Research Report

The Ability to Judge the Romantic Interest of Others

Skyler S. Place,[1] Peter M. Todd,[1] Lars Penke,[2] and Jens B. Asendorpf[3]

[1]Indiana University, [2]University of Edinburgh, and [3]Humboldt University of Berlin

ABSTRACT—*The ability to judge another individual's romantic interest level—both toward oneself and toward others—is an adaptively important skill when choosing a suitable mate to pursue. We tested this ability using videos of individuals on speed dates as stimuli. Male and female observers were equally good at predicting interest levels, but they were more accurate when predicting male interest: Predictions of female interest were just above chance. Observers predicted interest successfully using stimuli as short as 10 s, and they performed best when watching clips of the middle or end of the speed date. There was considerable variability between daters, with some being very easy to read and others apparently masking their true intentions. Variability between observers was also found. The results suggest that the ability to read nonverbal behavior quickly in mate choice is present not only for individuals in the interaction, but also for third-party observers.*

It is adaptively important for an individual to be able to evaluate the interest level of a potential mate. Choosing a mate is a key component of gene promotion, and it is one of the most central decisions concerning reproduction across species (Andersson, 1994). Accurately appraising interest minimizes wasted time and resources and allows for a greater chance of success in a competitive mating market (Wiegmann & Angeloni, 2007). In terms of evolutionary life-history theory, it is thus fundamental for an efficient allocation of mating effort (Kaplan & Gangestad, 2005). Correctly perceiving interest is useful not only for choosing a mate but also for determining one's own mate value (Simão & Todd, 2002), which is important for future mating decisions (Penke, Todd, Lenton, & Fasolo, 2007; Penke & Denissen, 2008). Thus, it is beneficial for humans to be able to pick up on cues that allow them to excel at such appraisals. These cues could include information available through language content and tone of voice, as well as nonverbal behaviors such as body language, social signaling, and eye contact (Ambady & Rosenthal, 1992; Penke & Asendorpf, 2008).

In addition to evaluating a potential mate's level of interest in oneself, it is advantageous to be able to evaluate levels of interest between others via observed interactions. This is important for building knowledge of the surrounding social network (Pentland, 2007), including the availability and desirability of future potential mates (Simão & Todd, 2002; see also the literature on mate copying in animals—e.g., Dugatkin, 1992, 2000—and in humans—e.g., Jones, DeBruine, Little, Buriss, & Feinberg, 2007). Observer perception in general has been a fruitful field for social psychologists: Kenny and colleagues (Kenny, 1994; Kenny & Albright, 1987; Kenny, Bond, Mohr, & Horn, 1996) studied "third-party metaperceptions," with participants observing interactions between pairs of individuals, and found that people performed above chance at predicting who feels friendly toward whom. This and other social perceptions can be made accurately with limited information (see Ambady & Rosenthal, 1992, for a review).

Given the results on accurate observer predictions regarding friendship, along with the adaptive need for an efficient mechanism to predict interest in mate choice, we hypothesized that individuals will be able to accurately predict others' interest in themselves and in third parties. Here we focus on the latter, third-party metaperceptions of how romantically interested other people are in each other. To be adaptive in everyday situations, the ability to determine this should require only a limited amount of information, suggesting that performance should not be hindered by shortened stimuli-presentation times. Furthermore, because women face greater risks during mate choice due to their inevitably higher minimal parental investment in potentially resulting offspring (Trivers, 1972), we predicted that they would behave more cautiously, covertly, and ambiguously during initial interactions, making their intentions more difficult to read than those of men (Grammer, Kruck, Juette, & Fink, 2000; Haselton & Buss, 2000). Finally, we also investigated the observers' relationship status as a potentially confounding factor.

Address correspondence to Skyler Place, Psychological and Brain Sciences, Indiana University, 1101 E. 10th St., Bloomington, IN 47405, e-mail: ssplace@indiana.edu.

To test these ideas, we needed a set of mate-choice-relevant interactions that observers could watch and judge, and for which there was information on actual romantic interest so we could assess the observer's accuracy. Videos of speed dating interactions fulfilled these requirements and also allowed us to limit the information available to our judges by presenting them with clips of various durations.

METHOD

Participants

The study included 54 participants—28 women (mean age = 19.8 years, *SD* = 3.8 years; 14 in relationships) and 26 men (mean age = 19.5, *SD* = 1.1 years; 9 in relationships). Participants were recruited from the Indiana University psychology participant pool and were compensated with research credits required for undergraduate coursework. Participants were screened to be over 18 years old, to be heterosexual, and to have no knowledge of the German language (because the stimuli were in German; see next section).

