Desires in Human Mating

DAVID M. BUSS

Department of Psychology, University of Texas, Austin, Austin, Texas 78712, USA

ABSTRACT: This chapter traces theoretical and empirical progress in the study of human mating over the past few decades. Early pre-evolutionary formulations proposed that men and women were identical in their mating motivations. Most were simplistic, typically postulating a single motive for mating: the search for similarity, equity, or complementarity. Given the large sex differences in human reproductive biology, notably women bearing the burdens of internal fertilization and a greater obligatory parental investment, it would be extraordinarily unlikely that evolution by selection would fail to forge sex-differentiated mating strategies. Empirical research over the past 15 years has robustly confirmed evolutionary predictions in the domains of desire for sexual variety, the importance of fertility cues, and the importance of resource-provisioning. Recent work has revealed a hidden side of women's sexuality—a desire for extra-pair partners and the conditions under which this desire is expressed. We now have the theoretical and empirical outlines of an evolutionary formulation of human mating strategies.

DESIRES IN HUMAN MATING

Desires lie at the foundation of human mating. Desires determine whom we are attracted to as potential partners. Fulfillment of desire is the key to successful mate attraction and successful mate retention, and the key to harmony between the sexes involves the fulfillment of desire. Violations of desires constitute the primary source of conflict between the sexes. Effective means for derogating competitors involve impugning them or besting them on qualities desired by a targeted mate. Because of the centrality of desire for understanding so many aspects of human mating, much early research on the psychology of human mating focused on empirically documenting desires, guided by Darwin's theory of sexual selection[1] in its modern manifestations.[2–4]

When I first started studying human mating, in the early 1980s, little work in psychology existed on the topic and existing theories of mating in the social sciences were remarkably simplistic. Most postulated a single motive in mating, such as the search for similarity, the search for equity, or the search for qualities that embodied an opposite-sex parent. None of these theories provided an explanation for why humans would be motivated in these directions. Why should humans seek similarity or equity? What might be the origins of these motives? What functions would they serve? Perhaps even more remarkable was the fact that men and women were presumed to be identical in their mating psychology. Sex differences were not part of any theories of mating, nor did researchers focus on them in their empirical research.[5]

To an evolutionist, however, it would be astonishing if the sexes were identical in their sexual psychology. Spectacular sex differences in reproductive biology, includ-

ing the fact that fertilization occurs internally with women and not men, and the greater obligatory parental investment of females impose distinct adaptive problems on the sexes. Could these biological differences, recurring over millions of years of evolutionary history, fail to select for a sex-differentiated sexual psychology?

My first scientific interest in human mating began with testing a few simple predictions based on Trivers' 1972 theory of parental investment and sexual selection. Trivers initially defined parental investment as any investment in offspring that precludes the ability to invest in other offspring. Subsequent definitions of parental investment emphasize the time, energy, or effort expended to aid the survival or reproduction of one offspring at the expense of other forms of investment, including effort allocated to intrasexual competition for alternative mates. Thus, parental investment is defined by decrements in a parent's residual reproductive value, including any reduction in the parent's survival, fecundity, mating success, or ability to invest in relatives.[6]

Trivers reasoned that the relative parental investment of the sexes in their offspring determined which of the two components of sexual selection (preferential mate choice and intrasexual competition) was operative for each sex. He reasoned that the sex that invests more in offspring should be more selective in their choice of mates. The costs of making a poor mate choice are greater for the highest-investing sex. A woman, for example, might risk raising a child alone, without sufficient resources, if she chose a man who abandoned her or proved to be a "slacker." A man who made a poor mate choice, in contrast, might only waste a few hours of time, and hence the costs to him are commensurately lower.

By exercising choice, the higher-investing sex can select mates on various grounds, depending on the particular species, to increase the survival and reproduction of her offspring. This can range from selecting mates with "good genes" to selecting mates that show an ability or willingness to invest in her offspring. The low-investing sex, on the other hand, should be more competitive with members of their own sex for sexual access to the higher-investing sex. The higher-investing sex becomes the valuable and limiting reproductive resource over which the lower-investing sex competes. The intrasexual component of sexual selection, in short, should be engaged most intensely by the lower-investing sex.

