

The Evolution of Human Mate Choice

Remy Roizen

Throughout history, the process of mate selection has been a popular topic in the field of evolutionary psychology. While the urge to mate is a universal impulse among all people across cultures and is undeniably evolutionary in origin, engaging in such behavior ultimately leads people to the issue of mate choice. Darwin was the first to show that mate preferences could affect human evolution and many evolutionary psychologists and sociologists have based their studies on Darwinian sexual selection. In his book, *On the Origin of Species*, Darwin declared:

Thus it is, as I believe, that when the males and females of any animal have the same general habits of life, but differ in structure, colour, or ornament, such differences have been mainly caused by sexual selection; that is, individual males have had, in successive generations, some slight advantage over other males, in their weapons, means of defence, or charms; and have transmitted these advantages to their male offspring. (Chapter 4, p. 90)

Thus, Darwin's theory showed the evolution of certain characteristics that grant a reproductive advantage to a particular species, as opposed to those characteristics that confer an advantage for survival. Consequently, evolutionary psychologists have attempted to apply Darwin's theory to humans and have studied the evolutionary basis for mate selection.

Nevertheless, Darwinian sexual selection had a number of shortcomings, which have since been studied by evolutionary psychologists. While Darwin argued that males tend to compete for the attention of females, recent studies have suggested that human females are also competitive for access to mates. Thus, evolutionary psychologists acknowledge mate selection to be a bidirectional process in which both sexes engage in certain behaviors in order to choose an appropriate mate. Darwin's theory was also controversial for he simply stated that females desire males with certain characteristics,

rather than identifying how such desires might have emerged and how they are maintained within a population.

In 1972, Robert Trivers attempted to address Darwin's shortcoming by accounting for the evolutionary motivation behind the process of mate selection. He proposed his theory of parental investment, in which he determined that the sex who invests most in its young will prove to be more selective in its mate choice. Trivers argued that the relative parental investment would influence the way in which each sex engaged in the processes of sexual selection. He contended:

Specifically, the sex that invests more in offspring is selected to be more discriminating in choosing a mate, whereas the sex that invests less in offspring is more competitive with members of the same sex for sexual access to the high-investing sex. (Buss, *The Strategies of Human Mating*, 240)

Thus according to parental investment theory, females are clearly the sex that invests more in its offspring and thus will be more discriminatory when choosing a mate. The minimum parental investment by a woman would be the nine-month gestation period, which occurs after fertilization, followed by lactation, which can last several years. For men, however, the minimum parental investment could be reduced to the contribution of sperm, which can require as little time as a few minutes. Thus, based on the discrepancy regarding parental investment, Trivers' theory assumes that while women will be more choosy in finding a mate than men, women will also look for mates who are willing to commit time and resources to her and their offspring.

David Buss published an article entitled "The Strategies of Human Mating" (1994) in which he developed his Sexual Strategies Theory based on Trivers' theory of

parental investment. After surveying mate preferences of more than 10,000 people in 37 cultures, Buss and his colleagues determined that “human beings, like other animals, exhibit species-typical desires when it comes to the selection of a mate” (American Scientist, Volume 82, page 238). Buss and his colleagues discovered patterns of mating behavior that existed across cultures, leading them to the conclusion that such behaviors exist because they are evolutionary advantageous. Thus, Buss’ theory, like Darwin’s, argues that sexual strategies of our ancestors evolved because they ensured their ability to survive and produce offspring. Ultimately, those who failed to mate successfully had not exhibited such behaviors.

Buss based his theory of sexual strategies on three main principles: first, that human mating is inherently strategic. Buss and his colleagues argue that the strategies exist because they solved certain problems that emerged throughout human evolutionary history. Furthermore, the manifestations of these strategies are not conscious, for we are often unaware of why we find certain qualities attractive in a mate. A second component of the theory is that mating strategies are context-dependent, for people behave differently in the prospect of choosing a long or short-term mate. The final principle of Buss’ theory is that men and women have evolved different mating strategies based on the different mating problems each sex has encountered throughout history.

Based on these stipulations, Buss’ sexual strategies theory consists of nine hypotheses, which delineate sex differences with regard to mating strategies. The first hypothesis states that “short-term mating is more important for men than for women” (242). This hypothesis stems from Trivers’ parental investment theory, for since men can

reduce their parental investment to the absolute minimum and still produce offspring, short-term mating should be a key component of men's sexual strategy. Based on these assumptions, Buss hypothesized that men would be much more interested in pursuing a short-term mate than women. In testing this hypothesis no college students, men reported a significantly greater interest in seeking a short-term sexual partner than women (an average rating of about 5 to 3, respectively). Furthermore, the results also showed that men were generally more interested in seeking a short-term mate rather than a long-term one, while the opposite was true for women.