Stimuli

The videos of mate-choice situations were gathered during a series of laboratory-based speed dating sessions run at Humboldt University in Berlin, Germany. Speed dating is a paradigm designed to allow singles to meet a large number of possible mates in a short period of time (Finkel & Eastwick, 2008). The individuals who participated in the Berlin Speed Dating Study (BSDS) were recruited using advertising and publicity in media outlets; in exchange for free speed dating, they agreed to have their interactions videotaped and to provide additional data on themselves. Seventeen sessions of speed dating were run as part of the study, for a total of 382 participants.

The "dates" took place in separated booths, and each lasted for 3 min, at the end of which each individual wrote down whether he or she was interested in seeing that date again (an "offer"). Pairs making mutual offers were given each other's contact information after the session so they could meet again. The videos of these interactions were the stimuli used in our experiment. Each of the two individuals in a speed date was filmed with a separate over-the-shoulder camera, and these two videos (with audio in German) were shown in a synchronized side-by-side combination to our participants. These combined video presentations, which we refer to as a video clip, allowed a naturalistic view of the date. Videos of 24 interactions were used in this experiment, randomly selected from two different sessions comprising speed daters in their 20s; each person appeared in only one video. This sample matched the entire population of interactions from the BSDS sessions with regard to offer rates from men (41%) and women (33%), as well as rates of mutual interest between individuals (15%).

Participants watched shortened video clips that were either 10 s or 30 s long and came from the beginning, middle, or end of the date (three temporal locations). For each of the 24 interactions we used, each participant saw four clips (in randomized order, both within and across interactions): 10-s clips from all three locations and one 30-s clip from a location that was randomized across interactions. The experimental design was therefore a 2 (observer sex: male, female) × 2 (relationship status: single, in relationship) × 3 (clip location: beginning, middle, end) × 2 (clip length: 10 s, 30 s) mixed factorial design.

Procedure

Participants first provided their age, sex, ethnicity, and relationship status. Our dependent measure was the observing participant's perception of the interest within each speed dating interaction they watched. Observers answered two questions after each video clip: "Do you think the man was interested in the woman?" and "Do you think the woman was interested in the man?" Their binary "yes" or "no" answers were then compared to the binary decisions of the actual speed daters.

RESULTS

The first question posed was whether observers could predict romantic or dating interest between others accurately. Figure 1 presents the results for prediction of male interest and for prediction of female interest separately, collapsing across all within-subjects conditions. A paired-sample *t* test showed a significant difference between the two measures, $t(53) = 3.64$, $p_{rep} = .986$, $d = 1.00$. It is important to note that observers could achieve a chance accuracy above 50% in this task if they had knowledge of the fact that daters make offers less than half the time (see above), and they could have had such knowledge through past dating experience (participants were not explicitly informed of the interest rates prior to the start of the experiment). If they took account of the actual offer prevalence rates, the best that observers could do at chance would be 52% ($.41 \times .41 + [1 - .41] \times [1 - .41]$) for predicting male interest and 56% ($.33 \times .33 + [1 - .33] \times [1 - .33]$) for predicting female interest, calculated using the base rates of interest present in the stimuli set.

Observer performance on both of the dependent measures was significantly better than these adjusted chance levels for predicting male interest, $t(53) = 10.76$, $p_{rep} = .986$, $d = 2.94$, but was just above chance for predicting female interest, $t(53) = 2.24$, $p_{rep} = .908$, $d = 0.62$. (See Ambady & Rosenthal, 1992, for similar accuracy ranges for other thin-slice social perceptions.)

Each dependent measure was analyzed for contributing factors using a mixed-factor analysis of variance (ANOVA). For predicting male interest in females, there was no effect of sex. There was an effect of relationship status, such that individuals in relationships outperformed individuals who were single,

