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Reactions to Infidelity: Gender Differences and Relative Mate Value

A Dissertation APPROVED FOR THE
DEPARTMENT OF PSYCHOLOGY

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Abstract

Two studies examined the influence of gender and mate value on responses to infidelity from an evolutionary perspective. Couples were recruited for Study 1, allowing an examination of participants' self-perceived mate value relative to their partners' mate value (relative mate value). As predicted, males responded more negatively (i.e., they reported greater levels of indignation, a greater likelihood of relationship dissolution, less forgiveness) in response to sexual infidelity compared to emotional. In addition, higher levels of relative mate value were associated with greater levels of indignation in response to infidelity, regardless of the type of affair. In Study 2, participants who had been the victim of infidelity in the past recounted their experiences and reported how they actually responded. Although evidence for gender differences in this study were weak, consistent with Study 1, higher levels of relative mate value were associated with greater levels of indignation in response to infidelity. Taken together, these two studies provide compelling support for the hypothesis that an individual's perceived relative mate value is an important predictor of reactions to infidelity (particularly levels of indignation). Although these results did not support the existence of a fundamental difference between males and females in response to sexual versus emotional infidelity, Study 1 provided compelling evidence that, at least for males, type of affair is an important predictor of reactions to infidelity.

Reactions to Infidelity: Gender differences and relative mate value

Our romantic relationships are some of the most rewarding and important relationships that most of us will ever experience. With the possible exception of family relationships, they are also the longest lasting. However, these same relationships can also be great sources of pain and anguish. One such source of extreme pain and betrayal would be discovering, after investing considerable time and effort in forming and maintaining a relationship with a significant other, that he or she has been unfaithful. Unfortunately, such instances of infidelity are all too common. Recent estimates of marital infidelity range from 26 to 70 percent for women and 33 to 75 percent for men (Shackelford & Buss, 1997a). These estimates vary widely, partly due to the secretive nature of infidelity; however, even at the lower end, these numbers represent a substantial risk and a large potential problem within romantic relationships.

It is not surprising that actual or suspected infidelity is the leading cause of spousal abuse and homicide, as well as the most frequently cited reason for divorce among married couples (Shackelford & Buss, 1997a). However, not all illicit affairs result in termination of the relationship. Many individuals choose instead to remain with their partners and work toward repairing the relationship (Shackelford, Buss & Bennet, 2002). As a result, researchers in psychology have begun to explore the dynamics underlying our reactions to this potentially devastating event. Specifically, they have posed questions such as, “What factors influence the level of distress experienced following infidelity?” and “Under what conditions are the victims of infidelity likely to choose reconciliation and forgiveness over relationship dissolution?”

GENDER DIFFERENCES

Sexual versus Emotional Affairs

One line of work in this area has examined whether males and females might react differently to infidelity depending on the type of affair. Although infidelity in any form is expected to be highly distressing for those involved, evolutionary theorists predict some important differences in the levels of distress experienced by males and females as a function of the type of affair (Buss, Larsen, Westen & Semmelroth 1992). The current literature divides infidelity into two distinct categories. The first type, sexual infidelity, is usually conceptualized as a physical relationship with little or no emotional commitment (the typical one-night stand). The second type, emotional infidelity, is usually characterized as involving a “deep emotional attachment to the other person.” Based on this dichotomy, researchers have predicted that males will be most distressed by sexual infidelity, whereas females will be most distressed by emotional infidelity (Buss et al., 1992).