Based on these findings, Buss and his colleagues also predicted that men will desire a greater number of mates than women. The same group of college students was asked how many sexual partners they would ideally like to have during a given time interval and throughout their lifetimes. For every interval of time, men consistently reported that they desired a greater number of sex partners than did women. For example, throughout the course of a lifetime, the average man reported they would like to have about 18 sex partners while the average woman reported wanting no more than 4 or 5 partners.

A third prediction emerged from these results, namely that men are more willing to engage in sexual intercourse a shorter period of time after first meeting a potential sex partner. A unique study was conducted at the University of Hawaii in which college students were approached by an attractive member of the opposite sex and asked one of three questions: "Would you go out on a date with me tonight?" "Would you go back to my apartment with me tonight?" or "Would you have sex with me tonight?" (Buss, 242)

Of the women who were approached, 50% agreed to the date, 6% agreed to go home with the man and none agreed to have sex. Furthermore, many of the women found the sexual request from a stranger to be odd or insulting. Of the men approached, however, 50% agreed to the date, 69% agreed to go home with the woman and 75% agreed to have sex with the confederate. The majority of the men polled found the sexual request very flattering and those men who declined the request for sex were apologetic about it, citing a fiancée or an unavoidable obligation that evening. Clearly, men prove to be more promiscuous than do women.

Though men tend to seek short-term mates more than women do, women seeking a short-term mate will choose a man who is willing to impart immediate resources. Men and women face different problems regarding reproduction, for when a woman chooses a mate, she must be sure that this is in fact the person she wants to have offspring with. For even if she has 100 mates within one year, she will only be able to reproduce with one of them. Under these same conditions, however, men can produce 100 offspring with each different woman in a given year. Consequently, Buss describes that:

In species where males invest parentally in offspring, where resources can be accrued and defended, and where males vary in their ability and willingness to channel these resources, females gain a selective advantage by choosing mates who are willing and able to invest resources. (248)

Thus, females who choose mates who have such resources ensure the survival and reproductivity of their offspring, for they will be afforded more material advantages.

In order to test this hypothesis, Buss and his colleagues asked 50 females subjects to evaluate the desirability of certain characteristics in both a short-term and long-term

mate. The results showed that, given the context of short-term relationship, most women valued a mate who would “spend a lot of money early on, give gifts early on and has an extravagant lifestyle” (248). Thus, when it comes to short-term mating, women value signs that a man will immediately expend resources on them. Scientists also concluded from this study that women especially dislike men who are stingy early on in a relationship. While this quality is also undesirable in a long-term mate, women declare stinginess to be significantly more undesirable in a short-term mate.

In the context of a short-term relationship, Buss also contends that “women will be more selective than men in choosing a short-term mate” (248). This argument emerges based on the fact that women use short-term mating to evaluate prospective long-term mates. Based on this assumption, Buss et al. hypothesized that women will not choose a man as a short-term mate if that man is involved in another relationship. In a comparative study of 42 men and 44 women, the majority of women were significantly more reluctant to choose a mate who is simultaneously involved with someone else. The evolutionary basis for this difference can be traced to women’s desire for a mate’s resources. If a woman enters into a short-term relationship, she wants her mate to impart his resources for their offspring immediately. If that mate, however, has another mate and other offspring to provide for, his resources would thereby be limited and he may not be able to be as supportive of his new child.

Based on these findings, Buss also predicted that women would dislike short-term mates who are promiscuous. Because women use short-term mating to evaluate the future stability of a particular mate, promiscuity indicates that a man is less likely to

commit to a long-term relationship. Thus, a man who is promiscuous gives an immediate signal to a prospective mate that he is not interested in anything long-term and is likely to have other mates with whom their offspring will compete for his resources. In the same sample of 42 men and 44 women, men found promiscuity to be of neutral value in a short-term mate while women rated the trait as moderately undesirable.

Similarly, hypotheses 4 and 5 of sexual strategy theory focus specifically on the characteristics men seek in a short-term mate versus that of a long-term mate. Buss argues that “men seeking a short-term mate will solve the problem of identifying fertile women, whereas men seeking a long-term mate will solve the problem of identifying reproductively valuable women” (243). While fertility refers to the probability that a woman is currently able to conceive a child, reproductive value is defined according to expected future reproduction. For example, a 15 year-old woman has a higher reproductive value than a 25 year-old woman because her future contribution to the gene pool is higher on average. A 25 year-old woman, however, is more fertile than the 15 year-old because her current probability of reproducing offspring is greater.

