Human Mate Guarding

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Submitted: *September 4, 2002*
Accepted: *September 6, 2002*

Key words: **mating; jealousy; conflict; mate guarding**

Neuroendocrinology Letters 2002; ***23****(Suppl.4):23–29 pii: NEL231002R02* *Copyright © Neuroendocrinology Letters* ***www.nel.edu***

Abstract Long-term committed mating is a fundamental strategy in the human repertoire. Successful enactment of this strategy requires solving two related adaptive problems – fending off potential mate poachers and preventing a mates from defecting. Mate guarding adaptations evolved to solve these persistent problems. Those who failed in mate guarding risked suffering substantial reproductive costs ranging from genetic cuckoldry to reputational damage to the entire loss of a mate. Because the precise nature of the adaptive problems confronted differed historically for the sexes, men and women evolved corresponding differences in the underlying psychology of mate guarding. Men's mate guarding, relative to that of women's, is strongly triggered as a consequence of being mated to young and physically attractive women, being confronted by interested rivals who have superior economic resources or prospects, and having a mate who displays signs of sexual involvement with a rival. Women's mate guarding, relative to that of men's, is triggered as a consequence of being mated to men high in income and status striving, rivals who are more physically attractive, and having a partner who shows signs of emotional involvement with another woman. Behavioral output of mate guarding adaptations range from vigilance to violence.

Human Mate Guarding

Reproductive conflicts between individual males and females can occur at every stage of the mating process [1]. Initial clashes take place between individuals when one is interested in mating and the other is not. Among courting pairs, disagreements can emerge over the timing of intercourse, the magnitude of commitment, and the amount of resources that flow between the two. Among already mated pairs, conflict can ensue over the disbursement of reproductively relevant resources to others outside the mateship, including extra-pair mates or genetic relatives. Conflict also emerges over terminating the mateship, when one wants to end it and the other does not. All these conflicts occur because the deployment of a successful reproductive strategy by one individual can interfere at multiple points with the reproductive strategy pursued by the other – a phenomenon called "strategic interference" [2].

This paper focuses on the cluster of conflicts centering on "mate guarding." Mate guarding refers strategies designed to (a) preserve access to a mate while simultaneously (b) preventing the encroachment of intrasexual rivals, and (c) preventing a mate from defecting from the mateship [3]. Adaptations for mate guarding evolved in humans for two fundamental reasons. First, "mate poachers" some-

REVIEW ARTICLE

times attempt to lure an already mated individual for a brief sexual liaison, an affair, or a permanent mateship. Second, mates sometimes become tempted to defect to another partner or leave to prospect for a better partner. Strategies of mate guarding evolved to solve these problems – to curtail, slow, or prevent mate poaching or a mates' defection while maintaining one's own access the reproductively relevant resources of one's mate.

Mate guarding adaptations have been discovered in males of an astonishing variety of species, from insects to mammals. One common strategy is the *concealment of mates from intrasexual competitors* [4]. Concealment is usually accomplished through one of three means – removing the mate from the vicinity of rivals, producing signals that mask the attractant signals of the mate, and muting the conspicuousness of courting and copulation to evade detection by rivals. Among certain butterflies, for example, the male that succeeds in courting a female will fly away with his partner suspended beneath him, taking her away from any other males that are present. Among certain bark beetles, bees, and moths, successful males release a scent that repels other males, makes the mate less attractive to other males, or masks her scent entirely [5]. The third concealment strategy – the reduction of conspicuous displays – occurs among crickets and katydids. The initially noisy courtship calls quickly become muted to "a softer courtship chatter" when a male succeeds in attracting a female [6]. The strong human desire for privacy during sexual intercourse may reflect a strategy that functions to reduce the conspicuousness of mating, and hence to avoid the potential intrusion or disruption by others. All of these concealment strategies reduce the likelihood that a rival will usurp the guarded mate.