However, the two components of sexual selection, mate preferences and intrasexual competition, become connected, or the distinction blurred, because the mate preferences of one sex can determine the content of the competition of the other. If females desire males with territory, for example, then that exerts selective pressure on males to compete with one another to acquire what females desire. Those that succeed in besting their intrasexual competitors in fulfilling these desires are preferentially chosen as mates. Those that fail suffer sexual exclusion. These principles, in the past, have been amply documented in the animal literature,[7] but their application to human behavior is less so. We may ask, are women, being the sex with higher levels of obligatory parental investment, more selective, choosy, and discriminating about who they mate with than men? Do women place a greater premium than men on economic resources in a potential mate, as well as the qualities that lead to resources such as ambition, industriousness, social status, and older age? Do men place a greater premium than women on physical appearance, since appearance provides a wealth of cues to a woman's fertility and reproductive value? In the early 1980s, we did not know the answers to these questions.

My first empirical foray into this arena tested these predictions on samples of subjects from Cambridge, Massachusetts. I asked these individuals to evaluate how desirable each of 76 qualities was in a potential spouse, or someone they might marry. The sex differences emerged, precisely as predicted. Women valued financial resources in a mate significantly more than men did. They also valued qualities that tend to lead to such resources, such as ambition, industriousness, education, and social status. Men more than women valued good looks and physical attractiveness. Although I was delighted by this empirical confirmation, I realized that there were alternative interpretations of the sex differences, and furthermore, that perhaps these sex differences would be found only in the United State or at least only in Western cultures. When I showed these results to my colleagues in psychology and sociology, the dominant response was intense skepticism that these sex differences would prove to be universal. Some said that they were due to patriarchal social systems and would not be found in cultures where the sexes were more egalitarian. Some argued that they were products of Western media or American patterns of socializing children. None but the evolutionists predicted that they would be found in every culture.

UNIVERSAL SEX DIFFERENCES

Because of the strong anti-biological bias in the social sciences, I knew that I would have to conduct a study that exceeded most psychological studies in scope. In psychology, the empirical bar is always set higher for those who propose biological explanations of human behavior, since the default assumption in this century has been that all existing behavioral patterns are forged by the environment during a person's ontogeny.[8] In order to find out whether the sex differences in mate preferences that were documented in American samples were universal or prevalent across the globe, I established the International Mate Selection Project. Over the course of five years, roughly 50 research collaborators, most native residents of different cultures, translated the mate preference instruments, administered them to samples in their native cultures, and then sent me the data. When the dust settled, we had 10,047 participants from 37 different cultures located on six continents and five islands. The samples were diverse, representing different religions, ethnic groups, races, political systems, economic systems, and mating systems.

The samples, of course, were not random samples. They were biased toward the more educated, toward the young, and toward those living in cities. They were nonetheless exceptionally diverse. In the Venezuelan sample, for example, the research collaborator systematically sampled every fifth house from neighborhoods representing different socio-economic groups. The Zulu collaborator from South Africa ventured into shantytowns for data collection. Collaborators from some countries had to conduct the study in relative secrecy, since they lacked government approval. In a couple of cases, my research collaborators had to smuggle the data out of the country. Although the ages of the samples tended toward the young side, they ranged from 14 to 71 years, permitting us to evaluate whether mate preferences varied with age.

Not all of the results from this study confirmed the hypotheses. I had predicted that men would universally value virginity in a potential partner more than women, since virginity would presumably provide a powerful signal of paternity certainty to the man. In fact, this proved to be the case in only 62% of the cultures we studied.

In 38% of the cultures, the sexes did not differ with respect to this issue. Furthermore, the absolute value placed on virginity varied widely from culture to culture. Chinese participants viewed it as indispensable. Swedish and Dutch participants viewed it as irrelevant or unimportant. This suggests that men have evolved different solutions to the adaptive problem of paternity uncertainty. The study also found that men and women were highly similar in their desires for many qualities. Both sexes wanted mates who were kind, understanding, intelligent, exciting, healthy, and dependable. No one wanted mean, stupid, boring, disease-ridden partners.