Since these qualities are difficult qualities to differentiate by looking at someone, men tend to be sensitive to cues that might be indicative of a woman’s fertility and reproductive value. Similarly, though men prefer younger women for both long and short-term mates, age is not something that can be observed directly. As women age, their skin tends to wrinkle, lips become thinner, hair turns gray, facial features become less regular and muscles lose tone. Thus, Buss argues that “men could solve the problem of identifying reproductively valuable women if they attended to physical features linked

with age and health, and if their standards of attractiveness evolved to correspond to these features” (244). While reproductive value is important for men in identifying a mate, however, the same does not hold true for women. Because a man’s reproductive capacity is less closely linked with age and cannot be accessed as accurately from appearance, women tend to be less concerned with the youthfulness and physical attractiveness of a mate.

Similarly, an adaptive problem that is faced by men and not women, however, is that of paternity confidence. The 6th hypothesis of Buss’ sexual strategies theory declares that “men seeking a long-term mate will solve the problem of paternity confidence” (246). Paternity confidence refers to the fact that when a woman is pregnant, she is always certain that the child is her own. A man, however, does not have that same confidence, especially if his mate has many other mates. In order to assess this issue, Buss and his colleagues considered three possibilities: first they examined the desire for chastity in a mate, second, the desire for fidelity in mates, and last, the jealous guarding of mates to prevent sexual contact with other men.

Buss and his colleagues conducted an international study in which they examined men and women’s desire for chastity when choosing a potential marriage partner. Such a trait, however, proved to be highly variable across cultures. While in the Netherlands and Scandinavia both sexes regard chastity as an irrelevant quality when choosing a mate, Chinese men and women both agree that chastity is an indispensable quality when selecting a mate. Nevertheless, in about two-thirds of the cultures surveyed, men tend to desire chastity in a potential mate more than women do. Such sex differences are

particularly strong in Indonesians, Palestinian Arabs and Iranians. In the remaining one-third of societies, no sex differences were identified. In no culture, however, do women desire virginity in a mate more than men. Ultimately, “where there is a difference between the sexes, it is always the case that men place a greater value on chastity” (246).

While chastity has shown to be important for men in identifying a mate, fidelity seems to play an even greater role. In a cross-cultural study conducted by Betzig, she found that the most prevalent cause of divorce was sexual infidelity. Nevertheless, she discovered that such infidelity was highly sex-linked, for a woman’s infidelity was considerably more likely to lead to divorce than a man’s infidelity. Betzig’s study concluded that “compromising a man’s certainty in paternity is apparently seen worldwide as a breach so great that it often causes the irrevocable termination of the long-term marital bond” (246).

Similarly, Buss and Schmitt studied the importance of fidelity among American college students. Their results found that fidelity is the characteristic most valued by men in a long-term mate. Though a mate’s fidelity is also a very important quality for women, it ranks only third or fourth in importance behind such qualities as honesty. In order to assess American men and women’s attitude toward chastity, Buss asked 44 men and 42 women to rate the desirability of promiscuity and sexual experience in a mate. While both characteristics were significantly more valued in a short-term mate, men find promiscuity in a short-term mate only mildly desirable. Such characteristics, however, were clearly undesirable in a long-term mate. Furthermore, women find promiscuity to be an extremely undesirable characteristic in either context. Prior sexual experience did

not play much of a factor in either case unless it was directly linked to promiscuous behavior. Based on both of these studies, it seems that American men tend to care more about a mate's future fidelity than prior abstinence. Furthermore, it seems that promiscuity would be especially undesirable in a long-term mate for such behavior could signal future infidelity.

Because of the emphasis placed on fidelity in choosing a mate, particularly by men, scientists have been compelled to study the role of jealousy in both sexes. In a study conducted by Buss, Larsen, Semmelroth and Westen, college students were asked to imagine two scenarios: first, that their partner was having a sexual relationship with someone else, or that their partner was falling in love with someone else. The majority of men reported that they would be more upset if their mate had had sexual intercourse with another man. The majority of women, however, reported that they would be more upset if their partner formed a deep emotional attachment to another woman.