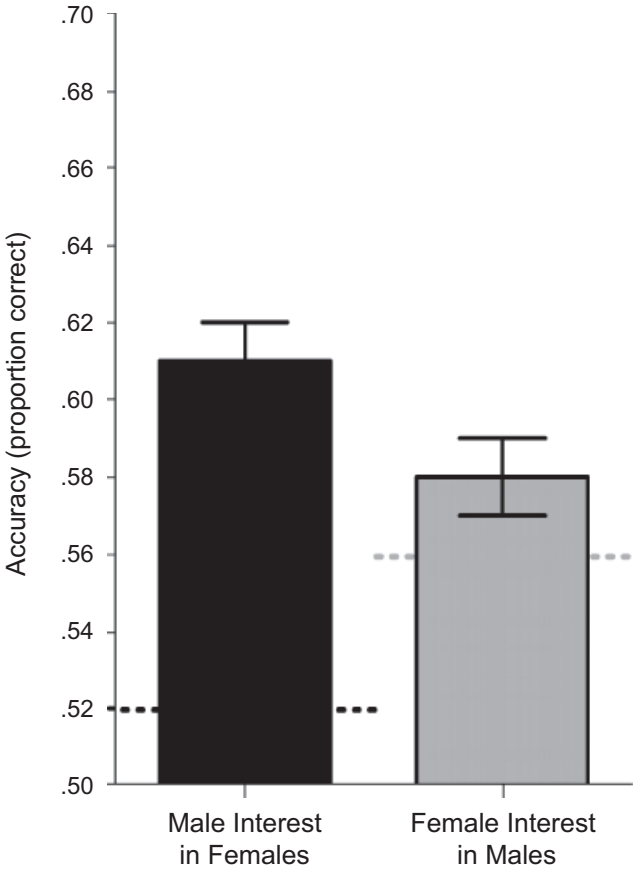

Fig. 1. Overall accuracy in predicting romantic interest of videotaped speed-dating participants. Dashed lines indicate chance performance levels for predicting interest for daters of each sex. Error bars show standard errors of the means.

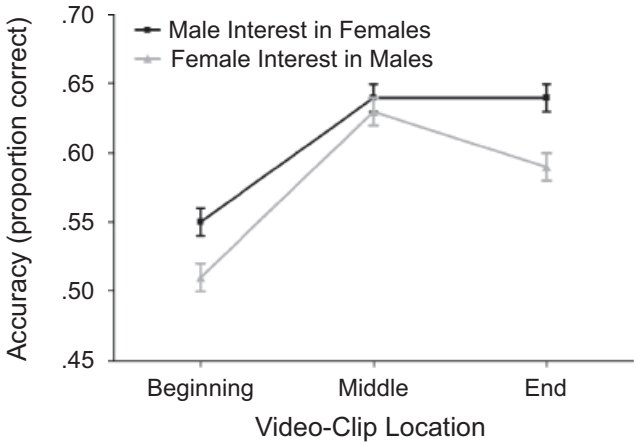

Fig. 2. Accuracy in predicting romantic interest of speed-dating participants by video-clip location. Error bars show standard errors of the means.

$F(1, 50) = 6.18$, $p_{rep} = .935$, $\eta_p^2 = .11$. The length of the video clip presented had no effect on accuracy. There was, however, an effect of video-clip location, $F(2, 100) = 16.86$, $p_{rep} = .986$, $\eta_p^2 = .25$. None of the possible interactions reached significance. For predicting female interest in males, sex, relationship status, and video presentation length were all not significant. As in the male-interest data, there was a significant effect of video-clip location, $F(2, 100) = 16.18$, $p_{rep} = .986$, $\eta_p^2 = .41$.

We further analyzed the within-subjects factor of location using a single-factor ANOVA (with levels beginning, middle, and end), revealing a significant difference of location for predicting both male interest in females, $F(2, 106) = 29.35$, $p_{rep} = .986$, $\eta_p^2 = .36$, and female interest in males, $F(2, 106) = 36.52$, $p_{rep} = .986$, $\eta_p^2 = .41$. Figure 2 shows that the best performance at judging interest came from viewing clips from the middle and end of the interaction. Post hoc comparisons using the Bonferroni correction showed significant differences between the beginning clip and both the middle and end clips for both male interest and female interest.

To look at how "readable" individual speed daters were, the data were further analyzed at the per-dater level (see Fig. 3). Daters were sorted from most-accurately predicted (mean accuracy across all observers) to least. This was done by individual, not by interaction—a single video could include a woman who was very easy to read (yielding high accuracy) and a difficult-to-read man (yielding low accuracy), and we assessed readability of these two individuals separately. In fact, being accurate at predicting the dating interest of one sex does not help in predicting the interest level of the other: The correlation between accuracy in predicting male interest and accuracy in predicting female interest in the same video was zero, $r = .00$, $p_{rep} = .083$.