Due to the mechanics of human reproduction, males are faced with the adaptive problem of paternal uncertainty. Because fertilization and gestation occur internally, females can be 100% certain that any offspring they give birth to are genetically theirs. Males, on the other hand, do not have this assurance. As a result, males are always at risk of being cuckolded (unknowingly investing their resources in the care and provisioning of another man’s genetic offspring). Obviously, this is very costly in terms of a male’s evolutionary fitness. Any resources that a male invests in someone else’s offspring are diverted away from his own genetic children. Thus, these resources provide no evolutionary benefit to the cuckolded male, but instead represent only wasted time and

effort. Researchers estimate that current rates of cuckoldry within modern western societies are as high as 25% (Baker & Bellis, 1995), highlighting the magnitude of this risk. It is because of the high cost of cuckoldry that males are hypothesized to be particularly upset by sexual infidelity. Even a brief sexual affair might result in an unintended pregnancy and is thus very costly to a male's fitness (Buss et al., 1992).

Females, on the other hand, benefit most from securing a mate who will provide appropriate resources, such as food, shelter and protection for her and her offspring. Previous work has shown that females value characteristics in a mate such as ambition and status that are indicative of an ability to provide these resources (Buss, 1989). Human children are born relatively helpless and are completely dependant on assistance and care from the adults in their families in order to survive the first few years. Throughout our evolutionary past, children who received investment and support from both parents fared better than those who did not. Thus, the evolutionary fitness of both males and females is related to the amount of parental care provided. However, because females are more limited in the number of offspring they can produce within their lifetime, it is more important for a female's fitness that each child thrive. Even in today's modern society in which children are more likely to survive to adulthood than at any time during our ancestral past, there is ample evidence that children who receive investment and support from both parents have a large advantage (Geary, 1998). Thus, it is vitally important for a female's fitness that she seek out and hold onto a mate who is willing and able to provide adequate resources for his family. It is because of this motivation that females are hypothesized to be particularly distressed by emotional infidelity, which may signal a potential loss of resources.

For a female, the cost of her partner's infidelity lies not in the risk of cuckoldry, but in the chance that her mate will divert resources from herself and her offspring to another woman, or that he will leave her altogether, effectively cutting off all support. It is likely that, within the context of infidelity, an emotional involvement is indicative of increased investment in the extrapair partner and/or an intention to leave the relationship. Therefore, a purely sexual affair, although still potentially devastating, does not pose the same costs to a female's fitness as one with a strong emotional component, particularly if her mate remains willing to invest resources in their current relationship (Buss et al., 1992).

This hypothesized sex difference has been demonstrated in several previous studies examining a variety of potential reactions to infidelity, including levels of general distress, willingness to forgive, and the likelihood of relationship dissolution (Buss et al., 1992; Shackelford et al., 2002). In each study, males were significantly more likely than females to indicate that sexual infidelity would be worse than emotional infidelity. Specifically, compared to females, males reported that sexual infidelity would be more distressing than emotional infidelity (Buss et al., 1992), and that they would be more likely to break up and less likely to forgive in response to sexual infidelity compared to emotional infidelity (Shackelford et al., 2002). These results appear to be relatively robust and have been widely replicated both cross culturally (Buunk, Angleitner, Oubaid, & Buss, 1996) and with a variety of samples (for a review see Harris, 2003).

Criticisms of the Evolutionary Approach

Although compelling, the results discussed above have also been criticized (see DeSteno, Bartlett, Braverman, & Salovey, 2002, and Harris, 2003). There are two

potential problems within the current literature that need to be addressed in order to clarify whether a fundamental differences does indeed exist between males and females in response to infidelity. These potential problems can be broadly divided into two major categories: methodological problems, and issues surrounding the construct validity of the ways in which response outcomes have been conceptualized.

Methodological Limitations

Forced Choice Methodology

The first potential problem within this literature concerns the methodology most commonly used to demonstrate the existence of a gender difference (DeSteno et al., 2002). In the standard forced-choice method, participants are asked to choose the most upsetting (or distressing) option from two choices, one describing sexual infidelity and one describing emotional infidelity. Although the predicted gender difference has been replicated numerous times using this methodology (Harris, 2003), other researchers have had mixed results when using alternative methods (Desteno et al., 2002). For example, when using a continuous measure of “jealousy,” Sagarin and colleagues (2003) found that emotional infidelity did indeed elicit more jealousy than sexual infidelity among females. Similarly, male participants in this study also reported more jealousy in response to sexual infidelity versus emotional, although in this case, the comparison was only marginally significant. In contrast, several other researchers have been unable to replicate the effect with anything other than the standard forced choice format, leading them to conclude that the observed gender difference is nothing more than an artifact of the method used in these studies (DeSteno et al., 2002; Harris, 2003).