In order to assess the validity of this study, Buss et al. posed the same two scenarios to another group of 60 men and women, but this time, they recorded people's physiological responses to this question. The researchers "placed electrodes on the corrugator muscle in the brow (which contracts during frowning), on two fingers of the right hand to measure skin conductance (or sweating), and the thumb to measure heart rate" (247). Their results strongly supported the findings from the previous study, for the men became physiologically more distressed by the thought of their mate's sexual infidelity as opposed to emotional infidelity. Women, however, showed the opposite pattern.

After Darwinian sexual selection began to be applied to human behavior, many theorists suggested that jealousy may have given our ancestors a fitness advantage. Because the selective pressures regarding survival and reproduction tended to be different for men and women, jealousy came to be regarded as having a different character in men than in women. Currently, there is great debate over the evolutionary basis of jealousy, for many scientists argue in favor of an innate module – a wired-in brain circuit that has different primary triggers in men and women.

Scientists have focused on the Pleistocene Epoch to show the evolutionary development of jealousy in both men and women. Buss, along with several other evolutionary psychologists, argue in favor of the Specific Innate Module Theory, in which a specific set of brain circuits guides our emotional reaction to threats in the context of sexual relationships. Based on this emotional-cognitive module, scientists argue that men are “innately predisposed to jealousy over a mate’s *sexual* infidelity” while women are predisposed to be jealous over a mate’s emotional infidelity (Harris, 64). Thus, they argue that the different responses demonstrated by each sex emerged as a result of the inclusive fitness risks faced during the Pleistocene Epoch. Unlike women, men faced the risk of paternity confidence and were never really sure whether their mate’s offspring belonged to them. While the importance of paternity confidence has signaled the evolutionary basis for the emphasis placed on fidelity when choosing a mate, jealousy has also developed as a means of ensuring paternity confidence. In order to avoid the insecurity associated with paternity confidence, men have evolved a response mechanism to ensure that their mate is not mating with other men.

Thus, scientists argue that the male brain has been shaped by natural selection “to respond specifically to sexual infidelity with intense jealousy – an emotion that would motivate actions to defend against cuckoldry” (64). Furthermore, such jealous responses continue to thrive as a result of Darwinian natural selection; for mutations that increase fitness are favored and ensure survival, guaranteeing that future generations inherit these mutations from those successful individuals.

Because women did not experience such risks, our ancestors did not develop a similar jealous response to sexual infidelity. Women, however, faced the threat that a mate may leave them for another woman, thus depriving her offspring of necessary resources. Because child rearing required years of care, a long-term mate who could provide such resources was the ideal partner to ensure the survival of offspring. Thus, according to Buss et al.’s theory, “women developed an innate psychological module that is particularly sensitive to emotional infidelity” (64).

Christine Harris, a professor at the University of California, San Diego, argues that recent evidence suggests that, men and women, facing different selective pressures throughout history, have not developed different types of jealousy. Though Harris acknowledges that jealousy could be an innate and adaptive emotion, she nevertheless argues that jealousy may be better explained by social-cognitive approaches and through developmental theory.

In her essay entitled, “The Evolution of Jealousy”, Harris doubts Buss’ evolutionary argument and scrutinizes the self-report studies which scientists have relied on to prove their theory. Referencing Buss’ forced-choice method, in which he asked

male and female subjects to determine which type of infidelity would bother them most, sexual or emotional, Harris acknowledges that about 70 percent of American women indicate that emotional infidelity is most upsetting, whereas more men report sexual infidelity to be worse. In order to assess this data, Harris conducted a meta-analysis in which she found that the sex effect as described by Buss “is robust and moderate in size but tends to be smaller among older subjects or in samples that include homosexuals” (65). Harris also found this sex effect to exist in other countries, however, in comparison to their U.S. counterparts, “far fewer European or Asian men seem to choose sexual infidelity as worse” (65). Thus, the cultural effect uncovered by Harris, proved to be equal in size to that effect of sex.

Furthermore, Harris that the sex effect, which Buss identified, may be a result of the different conclusions men and women make regarding the hypothetical scenario of a mate’s infidelity. These inferences led scientists to suggest a “double-shot” hypothesis, arguing that:

Men tend to think sexual infidelity would be more distressing because they infer that if a woman has sex with another man, she is probably also in love with him. Women tend to believe that men can have sex without being in love. Hence, sexual infidelity does not necessarily imply emotional infidelity. Instead, women reason that a man in love is likely to be having sex, and therefore they choose emotional infidelity as worse. (65)

The evidence surrounding this hypothesis, however, is mixed and can thus not completely account for the sex difference that exists.

