness	0.17	0.19	0.75***	0.30	0.74***

***, $P < 0.001$; **, $P < 0.01$; †, $P < 0.10$; all $df = 1, 18$.

people before a speed-dating session what traits they prefer in a mate and observing the traits embodied in the potential partners they actually chose, we were able to compare both stated preferences and choices with the theoretical predictions made by evolutionary psychology. In short, we found that whereas stated preferences supported the likes-attract hypothesis (6), actual choices did not, instead fitting more with evolutionary hypotheses, including potentials-attract.

Background: Mate Choice in the Speed-Dating Microcosm

Speed-dating events can be thought of as a microcosm where mate choices are made sequentially in a faster and more formalized fashion than in daily life. The structure of these events, increasingly popular in many countries, follows a similar pattern: Single people interested in finding a partner sign up for a session, often run by a commercial firm and usually segregated according to age (and sometimes other demographic variables, such as occupation). At a typical session, several men ($\approx$20) meet a similar number of women for 3- to 7-min "minidates" during a single evening. After each of these accelerated dates, each participant marks a card indicating how interested he or she is in meeting that person again, usually via a categorical decision ("I would like to meet again" vs. "I would not like to meet again"). Only those pairs of participants who expressed a mutual desire to meet are provided with each other's contact information. Speed-dating thus provides an ideal forum in which to study mate choice decisions, combining laboratory-like control with ecological realism (19). Our special speed-dating session added a prequestionnaire in which participants (singles in midadulthood) rated their own level and their desired level in a mate on seven evolutionarily relevant traits also used by Buston and Emlen (6): physical attractiveness, present financial status, future financial status, social status, healthiness, desire for children, and parenting qualities.

The artificially set length of speed-dating interactions might look too short for serious mate choices, but research on person perception in the minimal information paradigm repeatedly has shown that people are surprisingly accurate in judging others after very brief periods of time. This is not only the case for superficial traits, such as physical attractiveness, but also for less directly observable personality characteristics, such as broad personality traits and general intelligence (20, 21). Furthermore, although studies of speed-dating events can only capture the initial "screening" stage of the mate choice process, this initial stage is crucial, because it determines which pairings have any chance at all of resulting in committed romantic relationships. Kurzban and Weeden (22) were among the first to examine mate choice decisions and mating success in the context of speed-dating events, exploring the role of self-reported mate value in initial mating decisions. Just as Darwin (23) and Trivers (24) predicted, Kurzban and Weeden (22) found that women were much more selective than men: Although men chose, on average, every second woman, women only wanted to meet a

third of the men again. Both men's and women's success at the events (i.e., the number of times they were chosen, regardless of their own choice) was mainly predicted by visible indicators of good physical condition (e.g., body mass index). Resource indicators (e.g., income and education) had surprisingly little impact on success. However, having more resources made men more selective, and having indicators of good physical condition increased selectivity in both sexes. Greater selectivity, in turn, was related to stronger preferences for good physical condition in both sexes. Our study extends these results by comparing participants' choices with their stated preferences.

Results

Comparison of Overall Self-Perceptions and Stated Preferences. We first tested whether individuals with higher overall self-appraisals were choosier in terms of their overall preferences, as found by Buston and Emlen (6). To do this, we formed total sum scores of all seven attribute values for the self-perceptions and for the stated preferences (given their broadness, these sets had acceptable internal consistencies of $\alpha = 0.68$ and 0.63, respectively). The two summed scores were positively associated in both women ($r = 0.57$, $P = 0.008$) and men ($r = 0.77$, $P < 0.001$).