Despite the sexual similarities on some qualities and the wide cross-cultural variability in how much other qualities were desired, two clusters of sex differences proved to be universal, precisely as predicted. Women more than men in all 37 cultures valued potential mates with good financial prospects. Men more than women across the globe placed a premium on youth and physical attractiveness, two hypothesized correlates of fertility and reproductive value. No longer could the sex differences in mate preferences be viewed as products of the media, Western culture, particular age groups, particular economic or political systems, or particular mating systems.

SHORT-TERM VERSUS LONG-TERM MATING

The findings that the predicted sex differences in mate preferences appeared to be universal emboldened me to explore several complexities of human mating, since documenting sex differences in what people want in a marriage partner merely scratches the surface of human mating. One issue that kept cropping up was the fact that not everyone was looking for a long-term mate. Mating relationships can last for a few months, a few days, a few hours, or even a few minutes. The ends of this temporal continuum can be labeled "short-term mating" and "long-term mating."

This temporal dimension was obviously critical. In long-term mateships, for example, both sexes invest heavily, so according to Trivers' theory of parental investment and sexual selection, both sexes should be highly discriminating about whom they mate with, and their standards should be similar. In the short-term mating context, on the other hand, men can get away with minimal investment, whereas women still risk investing tremendously. Sex differences in choosiness, therefore, should show up maximally in the short-term mating context, and minimally in the long-term mating context.

Research that David Schmitt and I conducted, as well as work by Doug Kenrick, robustly supported these predictions.[9,10] We asked samples of participants to judge how important each of 67 characteristics were in two contexts, as a short-term mate (defined as a one-night stand, brief affair, etc.) and as a long-term mate (defined as a marriage partner). The characteristics spanned a gamut of attributes ranging from adventurous, artistic, and athletic to stylish in appearance, understanding, and well-liked by others. On 41 out of the 67 characteristics, approximately two-thirds, men's standards for a short-term mate were significantly lower than women's standards. In a short-term mate men required lower levels of charm, athleticism, education, devotion, social skills, generosity, honesty, independence, kindness, intellectuality, loyalty, sense of humor, sociability, wealth, responsibility, open-mindedness, spontaneity, courteousness, willingness to cooperate, and emotional stability. There

were no characteristics for which men were more exacting than women in the short-term mating context. These findings confirmed the prediction that men, compared with women, relax their standards in short-term mating contexts.

The hypothesis of relaxed male standards in short-term contexts received independent confirmation.[10] Using a unique methodology, Kenrick and his colleagues asked participants to report on what their minimal levels of acceptability would be for characteristics such as intelligence and kindness in different types of relationships. They found that, although both sexes expressed high minimum standards in a marriage partner for these traits, the standards that men imposed for someone with whom they would just have sexual intercourse dropped dramatically, whereas women's standards remained uniformly high for such relationships.

We obtained similar results when we investigated characteristics that might deter someone from mating. Women were far more discriminating than men in the short-term mating context. Women more than men tended to reject short-term partners who were mentally abusive, physically abusive, bisexual, disliked by others, dumb, uneducated, old, possessive, promiscuous, self-centered, selfish, lacking a sense of humor, submissive, short, and wimpy. In the short-term mating context, men apparently are willing to lower their standards to embarrassing levels.

Theoretically, the average number of short-term partners should be identical for the sexes, assuming an equal sex ratio. The reproductive logic of men having evolved a powerful desire for short-term mating is clear. Ancestral men were limited in reproduction by the number of fertile women they could successfully fertilize, hence securing opportunistic copulations when the costs and risks were sufficiently low, would have added to a man's reproductive success. But what's in it for women? Why would a woman risk engaging in short-term mating?

Recently, Heidi Greiling and I have tested several families of hypotheses about the potential adaptive benefits to women of engaging in short-term mating. Symons was one of the first to propose several potential adaptive benefits.[4] He suggested that women might benefit in the following ways by sexual intercourse with men other than their husbands: by exchanging sex for meat, goods, or services (*resource accrual hypothesis*); by becoming impregnated by a man with better genes than her husband (*better genes hypothesis*); or by using the sexual intercourse to get rid of a husband (*mate expulsion hypothesis*), or to by acquire a better one (*mate switching hypothesis*) (see also the related hypotheses of Helen Fisher).[11] Additionally, Symons noted the possibility of a short-term affair by a woman as a revenge for her husband's affair, presumably functioning as a deterrent to his future affairs (*revenge hypothesis*).