Thus, David DeSteno and his colleagues at Northeastern University decided to take another approach in exploring the sex differences that emerge as a result of the

forced-choice question. DeSteno et al. hypothesized that:

If sex differences reflect wired-in, sex-specific evolved modules, then depriving people of the opportunity to reflect on the choice should increase the sex difference, polarizing the responses of men and women. (65)

Thus, they imposed a “cognitive load manipulation” on their subjects by asking each of them to remember a seven-digit number while simultaneously answering questions. By preoccupying people’s minds with remembering the number, DeSteno and his colleagues thought that the answers people would give would be more reflective of their actual feelings, rather than giving responses they thought they should give. While the cognitive load did not change males’ responses, females did change their responses, identifying sexual infidelity as the more powerful jealousy trigger. Ultimately, DeSteno’s study suggests that females’ responses to the forced-choice method reflect a natural tendency of subjects to give answers that reflect a certain impression of themselves. Though Buss’ forced choice method does reveal sex differences, it is nevertheless unclear that this difference reveals some innate bias, rather than some other, more cognitive difference.

Scientists have also questioned the validity of Buss’ study of people’s physiological responses to the two types of infidelity. While Buss’ study, mentioned earlier in this paper, reconfirmed the verbal responses he had received, scientists argue that physiological responses can be misleading. Because physiological arousal can reflect a variety of emotions, it is difficult to isolate specific emotions, which are being triggered. This is one reason why lie detectors are considered unreliable and inadmissible in a court of law. The rises in blood pressure, increases in heart rate and sweating, which Buss cited, are a consequence of various emotional states, namely fear, anger and sexual

excitement. Thus, because subjects in Buss' study are only imagining infidelity, many scientists argue that the physiological reactivity that Buss noted, may have been a reflection of other emotional or cognitive states.

Harris references one study conducted at the University of California, San Diego, in which researchers replicated Buss' study. The lab found that:

Men showed the same degree of increased physiological reactivity when they imaged *themselves* having sex with their girlfriends as they experienced when imagining someone else having sex with their girlfriends – that is, the same increase relative to their responses to imagined emotional entanglements. (66)

Thus, men's increased physiological reactivity may reflect sexual arousal rather than, or in addition to, jealousy. Furthermore, women showed a similar pattern of arousal to that of men, for women who had actually had sexual relationships showed greater arousal when imaging their partner's sexual infidelity. Ultimately, the physiological responses provide ambiguous data: for scientists cannot be certain that the emotion being tested is, in fact, jealousy.

Furthermore, scientists have doubted whether jealousy emerges in the context of sexual relationships, for many suggest that jealousy evolved as a response to competition between siblings. From birth, siblings compete for a parent's resources and attention, thus scientists have suggested that the jealousy that emerges from this context is later usurped for the purpose of keeping friends and mates together. Much of this evidence emerges from studying certain types of animals, for in several avian species that typically have a clutch size of two, the older sibling routinely kills the younger one. Such instances of siblicide also occur in other avian species when an older chick is not

receiving enough food to maintain its body weight.

While similar studies have been conducted regarding sibling rivalry in children, the experimental investigation of the ontogeny of jealousy is still in its early stages. It is a common occurrence that when a new sibling enters a family, the older child, usually a toddler, often displays an array of negative emotions. Furthermore, parents are often distracted and preoccupied with the new child, thus causing their interaction with the older child to be less positive. Harris argues that “although changes in parental behavior clearly contribute to the child’s distress, it appears that jealousy in infants can be elicited simply by a parent directing attention to another” (71).

Similarly, Sybil Hart, a professor at Texas Tech University, found that infants as young as six-months who did not have siblings, displayed greater negative facial expressions when their mothers interacted with a lifelike baby doll. These reactions were not consistent, however, when their mother played with a nonsocial toy. In another study, eight-month olds both verbally and physically attempted to distract their mothers and get them to stop interacting with another child. These findings suggest that “complex cognitions are not needed to elicit at least some primitive form of jealousy in infants” (71). With development, however, social and cognitive factors become increasingly more important in determining which behaviors elicit a jealous response.

Nevertheless, this research raises the issue of whether these behaviors displayed by infants can be labeled as jealousy or whether they are merely signs of distress. Similar issues confront the research on adults, for scientists question whether jealousy is a basic emotion, a combination of various negative emotions or a label for a particular social

situation. Thus, more research must be conducted on the subject in order to determine whether jealousy is rooted in our evolutionary development.