Comparison of Domain-Specific Self-Perceptions and Stated Preferences. To assess whether likes attract as Buston and Emlen (6) did, the stated mate preferences for the seven attributes were combined to form three of the four evolutionarily relevant domains considered by Buston and Emlen. Thus, present financial status, future financial status, and social status were summed to yield a "wealth and status" composite; desire for children and parenting qualities were summed as a "family commitment" composite; and physical attractiveness and healthiness were summed as a "physical appearance" composite.†† The self-perception ratings were similarly combined. However, although forming composite scores is appealing on theoretical grounds [e.g., for healthiness and attractiveness (25)], some of the attributes aggregated into these composites showed low internal consistencies, especially in the physical appearance domain ($\alpha = 0.10$ for reported preference and 0.33 for self-perception; internal consistencies of the composites were not reported by Buston and Emlen). We therefore also analyzed the attributes of physical attractiveness and healthiness separately.

Following Buston and Emlen's (6) data analysis strategy, for women and men separately we computed a series of univariate linear regressions in which the reported preference in each domain was individually regressed on each of the self-perception scores. We show these values in Table 1 for women and Table 2 for men, where the results corresponding to Buston and Emlen's

---

††We did not ask participants about the fourth domain, sexual fidelity, because of concerns that the questions could be misinterpreted in the speed-dating context and could affect the honesty of the other responses.

Table 2. Beta weights from univariate linear regressions of domain-specific stated preferences on self-perceptions for men

Domain-specific self-perceptions	Domain-specific stated preferences				
	Wealth and status	Family commitment	Physical appearance	Attractiveness	Healthiness
Wealth and status	0.37†	0.25	0.64***	0.59**	0.42*
Family commitment	0.27	0.85***	0.35†	0.07	0.37†
Physical appearance	0.19	0.49*	0.53**	0.41*	0.39†
Attractiveness	0.17	0.45*	0.12	0.56**	−0.18
Healthiness	0.12	0.29	0.63**	0.08	0.70***

***, $P < 0.001$; **, $P < 0.01$; *, $P < 0.05$; †, $P < 0.10$; all df = 1, 24.

are found in the upper left 3×3 cells. As can be seen in this part of the tables, two of the nine coefficients for women and four of the nine coefficients for men reached significance ($P < 0.05$), even in our relatively small sample. Additionally, two regressions for men were marginally significant ($P < 0.10$).

The significant results for the women closely followed the likes-attract pattern found by Buston and Emlen (6): In two domains (family commitment and physical appearance), women's self-perceptions explained a large amount of variance in their corresponding stated preferences (58% and 70%, respectively). However, women's self-perceptions of wealth and status showed no significant or substantial relationship with their stated preference for this domain, which does not support the likes-attract hypothesis.

For the men, the pattern was less clear: On the one hand, and in support of the likes-attract hypothesis, all relationships between domain-specific self-perceptions and the corresponding stated preferences were at least marginally significant, and in two of the three cases (wealth and status, family commitment), the coefficient of determination was higher for the predictor of the same domain than for the other two. On the other hand, self-perceived physical appearance was related to stated preference for family commitment nearly as much as it was related to preference for physical appearance ($R^2 = 0.24$ vs. 0.28). More notably, self-perceived wealth and status was a much better predictor of stated physical appearance preference than of its corresponding wealth preference domain ($R^2 = 0.41$ vs. 0.14), which lends support to the evolution-based potentials-attract hypothesis. Nevertheless, comparing the overall amount of variance explained by these two competing hypotheses, as per Buston and Emlen (6), shows a clear advantage for the likes-attract hypothesis.

Tables 1 and 2 also show how each of the items composing the physical appearance domain individually relate to the various domains. For women, self-perceptions of both attractiveness and healthiness were strong predictors of stated preferences for the same domain, and not for any other, supporting the likes-attract hypothesis. At the same time, the two items did not significantly predict one another, which points out the heterogeneity within the physical appearance composite (see ref. 26). For men, a similar pattern emerges, with both attractiveness and healthiness self-perceptions strongly relating to their respective stated preferences. Note that only the self-perceived attractiveness item shows the same significant relationship with stated preferences for family commitment as seen with the physical appearance composite. Likewise, reported attractiveness preferences are much more strongly predicted by self-perceived wealth and status than are healthiness preferences. It thus seems that, in men, attractiveness, rather than healthiness, produces the effects found in the physical appearance domain.