One reason for the failure to demonstrate an effect using more traditional methods may be that, although the forced choice method allows participants to judge one form of infidelity as more distressing than the other, it does not measure overall levels of distress, which are likely to be high for any type of infidelity. Proponents of the forced choice method argue that this tendency for infidelity to be associated with high levels of distress creates an unavoidable problem with ceiling effects when using continuous measures and that the forced choice format eliminates this concern (Buss, Larsen, & Westen, 1996). These theorists argue that, in studies using continuous measures of jealousy or distress, the predicted gender difference is often obscured by participant's understandably high levels of overall distress in response to infidelity in general. However, forcing participants to choose which type of infidelity is most upsetting allows the potentially important gender differences to emerge even when overall levels of distress are extremely high in both cases.

Alternative Interpretations of the Available Data

Several researchers have argued that the forced choice format may create a false dichotomy. For many people, the existence of one event (emotional infidelity) may imply the other (sexual infidelity). If so, then these two concepts may not be seen as discrete types by participants, but as more or less the same thing (Harris & Christenfeld, 1996). For example, if Person A believes that emotional infidelity usually or always includes sexual infidelity, but that sexual infidelity can sometimes occur by itself, he or she will be more upset by emotional infidelity simply because it implies both types and is therefore more severe. In contrast, if Person B believes that sexual infidelity usually or always includes an emotional component, but that emotional infidelity may not always include a

sexual component, he or she will be more upset by sexual infidelity, which subsumes the emotional as well. Harris and Christenfeld (1996) termed this effect the “double-shot hypothesis” because increased levels of distress in response to one type of infidelity over the other is driven by the belief that the two types occur together. Thus, Person A is more distressed in response to emotional infidelity compared to sexual because the emotional option includes a sexual component and thus represents a “double-shot” of infidelity. In this case, sexual infidelity, though still distressing, does not automatically imply that his or her partner has also fallen in love with the other person, and is therefore not as severe.

Under the framework of this hypothesis, the gender differences seen in the current literature could simply be the result of differing beliefs about the implications of each type of infidelity. Specifically, Harris and Christenfeld (1996) hypothesized that men believe women have sex only when they are in love, whereas women believe that men have sex without being in love. In support of this hypothesis, they found that females were more likely to believe that an emotional affair included sex than vice versa (a sexual affair includes an emotional component). However, males were equally likely to believe that either type of affair implied the other.

The available data could also be interpreted as indicating that males may not be distinguishing between the two types of infidelity, whereas females seem to be making a clear distinction. If participants are indeed perceiving sexual and emotional infidelity as essentially the same thing, one would expect that their responses to the forced choice format would not deviate from chance responding. In other words, about 50% of the participants should choose the sexual option as most upsetting, and 50% should choose the emotional option. Conveniently, Harris (2003) has recently published a review and

meta analysis of the data collected so far demonstrating sex differences in jealousy. An examination of the studies using the forced choice method reveals that across 40 studies measuring overall levels of distress, males chose the sexual option as most upsetting 45% of the time, whereas females chose this option only 21% of the time. Harris (2003) argues that, although this comparison does represent a sex difference with a moderate effect size, the fact that it is rarely replicated using other methods supports the contention that it may be an artifact of the method used, and casts doubt on the conclusions that males have evolved to be more sensitive to sexual infidelity, whereas females have evolved to be more sensitive to emotional infidelity. She proposes instead that jealousy evolved as a more general mechanism that may be sensitive to situational cues including different belief structures concerning the consequences of each type of infidelity, but that it does not differ dramatically for males and females.