A second general strategy of mate guarding found in the animal and insect world is the *physical prevention of takeovers* [7]. Certain male beetles and grasshoppers, for example, maintain close contact with the female prior to copulating, positioning themselves to prevent other males from gaining proximity to her. In the veliid water-strider, males ride on the backs of their mates for hours or days, even while not engaged in copulation, to prevent the encroachment of other males. In other species, males physically fight with rival males to prevent a takeover. In some species of locusts, a male seeking to mate poach sometimes picks up the trail of an about-to-mate pair that has recently departed the vicinity. When he comes upon the couple, the mated male turns and literally wrestles with the newly-arrived male. Although the attempt to physically repel the poacher is sometimes successful, the physical engagement sometimes leaves the female vulnerable to a third male who poaches while the resident male is busy fending off the initial rival. Some males build a "fence" around the female to physically prevent other males from gaining sexual access.

Humans, of course, differ from insects, and indeed, from all other mammals, in countless ways. The value of drawing attention to the various evolved solutions that function as mechanisms of mate guarding is to highlight the fact that many, perhaps all, sexually reproducing species confront the adaptive problem of mate poachers. And there are certain excellent regions in mate guarding "design space," that is structurally similar solutions that have been discovered by a variety of different species, including humans.

The Costs of Mate Guarding Failure

Reproductive costs can be steep for those who fail at mate guarding [8]. For men, a single failure at mate guarding could result in genetic cuckoldry, as happens when man's wife becomes fertilized by a rival man's sperm. In addition to the direct loss of opportunity for reproduction, the husband risks investing years or decades of his own effort in a rival's child in the mistaken believe that the child is his own. To compound these reproductive losses, his wife's maternal efforts now benefit his rival's child rather than his own. Furthermore, if the lapse becomes public, the cuckolded man risks damage to his social reputation, which could bring about a decrement in mate value, a loss of status, and an increased future vulnerability to other mate poachers. Finally, the cuckolded man suffers opportunity costs – matings that he could have pursued as alternatives had he not engaged in this particular mateship. Large are the potential reproductive costs of a single lapse of mate guarding.

Failure at mate guarding can also result in the permanent defection of a man's partner. If a man's partner leaves him, he loses access entirely to her future reproductive value. He loses whatever maternal efforts she would have brought to bear on his future children. He risks losing access to social alliances that she brought to the mateship. And she carries with her personal information about his habits, strengths, weaknesses, and vulnerabilities – information that could be exploited to advantage by an intrasexual rival to whom she disseminates the information.

Women too suffer reproductive costs from failing to guard their partners. A single lapse may be less costly to women than to men, since women do not risk genetic cuckoldry, as men do. Internal fertilization guarantees the woman that she is the mother of her children, regardless of her partner's sexual infidelities. Nonetheless, it is known that men channel resources to women with whom they have sex, and so women who fail at mate guarding risk the loss of those resources. Like men, women suffer an increased risk of contracting a sexually transmitted disease, passed from her husband's mistress to her. If her partner leaves the relationship, she risks a total loss of his resources, all of which can get redirected away from her and her children and toward his new mate and her children. Although the damage to her reputation is likely not to be as heavy as the corresponding damage to a cuckolded man's reputation, it can be damaged nonetheless, as when others infer that the deserted partner has some hidden defect or is lower in desirability than originally perceived to be.