Do Stated Preferences Predict Real Choices? It looks as though individuals in our sample stated preferences that are close to their own self-perceived trait values, replicating Buston and Emlen's (6) likes-attract finding. The question we are most interested in, however, is how people's actual choices are structured.

To answer this question, we calculated choice scores from the offers that the men and women made at the FastDating event. On average, men made more offers (saying "yes") than women [men: $M = 7.35$, SD $= 3.68$; women: $M = 4.00$, SD $= 3.15$, $t(44) = 3.25$, $P = 0.002$, Cohen's $d = 0.98$]. Three women and one man did not make offers to anyone, so they were excluded from further analysis. For each remaining participant, we calculated the mean attribute value of the people to whom they made an offer, by averaging the chosen individuals' self-perceived values on each of the seven attributes. To illustrate, imagine Nate, who made offers to three women: Ophelia, Petra, and Ruth. If Ophelia rated herself as a 7 on family commitment, Petra rated herself a 3 on this trait, and Ruth a 2, then Nate's mean choice score for family commitment would be $(7 + 3 + 2)/3 = 4$. In addition to doing this for each of the seven self-rated attributes, we calculated the choice score for "observer-rated" physical attractiveness by using averaged attractiveness ratings made by two FastDating employees.‡‡

Table 3 depicts the correlations (separated by sex) between choice scores and stated preferences. The correlations for women are generally low for all domains except physical appearance and overall preferences (i.e., "ideal mate value" compared with "selected mate value"). Notably, men show a consistently negative relationship between stated preferences and chosen attributes. These counterintuitive correlations are significant for physical appearance and healthiness and marginally significant for overall preferences. Conversely, the results revealed a positive (although not significant) correlation between men's stated attractiveness preferences and the mean observer-rated attractiveness of their chosen women. As a whole, these findings indicate that there is a rather poor match between our sample's verbally stated preferences for mate traits and the preferences they expressed through their actual mate choices.

Comparison of Choices and Self-Perceptions. Next, we determined more specifically how the preferences that people express through their choices relate to their own self-perceived traits: Do likes attract, or do potentials attract in this case? First, to examine whether individuals with higher overall self-perceived mate value also choose others with relatively high overall self-perceived mate value, we ran correlations between these two summed scores separately for women and men. Contrary to both Busten and Emlen's (6) and our own findings comparing stated mate-value preferences with self-perceived mate value, overall mate value of actual choices showed no appreciable relationship

‡‡These ratings were highly correlated ($r = 0.56$, $P < 0.001$), justifying this averaging into an aggregate score (for men: $M = 5.6$, SD $= 1.2$; for women: $M = 6.0$, SD $= 1.4$).

PSYCHOLOGY

EVOLUTION

Table 3. Zero-order Pearson correlations between individuals' stated preferences and choice scores (mean trait values of chosen dates) for different domains

Stated preferences in the same domain	Domain-specific choice scores						Attractiveness (observer-rated)
	Wealth and status	Family commitment	Physical appearance	Attractiveness (self-perceived)	Healthiness	Overall	
Women	0.39	0.33	0.53*	0.13	0.14	0.54*	0.05
Men	−0.25	−0.07	−0.41*	−0.07	−0.44*	−0.36†	0.30

*, $P < 0.05$; †, $P < 0.10$.

with overall self-perceptions: Correlations were 0.34 ($P = 0.18$) for women and −0.27 ($P = 0.19$) for men.

Unlike domain-specific stated preferences, choice scores were not well predicted by self-perceptions within the same domain for either men or women (upper left part of Tables 4 and 5). For women, the likes-attract hypothesis is supported only for physical appearance. The only other significant relationship identified was between self-perceived family commitment and the choice score for physical appearance ($R^2 = 0.24$), not fitting the likes-attract pattern. Further evidence against likes-attract emerged when the internally inconsistent physical appearance composite was broken down again into its subcomponents (Table 4): Contrary to Buston and Emlen's (6) finding, neither self-perceived attractiveness nor healthiness predicted their respective traits in the observed choices. Self-perceived attractiveness, on the other hand, was a significant predictor of choices for all other domains, explaining 24–30% of their variance. A woman's self-perceived attractiveness was even a strong predictor for the overall self-perceived mate value (mean across all traits) of the men she chose ($r = 0.58$, $P = 0.016$).