The solid lines in Figure 3 show participants' mean accuracy at predicting all males and all females. The steep downward slope of both lines indicates the wide range in observers' ability to predict the interest level of different individuals. To find out if these results are different from those expected by chance, we ran a Monte Carlo simulation designed to determine chance-level performance based on guessing. The simulation generated a set of responses for each observer, for each video, for each of the four partial clips. Predictions of interest in each case were chosen randomly according to the interest-judgment rates (~60%) of observers. The simulation was run 1,000 times, and the responses were averaged within each observer for each dater in the videos and then averaged across observers. The results rank-ordered across daters (Fig. 3, dashed lines) have a slope that is less steep than that of the experimental data. Both the male and the female human-observer data fall clearly above the 95% confidence intervals of the Monte Carlo simulation in the 11 daters who were easiest to predict. In addition, the five women daters who were the hardest for observers to read fall below the 95% confidence intervals, showing that observers were systematically fooled in these cases.

DISCUSSION

The data supported our two main hypotheses: Observers were able to assess the dating interest of others at above-chance

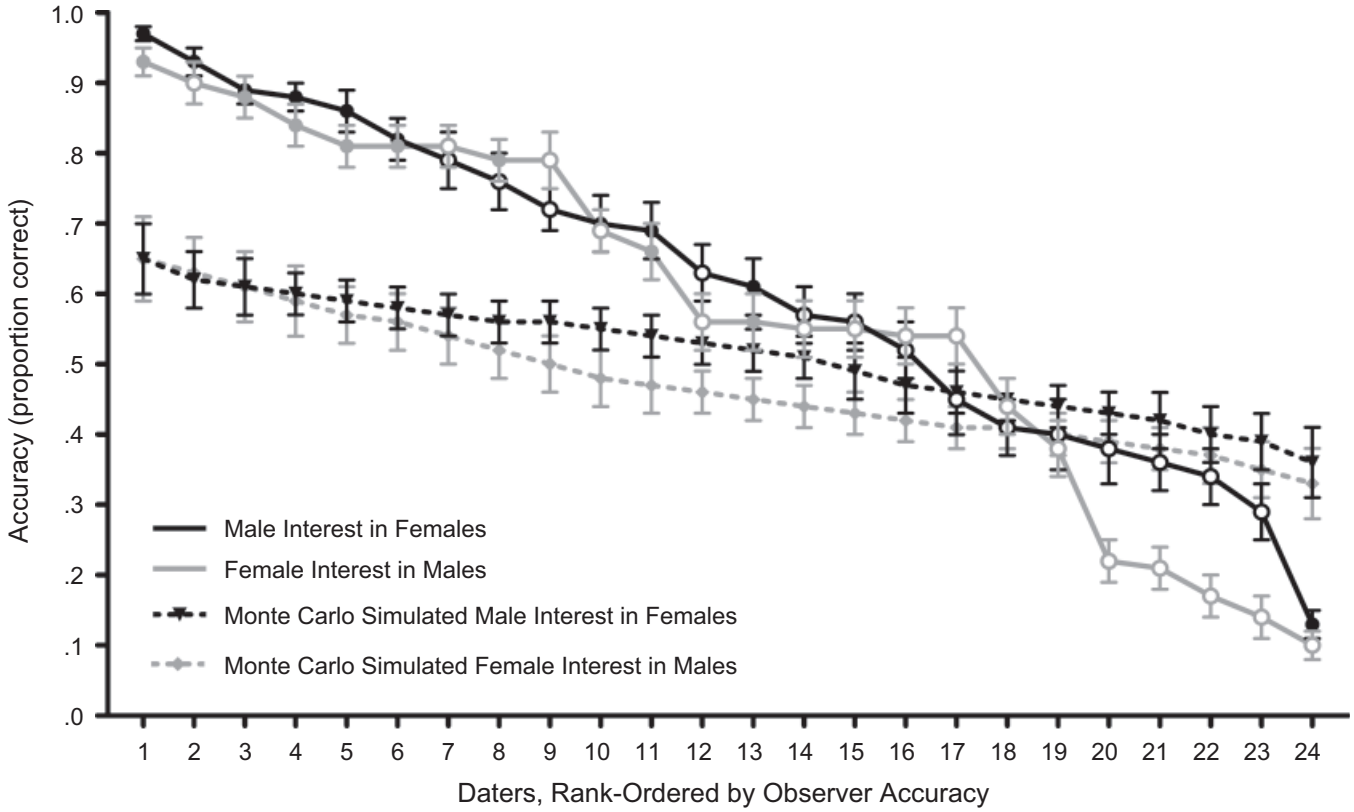

Fig. 3. Accuracy in predicting each dater's interest, comparing human judges with Monte Carlo simulations. Error bars for observed data show standard errors of the means. Error bars for simulated expected data show 95% confidence intervals. Open circles indicate daters who were not interested; closed circles indicate daters who were interested.