Biologist Robert Smith articulated three additional potential benefits:[12] First, the *sexy son hypothesis,* which suggests that a woman, by mating with an especially attractive man, might bear sons who would themselves be especially attractive to women in the next generation and hence increase her production of grandchildren. Second, the *genetic diversity hypothesis* posits that a woman who mates with multiple men will bear children who are more genetically diverse, which could act as a hedge against environmental change. And, third, there is the *fertility backup hypothesis:* that a woman could benefit from an extra-pair mating if her husband were infertile, had reduced fertility, or where the couple had gametic incompatibility.[12]

Another potential benefit noted independently by Robert Smith[12] and Barbara Smuts[13] is the *protection hypothesis*. Men typically provide protection to their mates and children, including defense against predation by non-humans and defense

against exploitation by other humans. Because a primary mate cannot always be around to defend and protect, a woman might gain added protection by consorting with another man. Finally, Smith[12] proposed the *status enhancement hypothesis*, whereby a woman might, in principle, elevate her social status among her peers or gain access to a higher social stratum by a temporary liaison with a high-status man.

Several additional benefits have been proposed for women's short-term mating. Geoffrey Miller (personal communication) suggested that women might increase their skills of attraction and seduction through short-term mating (*honing mating skills hypothesis*). Miller (personal communication) and Thornhill[14] also proposed that women might use short-term mating to elevate their self-esteem, thus enabling them to make better mating decisions (*self-esteem hypothesis*).

Schmitt and I[9] proposed that women might use short-term mating as an assessment device to evaluate potential long-term mating partners (*mate assessment Hypothesis*). Greiling[15] proposed several other potential benefits. Women may use short-term mating to clarify their long-term mate preferences (*preference clarification hypothesis*), on the assumption that experience with short-term mates enables a woman to better identify desirable long-term mates. And a woman might use a short-term mating to increase the commitment of a regular mate or a mate with whom she is trying to secure a long-term relationship (*commitment hypothesis*).

Our tests of these hypotheses were necessarily preliminary and limited in many respects. (1) We asked women to evaluate the likelihood of receiving various benefits through extra-pair copulations, benefits such as dinners, sexual orgasms, boosts in self-esteem, revenge on their regular partner, and honing their skills of attraction and seductions. (2) In a separate study, we asked women to evaluate how beneficial each of these items would be, if they were received. (3) Next, we asked women to judge the contexts in which they would be most likely to seek an extra-pair copulation. (4) Finally, we separately explored the perceptions of benefits of extra-pair mating in women who actively pursued short-term matings and in those who did not.

One limitation of the method of inquiry is that women may be unaware of adaptive benefits. For example, when women evaluate an item like "securing orgasms" from affair partners they are in all likelihood unaware of possible *adaptive* benefits that they might obtain, such as an increased likelihood of successful fertilization.[16] Similarly, other hypotheses could not be tested directly, such as those involving better or more diverse genes. Nonetheless, these studies provide preliminary information on what women perceive as beneficial and the contexts in which they believe that they would pursue extra-pair copulations.

Two hypotheses received strong support across studies, the *mate switching hypothesis* and the *resource acquisition hypothesis*. Engaging in an extra-pair mating was perceived to make it more likely that a woman would find a partner whom she felt was more desirable than her current partner, and more likely that a woman would secure a back-up potential mate. Short-term extra-pair mating resulting in discovery of a sexual partner who was interested in a commitment to her, willing to spend a lot of time with her, and able to replace her steady partner was judged to be highly beneficial for women, if received through a short-term extra-pair mating. Contexts most likely to promote an extra-pair mating include a belief that she can find someone interested in her with whom she is more compatible than her current partner who is willing to spend a lot of time with her, and is better looking than her current partner.

These findings provide support for the hypothesis that mate-switching may be a key function of short-term mating for women.