For men (Table 5), there were no reliable relationships between stated preferences and choice scores: The coefficient of determination was rarely >0.10, and in several cases the beta weight was even negative. Only the observer-rated attractiveness of the chosen women was marginally significantly and positively predicted from men's self-perceived physical appearance. The same was true when the physical appearance composite was again split into its two components, with self-perceived attractiveness being a more potent predictor ($R^2 = 0.18$).

Overall, the likes-attract pattern that Buston and Emlen (6) found relating people's self-perceptions to their stated preferences in various attribute domains could be seen in rough form in our data but was not at all detectable between self-perceptions and actual preferences expressed in choices. Instead, women appeared to exchange their self-perceived physical attractiveness for everything but physical attractiveness in their chosen mates, largely as predicted by the potentials-attract hypothesis. Men, on the other hand, did not appear to make exchanges based on their self-perceptions at all (except for a weak indication of exchanging self-perceived attractiveness for women's externally rated attractiveness).

Strategies Used in Making Offers. The high correlation between women's self-perceived attractiveness and their chosen men's mate values suggests that women generally followed a strategy of adjusting their choosiness for overall mate value (mean on all traits) further upward the higher they rated themselves on attractiveness. Was this a reasonable strategy for women to follow in the FastDating setting? To find out, we first assumed that women generally want a small number of good matches from the event. This is supported by our prequestionnaire data, which indicates that on average women sought fewer than five matches. Second, we proposed that to achieve this goal, women would set their threshold for making offers to be as high as possible given the number of men available and their own ability to attract offers (if they set their threshold too low, they could get too many matches to less-desirable men, given that men make a larger number of less-discriminating offers). Now we can rephrase our question: Is a woman's self-perception of her own attractiveness a good cue to use in setting her aspirations? Yes: women's self-perceived attractiveness was the only domain-specific self-perception that was substantially correlated with the number of offers received from men ($r = 0.43$, $P = 0.059$; all other P values > 0.25). (Note that externally rated attractiveness was also highly correlated with offers: $r = 0.86$, $P < 0.001$.) At the same time, women's self-perceived attractiveness was unrelated to the number of men to whom they made offers ($r = 0.01$, $P = 0.96$). Thus, the women seemed to be using an effective strategy for adjusting their threshold for making offers to a small number of men of similar desirability as a mate, trading off their physical attractiveness against the overall quality of men across different domains, to achieve a few good matches.

Can the Unsuccessful Individuals Be Accounted For? As mentioned earlier, three women and one man did not make any offers, meaning that they were unwilling to meet again with anyone at this FastDating event. Their refusal to make choices did not allow us to analyze the contingency of their actual preferences on their self-perceptions. Still, we can compare these nonchoosers with their peers who did make choices.

The three nonchoosing women did not differ markedly from the women who made choices in terms of age, overall self-perception, and overall reported preferences (all d values <

Table 4. Beta weights from univariate linear regressions of domain-specific choice scores (mean trait values of chosen dates) on self-perceptions for women

Domain-specific self-perceptions	Domain-specific choice scores					Attractiveness (observer-rated)
	Wealth and status	Family commitment	Physical appearance	Attractiveness (self-perceived)	Healthiness	
Wealth and status	0.10	0.03	−0.03	−0.06	0.01	−0.27
Family commitment	0.36	0.18	0.49*	0.35	0.42†	−0.10
Physical appearance	0.32	0.40	0.54*	0.23	0.58*	0.16
Attractiveness	0.49*	0.55*	0.50*	0.20	0.55*	0.28
Healthiness	0.05	0.13	0.40	0.19	0.41	0.00

*, $P < 0.05$; †, $P < 0.10$; all df = 1, 18.