The Prevalence of Mate Poaching

For mate guarding adaptations to have evolved, the problem of mate poaching must have been common enough to select for them. Although we cannot go back in evolutionary time to detect the frequency of mate poaching in the past, modern studies of mate poaching suggest that it is surprisingly prevalent. In one study, 60% of men and 53% of women admitted to having attempted to lure someone else's mate into a committed relationship [9]. Although more than half of these attempts failed, nearly half reportedly succeeded. Similarity between the sexes in long-term poaching attempts contrast with efforts designed for brief sexual encounters – 60% of the men, but only 38% of the women, report attempting to lure someone else's mate into a casual sexual encounter. Far higher percentages of both sexes say that others had attempted to entice them to leave an existing relationship – 93% of the men and 82% of the women for long-term love, and 87% of the men and 94% of the women for a brief sexual encounter. Somewhat smaller percentages report someone attempting to poach their mate, suggesting that poaching ploys are often initiated away from the prying eyes of the unsuspecting "victim." Roughly a third of the sample – 35% of the men and 30% of the women – report that a partner had been *successfully* taken away from them by a mate poacher. Mate poaching, in short, is clearly a common current mating strategy. Although many attempts fail, a sizable proportion appear to succeed. Although the prevalence of mate poaching varies from culture to culture, a recent cross-cultural study involving more than 30 nations points to substantial prevalence worldwide [10]. Mate poaching has probably been successful often enough to have evolved as a distinct sexual strategy – a strategy that established the ground rules for the evolution of the counter-adaptations of mate guarding.

Sexual and Emotional Triggers of Jealousy

Sexual jealousy has been hypothesized to be one of the central psychological mechanisms underlying mate guarding strategies [11, 12, 13]. Sexual jealousy is hypothesized to become activated whenever there is a perceived threat to a mating relationship. The threats can come from a variety of sources – the presence of poachers, cues to infidelity, or even subtle signals that suggest that a partner might be dissatisfied with the current relationship. Once activated, a variety of psychological processes are hypothesized to be set into motion, such as evaluation of the nature and magnitude of the threat and evaluation of potential courses of action. Eventually, these processes usually lead to behavioral output designed to deal with the threat – actions that can range from vigilance to violence.

Since a sexual infidelity historically jeopardized a man's paternity, men's jealousy and mate guarding should be easily triggered by signals of *sexual* betrayal [14]. Infidelities by men, in contrast, pose an equally dangerous reproductive risk for women – the loss of the man's time, attention, energy, parenting, investment, and commitment. Triggers of women's jealousy and mate guarding, as a consequence, should focus heavily on signals of these kinds of losses, such as a man becoming *emotionally* involved with another woman. Emotional involvement is a signal of the long-term commitment of resources to the partner with whom one is involved [15]. Sexual and emotional infidelity in a partner, of course, are correlated in nature [16]. People tend to become emotionally involved with those with whom they have sex. And people often become sexually involved with those they are emotionally close to. But not always. Sex can occur without emotional involvement, as in a one-night stand or a spring break fling. People can get emotionally involved without any sex, as occurs in at least some opposite-sex friendships. Both forms of infidelity, of course, are extremely upsetting to both sexes, and both can signal the dramatic loss of reproductively valuable resources.

When forced to choose which form of infidelity is more upsetting, however, large sex differences emerge consistently. Men are more likely than women to become distressed by sexual infidelity; women are more likely than men to become distressed by emotional infidelity. These fundamental sex differences have now been replicated by many different scientists in many diverse cultures – China (David Geary), Sweden (Michael Wiederman), the Netherlands (Bram Buunk and Pieternel Dijkstra), Germany (Alois Angeitner and Victor Oubaid), Japan (Mariko Hasegawa and Toshikazu Hasegawa), and Korea (Jae Choe)[17].

Some have challenged the evolutionary basis for these findings, proposing an alternative hypothesis based on the differing beliefs men and women hold about the conditional probabilities of the two events [18]. Systematic efforts to pit the alternative hypotheses against each other, however, consistently yield support for the evolutionary hypothesis. In one study, for example, 234 participants were asked to imagine that their partner had become both sexually *and* emotionally involved with someone else, and then asked to state *which component* of the betrayal they found more upsetting. This method renders the conditional probabilities of sexual and emotional infidelity irrelevant, since both forms of infidelity have occurred. Sixty-three percent of the men, but only 13 percent of the women, found *the sexual component* of the infidelity to be more upsetting. In contrast, 87 percent of the women found *the emotional component* of the infidelity to be more upsetting. These sex differences have now been found in Korea and Japan [19]. The preponderance of evidence, in short, supports the evolutionary hypothesis that the fundamental psychological design of the jealousy adaptation differs for the sexes.