levels, and the length of time required to do so was brief. For both sexes, accurately perceiving romantic interest both of and toward potential mates holds evolutionary benefits through the efficient allocation of mating effort. Our results suggest that men and women possess this adaptive ability. Whether it is the result of a domain-specific adaptation or a more general ability for social perception remains to be determined. Furthermore, as predicted, it was on average easier for observers to gauge men's intentions than it was to gauge women's intentions (though there was high variance in observers' performance levels across individual daters of both sexes). The lower overall accuracy concerning women's intentions was not due to observers guessing or performing at chance but to a systematic overperception of female daters' interest (Fig. 3)—surpassing 80% erroneous interest predictions for the five hardest-to-read women.

This dramatic rate of incorrect perception supports our hypothesis that women are harder to read, presumably because they mask their true intentions: As Grammer et al. (2000) argued, the biologically deep-rooted sex inequality in parental investment (Trivers, 1972) puts greater risks on the females of a species during mate choice. As a result, females, including women in speed dating (Todd, Penke, Fasolo, & Lenton, 2007), are much more critical and picky when making mate-choice decisions. And, in order to evaluate potential mates longer without signaling their true intentions, women behave more covertly and ambiguously during initial interactions with the opposite sex. Men, in contrast, face lower risks and consequently should be less likely to hide their intentions. In our study, observers only saw an individual interacting on one date, but perhaps if multiple dates with the same individual were presented, observers would be better able to differentiate instances of deceptive and true interest from that individual.

Whereas the degree of observer accuracy seems to depend heavily on the individual dater being watched, the length of time spent watching has almost no effect. However, a systematic difference in observer performance appears when comparing across video-clip locations: In our study, the best observer judgment performance came for video clips taken from the middle and end of the dates. This may arise because daters are using the information they gather throughout their brief encounter to make their ultimate decisions, so that their decisions are not fully determined, and therefore not fully readable by others, until later in the encounter. If true, this would counter a major critique of speed dating as a method of finding a long-term partner: that people are using only physical attractiveness to make their dating decisions because they do not have the time to assess much else (Eastwick & Finkel, 2008; Kurzban & Weeden,

2005; Todd et al., 2007). Other data are needed to determine whether daters are using multiple cues over time or just taking time to register an attractiveness-driven decision.

Some observers also appear to be better at using the available information for making some judgments. Whereas we did not aim to identify the individual differences underlying good observers (see Funder, 2001), we did find that observers who indicated they were currently in a relationship did better at predicting male interest than did those who were currently single. This suggestive finding could stem in part from learning through relationship experiences. Alternatively, it is possible that the social skills necessary to succeed in finding and maintaining a relationship also support the ability to correctly perceive romantic interest. Studying younger observers before they have much relationship experience could help to disentangle these (and potentially other) hypotheses.

The results of this study add to the body of findings on the abilities of naive observers to make quick and accurate judgments, demonstrating that this ability extends to assessments of romantic interest in the mate-choice domain as well. We have shown this through a novel method that provides a strong criterion against which the observer judgments were evaluated: unambiguously stated, consequential mate-choice decisions of actual partner-seeking singles meeting available potential mates while speed dating. With limited information, observers can make accurate judgments of mate-choice decisions, though their abilities may be hampered by the desire of some daters to mask their true intentions.

Acknowledgments—This research was supported by Grant As 59/15 of the German Research Foundation (DFG), awarded to Jens Asendorpf. We would like to thank Marie-Luise Haupt, Karsten Krauskopf, Harald Schneider, and Sebastian Teubner for their help with the Berlin Speed Dating Study. Lars Penke is supported by the United Kingdom Medical Research Council (Grant No. 82800) and is part of the University of Edinburgh Centre for Cognitive Ageing and Cognitive Epidemiology. Funding from the Biotechnology and Biological Sciences Research Council, Engineering and Physical Sciences Research Council, Economic and Social Research Council, and Medical Research Council is gratefully acknowledged.