Table 5. Beta weights from univariate linear regressions of domain-specific choice scores (mean trait values of chosen dates) on self-perceptions for men

Domain-specific self-perceptions	Domain-specific choice scores					
	Wealth and status	Family commitment	Physical appearance	Attractiveness (self-perceived)	Healthiness	Attractiveness (observer-rated)
Wealth and status	−0.32	0.07	−0.22	−0.05	−0.26	0.22
Family commitment	−0.16	−0.03	−0.20	−0.35†	0.07	0.01
Physical appearance	−0.32	0.07	−0.28	−0.05	−0.34†	0.36†
Attractiveness	−0.24	0.19	−0.10	−0.04	−0.10	0.43*
Healthiness	−0.23	−0.08	−0.31	−0.03	−0.39†	0.13

*, $P < 0.05$; †, $P < 0.10$; all df = 1, 24.

0.40). However, they were >1 SD above the choosing women's mean on externally rated attractiveness ($d = 1.07$) and >1.5 SD above the choosing women's mean on self-perception of physical attractiveness ($d = 1.56$). Although these results are far from being statistically meaningful, they illustrate that the women who rejected all potential mates in this setting behaved very much in accordance with the attractiveness-adjusted-threshold mate choice mechanism suggested by the data of the women who did make choices.

The one man who did not make any choices was also within 1 SD of the men's mean for age, overall self-perception, and each domain-specific self-perception, including the physical attractiveness item. However, he was >1 SD above the mean for the choosing men's externally rated attractiveness (7.50, $M = 5.63$, SD = 1.19), paralleling the nonchoosing women. Interestingly, he was also >1 SD higher for overall stated preferences (7.00, $M = 5.99$, SD = 0.95), indicating that he was very picky in both his stated preferences and his actual choices.

Both the two women and the three men who did not receive any offers at this FastDating event fell >1 SD below those who did receive offers on externally rated attractiveness (both $d = 1.17$). The men apparently tried to compensate for this disadvantage by being less discriminating: They gave approximately twice as many offers as men who themselves received offers ($M = 13.3$ vs. 6.6). In contrast, the women rejected by every man did not make more offers than women who received offers (both $M = 4.0$).

Discussion and Conclusions

Before a speed-dating event, we asked participants to indicate their own self-perceived level on a variety of traits and the preferred level of their ideal mate on those same traits. We compared these with the trait levels of the people they actually chose to make offers to while speed-dating. Our results show that although both men and women stated that they prefer mates who possess attributes similar to their own (likes-attract), their actual choices told a different story: Men's choices did not reflect their stated preferences or their self-perceptions. Instead, men appeared to base their decisions mostly on the physical attractiveness of the women. They also appeared to be much less choosy, as reflected in the greater number of offers made by men compared with women (cf. ref. 22). One interpretation of these results is that men "propose" to nearly every woman above some certain attractiveness threshold, independent of their own desirability as a mate. This is in line with Grammer *et al.* (27) who found that men's preferences for women's physical attractiveness are best described as an avoidance of unattractiveness (see also ref. 28).

Although women's actual choices, like men's, did not reflect their stated preferences, they made more discriminating choices: They appeared to be aware of the importance to men of their own physical attractiveness, and they used their self-perception to adjust their aspiration level and picked only a few men with traits that matched their own desirability as a mate. Thus, both

men's and women's choices were influenced by women's physical attractiveness.

This pattern of results is in line with evolutionary models of human mating based on parental investment theory: Unlike men, women face a tradeoff between a mate's quality, both phenotypic and genetic (for which physical attractiveness is used as a cue) and his willingness to provide paternal investment (2, 24, 29). As a consequence, it is more adaptive for women to take into account how likely potential mates are to be committed to them and hence aim for mates of similar quality, instead of simply aiming for the most attractive mates. A small number of good matches also helps women to reduce unnecessary mating effort and to lower the risks associated with further in-depth screening of potential mates; thus, the speed-dating process can have important advantages for women.