Acquiring resources also emerges as one possible adaptive function of short-term extra-pair mating. Women judged that they are likely to receive jewelry, money, free dinners, or clothing by engaging in an extra-pair mating. These and the possibility of career advancement were judged by women as highly beneficial. Women who actually engaged in short-term extra-pair mating perceive the resource benefit as highly beneficial. Women judged that the likelihood of their engaging in extra-pair mating increased when the current partner could not hold down a job, when someone who has better financial prospects than her current partner and seems interested in her is accessible, and when someone who is more successful than her current partner is available.

Receiving sexual gratification also appears to be a key benefit that emerges across studies. Indeed, we found that the benefit judged to be most likely to be received by women is sexual gratification. Having a short-term partner who cuddled with her and with whom she experienced orgasms and sexual gratification was judged to be highly beneficial. Having a regular partner who was unwilling to engage in sexual relations with her, with whom sexual relations have been unsatisfying for a long time, or with whom sexual relations have been too infrequent were among the contexts most likely to be perceived as prompting a woman to have an extra-pair sexual relationship. Finally, women who engage in short-term mating perceive sexual gratification as more beneficial than women who tend to avoid short-term mating.

Despite the consistency of the importance of sexual problems prompting an affair and sexual gratification being a benefit of an affair, the current studies do not permit inferences about the precise adaptive function attached to sexual benefits. Over human evolutionary history, one benefit might have been a fertility backup. An ancestral woman paired with a man uninterested in sex may have had a more difficult time getting pregnant. If this is correct, then fertility backup is a possible function of women's short-term extra-pair mating. Alternatively, a partner's lack of sexual interest may signal to the woman that he is channeling his sexual interest and perhaps commitment elsewhere, in which case the woman might benefit by doing likewise. If this inference were correct, it would support one variant of the mate switching function. A third possibility is that the sexual gratification a woman might gain from an extra-pair mating is not a "function" at all, but instead merely a "beneficial effect" in current environments that do not provide the same adaptive impetus for short-term mating as prevailed in ancestral environments. The answer to which of these interpretations is correct must await future research.

Much work remains to be done on the underlying psychology and biology of short-term mating. What is clear at this point, is that there is abundant evidence that some women do engage in short-term mating some of the time, and likely have done so throughout human evolutionary history.

TACTICS OF HUMAN MATE-GUARDING: FROM VIGILANCE TO VIOLENCE

If women and men sometimes pursue extra-pair copulations, this imposes adaptive problems on their regular partners. An ancestral man who was indifferent to the

sexual contact his wife had with other men would have risked investing in a rival's children. An ancestral woman who was indifferent to the sexual contact her husband had with other woman might have risked the diversion of his resources to that other woman and that woman's children. The recurrence of the threat of infidelity should have selected for the co-evolution of mate-guarding tactics to prevent incurring the costs of a partner's infidelity (for literature on such evidence in animals, see Ref. 7).

Prior to studies conducted by evolutionary psychologists, dozens of empirical studies have explored the psychology of jealousy. The most common finding is that men and women do not differ in either the frequency or magnitude of the jealousy they experience. In one study, 300 participants who were partners in 150 romantic relationships rated how jealous they were in general, how jealous they were of their partner's relationships with members of the opposite sex, and the degree to which jealousy was a problem in their relationship. Men and women reported equal amounts of jealousy, confirming that both sexes experience jealousy roughly equally and do not differ in the intensity of their jealous feelings.[17]

According to an evolutionary psychological analysis, all these studies, although informative about the equality of the sexes in experiencing jealousy, had posed the question in too global a manner. An evolutionary analysis leads to the prediction that, although both sexes will experience jealousy, they will differ in the weighting given to the cues that trigger jealousy. Men are predicted to give more weight to cues of sexual infidelity, whereas women are predicted to give more weight to cues of a long-term diversion of investment, such as emotional involvement with another person.[18, 19]

In a systematic test of the hypothesized sex differences, 511 college students were asked to compare two distressing events: their partner having sexual intercourse with someone else, or their partner becoming emotionally involved with someone else.[19] Fully 83% of the women found their partner's emotional infidelity more upsetting, whereas only 40% of the men did. In contrast, 60% of the men experienced their partner's sexual infidelity as more distressing, whereas only 17% of the women did. This constitutes a huge 43% difference between the sexes in their responses, which is large by any standard in the social sciences. By posing a more precise question—not whether each sex experiences "jealousy," but rather which precise triggers of jealousy are more distressing—the evolutionary psychological hypothesis was able to guide researchers to discover a sex difference that had previously gone unnoticed.