Although it may be true that jealousy in response to the threat of infidelity evolved as a more general mechanism than originally proposed by evolutionary psychologists, there may still be some gender differences, albeit much more subtle. As discussed above, the percentage of males choosing sexual infidelity as most upsetting varies from about 40% to 60% with an average of about 45%. If participants are randomly choosing one of two options, the expectation is that each option will be chosen approximately 50% of the time. The 45% reported above does not differ from this expectation based on random responding. Perhaps the forced choice methodology requires males to make a choice between two options that are perceived as more or less identical.

In contrast, it appears that females are making a distinction and consistently choosing the emotional affair as most upsetting. Across studies, females chose the sexual option as most upsetting only 21% of the time. This is clearly a deviation from the expected 50%. This finding fits nicely with evolutionary theory in that, if an emotional affair poses a greater cost for females than a purely sexual one, it would be adaptive for females to distinguish between the two types of infidelity and to react differently based on whether the illicit relationship involves an emotional commitment. However, the difference in cost of a sexual versus emotional affair for a male may not be as clear-cut. For males, any incidence of infidelity carries a risk of pregnancy and subsequent cuckoldry. Although it is possible that an emotional affair might not include a sexual relationship, it would be very costly if a male made this assumption and was wrong. In addition, an emotional affair that did not currently include a sexual component might still develop into a sexual relationship (Shackelford & Buss, 1996). In support of this idea, Wiederman and Allgeier (1993) presented evidence that instead of being more sensitive to sexual infidelity that has already occurred, males respond to cues indicative of possible sexual infidelity. Thus, for males, there may be no adaptive value in distinguishing between the two types of infidelity; in fact, it may be most adaptive for males to assume that any affair involves sex and to react accordingly. This line of reasoning is also consistent with the findings discussed above in which males were equally likely to believe that either type of affair implied the other (Harris & Christenfeld, 1996). Perhaps the sex difference seen in reactions to infidelity could better be conceptualized as a difference between males and females in their tendency to distinguish between the two

types of infidelity. Females, who face different costs depending on the type of infidelity, should be more sensitive to this distinction.

Problems With Construct Validity

The second potential problem within this literature concerns how the concept of “jealousy” has been operationalized within the majority of studies. As noted above, researchers have examined at least three categories of reactions to infidelity – general distress, willingness to forgive, and the likelihood that the relationship will end as a result. These three constructs have generally been treated as equivalent outcomes that are each indicative of the general concept of “jealousy.” Although jealousy most certainly involves a great deal of overall distress and is often the motivating factor behind decisions to end a relationship, as well as an overall lack of forgiveness, these reactions may also be distinct from jealousy and from each other in some important ways.

The Conceptualization of Jealousy as Overall Levels of Distress

Although the majority of the current studies, particularly those employing the forced-choice methodology, have relied on the use of the single term “distress” or “upset” to assess jealousy (for a review, see Harris, 2003), other theorists have questioned the construct validity of this measure (DeSteno et. al., 2002). For example, previous work has shown that the phenomenological experience of jealousy is actually much more complex than simple distress, and may represent a constellation of related emotions such as anxiety, anger and hurt (Parrott & Smith, 1993).

In further differentiating jealousy from simple distress, emotion theorists have defined jealousy as an emotion experienced when a person is threatened by the loss of an important relationship to a rival (Parrott, 2001). Any loss or potential loss, however

upsetting, that does not involve one's partner beginning another relationship with someone else does not result in jealousy. Thus, it is entirely possible to feel distressed without feeling jealous. In addition, distress could mean a variety of things depending not only on the situation, but also on each individual's interpretation of the term. For example, emotional reactions to infidelity could potentially range from anger and hostility to sadness and even fear or anxiety, all of which would fall under the general term "distress."