In the context of speed-dating at least, self-reported mate preferences deviate markedly from actual mate choices. As with desires [e.g., for sexual variety (1 and 30)] and fantasies (31), stated preferences can be useful for understanding how evolution has biased the male and female mind in different directions, but they are a fallible base for discovering the process mechanisms of real choice behavior, as Buston and Emlen (6) aimed to do. Contrary to the concerns raised by Buston and Emlen (and subsequently ref. 32), the mate choice patterns of men and women, as we have found by analyzing speed-dating, are very much in line with the theories of Darwin (23) and Trivers (24). Furthermore, these patterns imply that the well documented phenomenon of human positive assortative mating (e.g., refs. 33 and 34), at least when it arises through active mate choice rather than social homogamy, is almost exclusively a result of the picky female choices, not the rather undiscriminating male ones. In this way, humans put themselves in line with most other mammals in following Darwin's (23) principle of choosy females and competitive males, even if humans say something different.

Methods

The online prequestionnaire§§ (comprising 76 items and available 8 days before the dating session) asked participants to

---

§§One participant submitted a hard copy of the prequestionnaire because of limited Internet access.

PSYCHOLOGY

EVOLUTION

indicate for a variety of traits both their ideal "level" or value of the trait (1 = very low, 9 = very high) and the importance (1 = not at all important, 9 = very important) they attach to attaining a mate with that level (e.g., desiring a very healthy mate, but placing only medium importance on getting someone with this trait value). We investigated most of the traits used by Buston and Emlen (6): physical attractiveness, present financial status, future financial status, social status, healthiness, desire for children, and parenting qualities. After this, participants rated their own levels on these attributes, using others of their same sex and social group as a comparison standard.

We assessed both trait value and trait import because, from a decision theoretic point of view, these two constructs are presumably independent, and both are required when assessing the overall utility of an option [summing up all of the attribute values times importance weights for each alternative (35)]. Buston and Emlen (6) asked participants to rate the importance of traits in potential mates but to rate the values of their own traits, which could have led to some mismatch between the two scales. We found that the desired value and importance of the attributes were highly correlated in our sample (mean $r = 0.77$), indicating that when people wanted a high value of some trait, they also felt that it was important to get that value. Thus, Buston and Emlen's (6) results should not have been greatly affected by their differential use of the scales. However, to be consistent, we used the self and other attribute values (not importance weights) for the analyses reported in this paper.¶¶

———————

At the special FastDating session, participants were given a badge with an identification number (women 1–21, men 1–26), along with a paper card for recording their dating decisions ("yes," I would like to see this person again, or "no," I would not like to see this person again). The 21 women sat down, 1 per table, and 21 of the men sat down opposite them. Men 22–26 waited until they were rotated into the meeting scheme.

Each couple then talked for 5 min, after which all of the men shifted over one table to meet the next woman in line (with man 26 now meeting woman 1). While this shift was taking place, the participants marked down their decision about the person they had just met. These marks also could be made, or changed, at any time during the evening, but almost all individuals recorded their choices about someone while or immediately after talking with them. At the end of the evening, the decision cards were collected. The only difference from a regular FastDating session was that, during the course of the evening, the organizer and an assistant (one man, one woman) made surreptitious judgments of the physical attractiveness of each participant on a scale of 1 (not attractive at all) to 10 (very attractive).

After the FastDating session, the organizer compiled the participants' decisions from their cards in the standard way: Whenever a woman and man indicated mutual interest in each other (i.e., they each marked yes to the other), a match was recorded. Within 2 days after the session (and only after they had filled out the postquestionnaire), participants were e-mailed a list of those people with whom they had matched. In some cases, this list was empty (three men and two women in our sample).