Verbal reports are reasonable sources of data, but ideally, converging evidence from other data sources is more scientifically compelling. To explore the generality of the above findings across different scientific methods, 60 men and women were brought into a psychophysiological laboratory.[19] To evaluate physiological distress from imagining the two types of infidelity, the experimenters placed electrodes on the corrugator muscle on the brow of the forehead, which contracts when people frown; on the first and third fingers of the right hand to measure sweating, that is, the electrodermal response (also known as GSR or galvanic skin response); and on the thumb to measure heart rate. Participants were then asked to imagine either a sexual infidelity ("imagine your partner having sex with someone else … get the feelings and images clearly in mind") or an emotional infidelity ("imagine your partner falling in love with someone else … get the feelings and images clearly in mind"). Subjects pressed a button when they had the feelings and images clearly in mind, which activated the physiological recording devices for 20 seconds.

Men became more physiologically distressed by the sexual infidelity than by the emotional infidelity. Their heart rates accelerated by nearly five beats per minute, which is roughly the equivalent of drinking three cups of strong coffee at one time. Their skin conductance increased 1.5 μS (micro-Siemens) with the thought of sexual infidelity, but showed almost no change from baseline in response to the thought of emotional infidelity. Their corrugator frowning increased, showing 7.75 μV (microvolt; as a measure of contraction) in response to sexual infidelity, as compared with only 1.16 μV in response to emotional infidelity.

Women tended to show the opposite pattern. They exhibited greater physiological distress at the thought of emotional infidelity. Women's frowning, for example, increased to 8.12 μV of contraction in response to emotional infidelity, as compared with only 3.03 μV in response to sexual infidelity. The convergence of psychological reactions of distress with physiological patterns of distress in men and women strongly supports the hypothesis that humans have evolved mechanisms specific to the sex-linked adaptive problems they recurrently faced over evolutionary history.

These sex differences have now been replicated in Germany, the Netherlands, Korea, and Japan. The magnitude of the sex difference varies somewhat from culture to culture, large in Korea and Japan and smaller in the Netherlands, but the sex difference remains robust across cultures. In sum, men's jealousy appears to be more sensitive to cues of sexual infidelity and women's jealousy more sensitive to cues of emotional infidelity—these results were found across both psychological and physiological methods as well as across cultures.

The psychology of jealousy produces behavioral output that is presumably designed to deter a regular partner from leaving or committing infidelity that ranges from vigilance to violence.[20] Men tend to engage in intense mate-retention efforts when they are married to partners who are young and physically attractive, two hypothesized cues to a woman's reproductive value and appeal to rivals. Women tend to engage in intense mate-retention efforts when they are married to men who have high incomes and who devote a lot of effort to status-striving, both constituting high mate value. Violence toward partners is an extreme mate-retention tactic, used by men more than women, and tends to be most used by men who lack the economic means to keep a mate through positive incentives.[21]

CONCLUSIONS

Human mating is close to the engine of evolution—differential reproductive success caused by differences in design. Ancestral humans had to solve an astonishing variety of adaptive problems to successfully reproduce. They had to select specific partners, such as those that were reproductively valuable, to best intra-sexual rivals in competing for desirable mates, and to retain mates by continuing to fend off rivals and deterring their mate's attempts to defect. Those who failed at these tasks are not our ancestors. We are the descendants of those who succeeded in overcoming these many hurdles, or at least overcoming them more adeptly than others.

Human mating defies simple characterization. Some continue to argue that people are fundamentally evolved to be monogamous, and that any deviation from monogamy represents a distortion from the basic human mating strategy. Others argue

that humans are naturally promiscuous, and that marriage represents an unnatural cultural imposition. Both of these simplistic notions are wrong, at least according to the evidence now available.