Sex differences in the design of the jealousy defense also have been revealed in other facets of the mating game using a range of diverse scientific methods. Recently the fundamental sex differences in jealousy evocation have been replicated using four different measures of *physiological* distress [20]. When asked to

imagine an emotional infidelity, for example, women's skin conductance, heart rate, electromyographic activity, and body temperature all shoot up – physiological events that are highly correlated with the subjective reports of actual distress. Men show greater physiological distress when imagining a partner trying out different sexual positions with a rival.

Another recent study posed an additional set of dilemmas pertaining to forgiveness for a relationship violation [21]. One sample dilemma is as follows: "Please think of a serious or committed romantic relationship that you have ad in the past, that you are currently having, or that you would like to have. Imagine that you discover that the person with whom you've been seriously involved *both* becomes deeply emotionally attached to another person *and* has passionate sexual intercourse with that other person. Which aspect of your partner's involvement would be more difficult for you to forgive?

(A) Your partner's sexual intercourse with that other person.
(B) your partner's emotional attachment to that other person."

Significant sex differences emerged for this and half a dozen variants on this theme. More men than women found it more difficult to forgive a sexual than an emotional infidelity. More women than men found it more difficult to forgive an emotional than a sexual infidelity. Similar sex differences were discovered when the question posed was "Which aspect of your partner's involvement would be more likely to lead you to *break up* with your partner?" Actual divorce statistics verify this sex difference across cultures [22]. Men are more likely than women to seek a divorce because of a partner's sexual infidelity.

In summary, the evolutionary hypothesis of sex-linked design differences in the jealousy defense mechanism has withstood a number of empirical tests. It parsimoniously accounts for a constellation of findings that no other theory can. It accounts for sex differences in distress responses to the original infidelity dilemma. It accounts for the aspect of the betrayal that is more upsetting when both have occurred. It explains why these sex differences occur both psychologically and physiologically. It explains why the sex differences are found across a wide variety of cultures, including those that are sexually liberal such as Sweden and the Netherlands, as well as those that are more sexually conservative, such as China and Korea. And it explains why sexual infidelity by a woman is more likely to lead to breakups, violence, and divorce than a sexual infidelity by a man.

Threatening Characteristics of Rivals

Defenses against threats of infidelity, of course, do not end with the emotional response we call jealousy. Many other design features that characterize this critical defense against betrayal have been discovered. One such design feature centers on *which rivals* are perceived to be the most threatening [23]. Dutch, Korean, and American people were asked to rank 11 rival qualities according to which would be most upsetting. The rival characteristics ranged from "having a better sense of humor than you" to "being a more skilled sexual partner than you." Men in all three cultures, more than women, reported that they would experience greater distress when a rival surpassed them on the dimensions of *financial prospects*, *job prospects*, and *physical strength*. Women in all three cultures, more than men, reported greater distress when a rival had *a more attractive face* or *a more desirable body*.

These sex differences in the qualities of rivals people find most threatening reflect fundamental sex differences in the components of mate value. Physical attractiveness is a more important component of women's than of men's mate value; it provides a wealth of cues to a woman's fertility and reproductive value. Economic potential, and the qualities that lead to resource acquisition, are more important determinants of men's than of women's mate value. Evidence for these universal determinants of desirability were initially discovered in a study of mate preferences in 37 cultures located on six continents and five islands, with a total sample size of 10,047 [24]. The fundamental sex differences in mate preferences have subsequently been replicated by several dozen independent researchers [25, 26]. The qualities men and women find most threatening in a rival mirror these sex-linked components of mate value.

Cognitive Biases and Emotional Wisdom

Humans live in an uncertain social world. We must make inferences about others' intentions and emotional states. How attracted is he to her? How committed is she to him? Does that smile signal sexual interest or mere friendliness? Some states, such as smoldering passions for other people, are intentionally concealed, rendering uncertainty greater and inferences more tortuous. We are forced to make inferences about intentions and concealed deeds using a chaos of cues that are only probabilistically related to the deeds' occurrence. An unexplained scent on one's romantic partner, for example, could signal betrayal or an innocuous olfactory acquisition from a casual conversation.