REFERENCES

Ambady, N., & Rosenthal, R. (1992). Thin slices of expressive behavior as predictors of interpersonal consequences: A meta-analysis. *Psychological Bulletin*, *111*, 256–274.

Andersson, M.B. (1994). *Sexual selection*. Princeton, NJ: Princeton University Press.

Dugatkin, L.A. (1992). Sexual selection and imitation: Females copy the mate choice of others. *American Naturalist*, *139*, 1384–1389.

Dugatkin, L.A. (2000). *The imitation factor: Evolution beyond the gene*. New York: Free Press.

Eastwick, P.W., & Finkel, E.J. (2008). Sex differences in mate preferences revisited: Do people know what they initially desire in a romantic partner? *Journal of Personality and Social Psychology*, *94*, 245–264.

Finkel, E.J., & Eastwick, P.W. (2008). Speed-dating. *Current Directions in Psychological Science*, *17*, 193–197.

Funder, D.C. (2001). Accuracy in personality judgment: Some research and theory concerning an obvious question. In B. Roberts & R. Hogan (Eds.), *Personality psychology in the workplace* (pp. 121–140). Washington, DC: American Psychological Association.

Grammer, K., Kruck, K., Juette, A., & Fink, B. (2000). Non-verbal behavior as courtship signals: The role of control and choice in selecting partners. *Evolution and Human Behavior*, *21*, 371–390.

Haselton, M.G., & Buss, D.M. (2000). Error management theory: A new perspective on biases in cross-sex mind reading. *Journal of Personality and Social Psychology*, *78*, 81–91.

Jones, B., DeBruine, L., Little, A., Burriss, R., & Feinberg, D. (2007). Social transmission of face preferences among humans. *Proceedings of the Royal Society B: Biological Sciences*, *274*, 899–903.

Kaplan, H.S., & Gangestad, S.W. (2005). Life history theory and evolutionary psychology. In D.M. Buss (Ed.), *The handbook of evolutionary psychology* (pp. 68–95). New York: Wiley.

Kenny, D.A. (1994). *Interpersonal perception: A social relations analysis*. New York: Guilford Press.

Kenny, D.A., & Albright, L. (1987). Accuracy in interpersonal perception: A social relations analysis. *Psychological Bulletin*, *102*, 390–402.

Kenny, D.A., Bond, C.F., Jr., Mohr, C.D., & Horn, E.M. (1996). Do we know how much people like one another? *Journal of Personality and Social Psychology*, *71*, 928–936.

Kurzban, R., & Weeden, J. (2005). HurryDate: Mate preferences in action. *Evolution and Human Behavior*, *26*, 227–244.

Penke, L., & Asendorpf, J.B. (2008). Beyond global sociosexual orientations: A more differentiated look at sociosexuality and its effects on courtship and romantic relationships. *Journal of Personality and Social Psychology*, *95*, 1113–1135.

Penke, L., & Denissen, J.J.A. (2008). Sex differences and lifestyle-dependent shifts in the attunement of self-esteem to self-perceived mate value: Hints to an adaptive mechanism? *Journal of Research in Personality*, *42*, 1123–1129.

Penke, L., Todd, P.M., Lenton, A.P., & Fasolo, B. (2007). How self-assessments can guide human mating decisions. In G. Geher & G. Miller (Eds.), *Mating intelligence: Sex, relationships, and the mind's reproductive system* (pp. 37–75). Mahwah, NJ: Erlbaum.

Pentland, A. (2007). On the collective nature of human intelligence. *Adaptive Behavior*, *15*, 189–198.

Simão, J., & Todd, P.M. (2002). Modeling mate choice in monogamous mating systems with courtship. *Adaptive Behavior*, *10*, 113–136.

Todd, P.M., Penke, L., Fasolo, B., & Lenton, A.P. (2007). Different cognitive processes underlie human mate choices and mate preferences. *Proceedings of the National Academy of Sciences, USA*, *104*, 15011–15016.

Trivers, R.L. (1972). Parental investment and sexual selection. In B. Campbell (Ed.), *Sexual selection and the descent of man* (pp. 136–179). Chicago: Aldine-Atherton.

Wiegmann, D.D., & Angeloni, L.M. (2007). Mate choice and uncertainty in the decision process. *Journal of Theoretical Biology*, *249*, 654–666.

(RECEIVED 4/2/08; REVISION ACCEPTED 7/9/08)