1. Buss DM, Schmitt DP (1993) *Psychol Rev* 100:204–232.
2. Miller GF, Todd PM (1998) *Trends Cognit Sci* 2:190–198.
3. Buss DM (1989) *Behav Brain Sci* 12:1–49.
4. Kenrick DT, Groth GE, Trost MR, Sadalla EK (1993) *J Pers Soc Psychol* 64:951–969.
5. Fletcher GJO, Simpson JA, Thomas G, Giles L (1999) *J Pers Soc Psychol* 76:72–89.
6. Buston PM, Emlen ST (2003) *Proc Natl Acad Sci USA* 100:8805–8810.
7. Ajzen I, Fishbein M (1980) *Understanding Attitudes and Predicting Social Behavior* (Prentice–Hall, Englewood Cliffs, NJ).
8. La Pierre R (1934) *Social Forces* 13:230–237.
9. Wicker AW (1969) *J Soc Issues* 25:41–78.
10. Kahneman D, Ritov I, Schkade DA (1999) *J Risk Uncertainty* 19:203–236.
11. Fischhoff B (1991) *Am Psychol* 46:835–847.
12. Payne JW, Bettman JR, Johnson EW (1992) *Annu Rev Psychol* 43:87–131.
13. Wilson TD, Dunn DS (1986) *J Exp Soc Psychol* 22:249–263.
14. Orne MT (1962) *Am Psychol* 17:776–783.
15. Tooke W, Camire L (1991) *Ethol Sociobiol* 12:345–364.
16. Trivers R (2000) *Ann NY Acad Sci* 907:114–131.
17. Hertwig R, Fanselow C, Hoffrage U (2003) *Memory* 11:357–377.
18. Renninger LA, Wade T, Grammer K (2004) *Evol Hum Behav* 25:416–431.
19. Finkel EJ, Eastwick PW, Matthews J (2007) *Pers Relationsh* 14:149–166.
20. Ambady N, Bernieri FJ, Richeson JA (2000) in *Advances in Experimental Social Psychology*, ed Zanna MP (Academic, San Diego), Vol 32, pp 201–271.
21. Borkenau P, Mauer N, Riemann R, Spinath FM, Angleitner A (2004) *J Pers Soc Psychol* 86:599–614.
22. Kurzban R, Weeden J (2005) *Evol Hum Behav* 26:227–244.
23. Darwin CR (1871) *The Descent of Man, and Selection in Relation to Sex* (John Murray, London).
24. Trivers RL (1972) in *Sexual Selection and the Descent of Man*, ed Campbell B (Aldine–Atherton, Chicago), pp 136–179.
25. Gangestad SW, Buss DM (1993) *Ethol Sociobiol* 14:89–96.
26. Weeden J, Sabini J (2005) *Psychol Bull* 131:635–653.
27. Grammer K, Fink B, Juette A, Ronzal G, Thornhill R (2002) in *Facial Attractiveness: Evolutionary, Cognitive, and Social Perspectives*, eds Rhodes G, Zebrowitz LA (Ablex, Westport, CT), pp 91–125.
28. Zebrowitz LA, Rhodes G (2004) *J Nonverb Behav* 28:167–185.
29. Gangestad SW, Simpson JA (2000) *Behav Brain Sci* 23:573–644.
30. Schmitt DP, Alcalay L, Allik J, Ault L, Austers I, Bennett KL, Bianchi G, Boholst F, Cunen MA, Braeckman J, *et al.* (2003) *J Pers Soc Psychol* 85:85–104.
31. Ellis BJ, Symons D (1990) *J Sex Res* 27:527–555.
32. Borgerhoff Mulder M (2004) *Trends Ecol Evol* 19:3–6.
33. Vandenberg SG (1972) *Behav Genet* 2:127–157.
34. Lykken DT, Tellegen A (1993) *J Pers Soc Psychol* 65:56–68.
35. Keeney RL, Raiffa H (1976) *Decisions with Multiple Objectives: Preferences and Value Tradeoffs* (Wiley, New York).