In reading the minds of others, there are two ways to go wrong. One can infer a psychological state that is not there, such as assuming sexual interest when it is absent. Or one can fail to infer a psychological state that is there, such as remaining oblivious to another's true romantic yearnings. According to a new approach called Error Management Theory, it would be exceedingly unlikely that the cost-benefit consequences of the two types of errors would be identical across their many occurrences [27, 28, 29]. We intuitively understand this in the context of smoke alarms, which are typically set to be hyper sensitive to any hint of smoke. The costs of the occasional false alarm are trivial compared with the catastrophic costs of failing to detect a real house fire. Error Management Theory extends this logic to cost-benefit consequences in evolutionary fitness, and

in particular to reading the mating minds of the opposite sex.

According to Error Management Theory, asymmetries in the cost-benefit consequences of inferences, if they recur over evolutionary time, created selection pressures that produced predictable *cognitive biases*. Just as smoke alarms are "biased" to produce more false positives than false negatives, Error Management Theory predicts that evolved mind-reading mechanisms will be biased to produce more of one type of inferential error than another. In the context of jealousy and mate guarding, it is reasonable to hypothesize that it would be more costly for a person to err by failing to detect a partner's infidelity than to erroneously infer an infidelity that has not occurred [30].

A condition that likely facilitated the evolution of a "jealousy bias" that functioned to over-infer infidelity is the great uncertainty that surrounds the detection of infidelity. One study surveyed a large sample of men and women who were involved in long-term romantic relationships [31]. They asked each person privately whether they were certain or uncertain that their partner had always been faithful to them. Of the women polled, 45% reported that they were certain their partner had been faithful; 41% reported that they were certain that their partner had been unfaithful; and 14% reported that they were uncertain whether or not their partner had been unfaithful. The corresponding figures for men were 36%, 28%, and 36%. That is, more than a third of the men in this sample reported uncertainty about whether or not their partner had remained faithful to them. Given that sexual infidelity is typically intentionally concealed, men's uncertainty should perhaps not be surprising. Nonetheless, it sets the stage for the evolution of a "jealousy bias" designed to minimize errors of failing to detect an infidelity when one occurs.

Although research has just begun to explore this hypothesized jealousy bias, a large literature in psychiatry and clinical psychology points to its existence [32]. Indeed, there are many psychiatric terms to describe individuals afflicted with recurrent false suspicions that their partner is unfaithful – delusional jealousy, pathological jealousy, psychotic jealousy, the erotic jealousy syndrome, and the Othello Syndrome (after the Shakespeare play "Othello," a man who falsely suspected his wife of sexual betrayal). Men and women sometimes harbor false suspicions that a partner is unfaithful when he or she is in fact the paragon of loyalty. The bias appears to become activated in contexts that historically have been linked to infidelity – when a partner is sexually dissatisfied, displays a sudden decline in sex drive, or where there is an increasing gap in the mate value of the two partners [33]. Of course, verifying with certainty that jealous suspicions are false is extremely difficult, given the clandestine nature of infidelity. Nonetheless, the logic of Error Management Theory suggests that a jealousy bias is likely to have evolved; future empirical research is needed to test this hypothesis directly.

Error Management Theory offers a fresh perspective on human mating problems by suggesting that certain types of errors reflect functional adaptations rather than actual flaws in the psychological machinery. It provides new insights into why men and women get into certain types of conflict – for example, why partners sometimes get falsely suspected or accused of infidelity, and why there are numerous psychiatric cases of individuals diagnosed with delusional jealousy.