Men and women both have short-term and long-term mating strategies within their menu of mating. Which strategies a particular individual pursues depends on contexts, including the sex ratio in the mating pool and the person's desirability, both determining the range of alternatives available. In addition, there are various cultural practices such as laws about who may mate with whom, and the strategies pursued by others in the population. Some individuals sustain or endure lifelong monogamy. Some bounce from mate to mate. Some pursue a mixed mating strategy, with one or more long-term mates along with or alternating with some short-term mating on the side.

The field has come a long way from the pre-evolutionary era in which singular mating motives were posited (e.g., similarity, equity) without an underlying logic and the sexes were regarded as identical in their mating psychology. The conceptual and empirical gains of evolutionary psychology have been substantial. But there remains much work to be done on the details of the underlying psychological mechanisms, the contexts that trigger the activation of each, the role of heritable individual differences, and the underlying neurobiology of these mechanisms. If the next decade offers as much progress as the preceding one, we can look forward to substantial developments in our understanding of the psychology of human mating.

REFERENCES

1. DARWIN, C. 1871. The Descent of Man and Selection in Relation to Sex. Murray. London, England.
2. TRIVERS, R. 1972. Parental investment and sexual selection. *In* Sexual Selection and the Descent of Man: 1871–1971. B. Campbell, Ed.: 136–179. Aldine. Chicago, IL.
3. HAMILTON, W.D. 1964. The evolution of social behavior. J. Theor. Biol. **7:** 1–52.
4. SYMONS, D. 1979. The Evolution of Human Sexuality. Oxford. New York.
5. ECKLAND, B. 1968. Theories of mate selection. Soc. Biol. **15:** 71–84.
6. CLUTTON-BROCK, T.H. 1991. The Evolution of Parental Care. Princeton University Press. Princeton, NJ.
7. ALCOCK, J. 1998. Animal Behavior. An Evolutionary Approach, 6th ed. Sinauer. Sunderland, MA.
8. TOOBY, J. & L. COSMIDES. 1992. Psychological foundation of culture. *In* The Adapted Mind: Evolutionary Psychology and the Generation of Culture. J. Barkow, L. Cosmides and J. Tooby, Eds.: 19–136. Oxford University Press. Oxford, England.
9. BUSS, D.M. & D.P. SCHMITT. 1993. Sexual strategies theory: an evolutionary perspective on human mating. Psychol. Rev. **100:** 204–232.
10. KENRICK, D.T., E.K SADALLA, G. GROTH & M.R. TROST. 1990. Evolution, traits, and the stages of human courtship: qualifying the parental investment model. J. Pers. **58:** 97–116.
11. FISHER, H. 1992. The Anatomy of Love. Norton: New York.
12. SMITH, R.L. 1984. Human sperm competition. *In* Sperm Competition and the Evolution of Mating Systems. R.L. Smith, Ed.: 601–659. Academic Press. New York.
13. SMUTS, B.B. 1985. Sex and Friendship in Baboons. Harvard University Press: Cambridge, MA.
14. THORNHILL, N.W. 1992. Female short-term sexual strategies: the self-esteem hypothesis. Paper presented at the Human Behavior and Evolution Society.
15. GREILING, H. 1993. Women's short-term sexual strategies. Paper presented at the Conference on Evolution and the Human Sciences, London School of Economics. London, England.

16. BAKER, R. & M. BELLIS. 1995. Human Sperm Competition. Chapman Hall. London.
17. WHITE, G.L. 1981. Some correlates of romantic jealousy. J. Pers. **6:** 222–227.
18. DALY, M., M. WILSON & S.J. WEGHORST. 1982. Male sexual jealousy. Ethol. Sociobiol. **3:** 11–27.
19. BUSS, D.M., R.J. LARSEN, D. WESTEN & J. SEMMELROTH. 1992. Sex differences in jealousy: evolution, physiology, and psychology. Psychol. Science **3:** 251–255.
20. BUSS, D. M. 2000. The Dangerous Passion. Free Press. New York.
21. DALY, M. & M. WILSON. 1988. Homicide. Aldine. Hawthorne, NY.