Behavioral Tactics of Mate Guarding

Inputs that trigger jealousy may tell us little about the actual behavioral output that follows from the perception of a threat. The first attempts to study behavioral tactics of human mate guarding took place occurred in the late 1980's [34]. Researchers identified 19 different tactics of mate guarding, ranging from vigilance to violence. Examples of *vigilance* include: *He called her at unexpected times to see who she was with; She had her friends check up on her; He dropped by unexpectedly to see what she was doing; At the party, she did not let him out of her sight.* Examples of *violence* include: *He hit the guy who made a pass at her; She slapped the woman who made a pass at her partner; He got his friends to beat up the guy who was interested in her.*

Other tactics of mate guarding include the *concealment of mate* (e.g., He did not take her to the party when other males would be present), *monopolization of mate's time* (e.g., He spent all his free time with her so that she could not meet anyone else), *verbal threats* (e.g., She threatened to break up with him if he ever cheated on her), *derogation of competitors* (e.g., He pointed out to her the other guy's flaws), *resource display* (e.g., He bought her an expensive gift), *appearance enhancement* (e.g., He made himself "extra attractive" for her), *sexual inducement* (e.g., She performed sexual favors to keep him around), *physical signals of possession* (e.g., He held her hand when other guys were around), and *possessive ornamentation* (e.g., She asked him to wear a ring signifying that he was taken). It is noteworthy that two of the major strategies commonly found among insects – the concealment of mates and the physical repulsion of rivals – are also found in humans, suggesting a particularly successful region of adaptive design space.

Men and women differ in how frequently they perform these mate guarding tactics [35, 36]. Men are more likely than women to attempt to conceal their mates, use possessive markings (e.g., asking her to wear his jacket), display resources, threaten intrasexual rivals, and use physical violence toward intrasexual rivals as tactics of mate guarding. Women are more likely than men to enhance their physical appearance and flirt with other men as tactics of mate guarding.

Another critical issue centers on what predicts the intensity of effort a person allocated to mate guarding. Given that energy and effort are always finite, effort allotted to one adaptive problem cannot be allotted to others. Mate guarding is theoretically predicted to

increase in intensity to the degree that (1) one is mated to a valuable partner, and so a relaxation in mate guarding might result in a large reproductive loss, and (2) there are interested rivals, and hence an increased threat of mate poaching and the possibility of defection. Other things being equal, the higher the mate value of one's partner, the higher the probability that there will be rivals interested in poaching one's partner.

A study of 107 newlywed married couples explored predictors of the intensity of effort a person allocated to mate guarding [37]. Men married to young and physically attractive women, that is those high in reproductive value, mate guarded them most intensely. They were more likely than other men to conceal their mates, display emotional outbursts at the slightest signals of infidelity, and threaten other men with violence. Examples of the specific actions these men performed include:

- *Refusing to take her to the party where other men were present.*
- *Insisting that she spend all her free time with him.*
- *Yelling at her for talking to another man.*
- *Telling her that he would die if she ever left him.*
- *Derogating another man's intelligence.*
- *Staring coldly at the other guy who was looking at her.*

Just as a woman's youth and physical attractiveness figure heavily in men's initial mate preferences, they also determine the intensity of effort men devote to holding on.

Women's mate guarding, in contrast, was not at all influenced by her husband's physical appearance or his age. It was affected by his income and how determined he was to climb the status hierarchy. Women married to men with abundant resources and men higher on status striving were more likely than other women to display increased levels of vigilance, express emotional distress at the slightest hint of a partner's wandering eye, put extra effort into enhancing their appearance, and show more submissiveness in the service of holding on to their partner. Specific acts by these mate guarding women include:

- *Staying close by his side when they were at the party.*
- *Threatening to break up if he ever cheated on her.*
- *Making herself "extra attractive" to maintain his interest.*
- *Telling him that she would change to please him.*
- *Asking him to wear a ring to signify that he was taken.*

Just as women's desire for men who have status and resources influences initial mate selection, these same qualities continue to influence the effort women devote to keeping the men they have attracted.

Jealousy and the corresponding behavioral strategies of mate guarding are likely to have evolved because of the ever-present possibility of sexual betrayal or emotional defection. In a hazardous mating arena where rivals lurk, partners harbor passions for other people, and infidelity threatens, it is not surprising that evolution has forged elaborate strategies to detect and fend off these threats.

Conclusions

Desirable mates are always in short supply compared to the many who seek them. Because those high in mate value have many mating options and are often heavily courted, they tend to be taken out of the mating market with dispatch. Being already mated, however, does not necessarily deter others who are interested, resulting in the phenomenon of mate poaching, which may have arisen as a distinct mating strategy. Selection would have operated against those who failed to defend against mate poachers. Selection would also have penalized those who let their partner defect, either temporarily or permanently. Mates gained must be retained. Failure to solve this cluster of adaptive problems would have been costly – from genetic cuckoldry to the misdirection of parental effort to reputational damage that would impair future mating opportunities. Thus, counter-strategies evolved to prevent defection, deter poachers, and preserve access to the reproductively relevant resources of an attained mate.

Although both sexes undoubtedly confronted adaptive problems to which mate guarding was an effective solution, the precise nature of these problems differed in several key respects. Because fertilization occurs internally within females and not within males, males historically faced a reproductive risk not faced by females – genetic cuckoldry. The sexes also differed in the qualities of rivals that posed the greater threats. Potential interlopers with better economic resources or prospects, for example, posed a greater threat to men than to women mate guarders, given the premium that women place on resources in potential mates. Potential interlopers who are physically attractive and young posed a greater threat to women than to men mate guarders because of the premium men place these cues to reproductive value in their mate selections. As a consequence of differences in the precise nature of the adaptive problems women and men faced, the sexes evolved corresponding differences in the underlying psychology of mate guarding. Women more than men become easily distressed by threats of a partner becoming emotionally involved with a potential rival, since emotional involvement predicts the long-term diversion of a man's commitments and resources to another woman. Men more than women become distressed by signs of sexual involvement, since sexual involvement jeopardizes a man's certainty in paternity. Sex differences in the relative weight given to signals of sexual and emotional infidelity have been well documented psychologically, physiologically, and cross-culturally.

The adaptive problems that historically gave rise to jealousy and mate guarding, of course, are not necessarily consciously articulated by the persons experiencing them. A man who discovers his wife in the act of intercourse with another man does not think to himself: "Let me see ... this event jeopardizes my certainty in

genetic paternity in offspring, and hence threatens the successful proliferation of my genes relative to those of my rivals ... that makes me mad!" Rather, jealousy becomes activated, physiology aroused, and consequent mate guarding behavior performed. Successful mate guarding does not require conscious awareness of the adaptive logic of why mate guarding mechanisms evolved.

Precisely how much effort a person allocates to mate guarding is partly a function of the value of the mate being guarded. Men married to young and physically attractive mates invest more effort in mate guarding compared to men married to older and less attractive women. Women married to men higher in income and status striving put more effort into guarding their partners than women married to men who earn less or strive less for status. These patterns presumably reflect the fact that attractive women and resourceful men are higher in mate value than same-sex others lacking these qualities. As a consequence, they experience more frequent sexual or romantic interest from others, and hence have more numerous and more desirable potential mating options. Thus, those mated with desirable partners allocate more effort to mate guarding.

Once a threat is perceived and mate guarding psychology activated, specific mate guarding behavior often follows, ranging from vigilance to violence. At this stage in mating science, precisely which acts of mate guarding a person performs cannot be predicted. One person increases the levels of resources bestowed on a mate, a second verbally derogates a perceived rival, a third starts to stalk the mate surreptitiously, and a fourth explodes in violence. The specific mate guarding acts deployed are undoubtedly a function of many factors, such as the magnitude of the threat, the assets of the interloper, the perceived effectiveness of alternative acts, perceived reputational consequences, and many others. In this sense, many design features of the underlying mate guarding psychology remain to be discovered.

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