Perhaps using a term so broad has hindered researchers in their quest to understand how males and females react to the different types of infidelity. Each of these specific emotional reactions might result in vastly different consequences following infidelity. For example, emotions such as anger and hostility are likely to lead to relationship dissolution or motivations for revenge; however, other reactions such as fear or anxiety might motivate the victim to cling to the relationship despite the occurrence of infidelity. Thus, it is theoretically possible to feel extreme distress in response to infidelity, but still decide not to end the relationship for a variety of other reasons. This indicates that it might not be appropriate to treat emotional distress, forgiveness and relationship dissolution as the same general construct. These three categories of reactions may actually differ from each other in some important ways and should be considered as separate constructs.

Differences Between Distress and Other Outcome Measures

In an attempt to expand the literature from the standard measure of distress to these more focused outcome variables (relationship dissolution and forgiveness), Shackelford et al. (2002) asked participants which form of infidelity (sexual or

emotional) would be easiest for them to forgive and which one would be most likely to result in the relationship ending. Although the predicted sex difference emerged, with males being more likely than females to indicate that sexual infidelity would be worse, the pattern of responses differed from those found in studies examining simple distress in subtle, but potentially interesting ways. In the case of forgiveness, 65.1% of males indicated that sexual infidelity would be most difficult to forgive, whereas only 52% of the females chose this option. This is in contrast to the pattern discussed above in which males choose the sexual affair as most distressing 45% of the time and females choose this option only 21% of the time. Thus, it appears that when considering whether to forgive their partner and when making decisions regarding whether to end the relationship, males may be the ones who are distinguishing between the two types of infidelity, whereas females are not.

Although this represents only one study, if this effect could be replicated, it suggests an interesting hypothesis that could be explored further. Perhaps the type of infidelity is predictive of whether one's partner will be unfaithful again. Someone who commits sexual infidelity without an emotional commitment might be likely to repeat this offense with another attractive person, whereas emotional infidelity involves a greater commitment of time and energy, and might be less likely to be repeated. If this is the case, then when faced with decisions about whether to end the relationship, it might be adaptive for men to consider whether the affair involved emotional or sexual infidelity. If sexual infidelity is more likely to be repeated, remaining in a relationship with someone guilty of a sexual affair could potentially be more costly for males, even if the original affair did not result in an unintended pregnancy. At the very least, an act of

sexual infidelity with no emotional attachment (a one night stand) is indicative of a lack of chastity and fidelity, a characteristic that men tend to place a relatively high value on in selecting a long-term mate (Buss, 1989).

Regardless of the reason behind these results, this reversal of the pattern found within studies measuring overall levels of distress indicates that it may not be appropriate to treat all three categories of reactions to infidelity as the same general construct.

Although males may not be distinguishing between sexual and emotional infidelity when reporting levels of emotional distress, they appear to be making a distinction when faced with the decision of whether or not to end the relationship. If males' sensitivity to sexual infidelity is driven by the potential costs of cuckoldry, as predicted by evolutionary psychologists (Buss et al., 1992), and as discussed above, if purely sexual affairs are more likely to reoccur, then it follows that such affairs represent an increased cost to a male's fitness. Thus, for males, whether an affair was purely sexual or emotional could be an important factor to consider when deciding whether or not to remain in the relationship.

Differences Between Forgiveness and Reconciliation

Although researchers studying reactions to infidelity have conceptualized forgiveness and relationship dissolution as polar opposites representing the end points of a continuous spectrum (Shackelford et al., 2002) this may not be the best approach. In fact, recent work examining the general process of forgiveness supports the contention that these two seemingly similar concepts do not represent the same construct and should be examined separately. Although theorists interested in forgiveness have yet to agree on a standard definition of what forgiveness is, most agree that forgiveness is not the same

thing as reconciliation (McCullough, Pargament & Thoresen, 2002). In other words, it is entirely possible to forgive someone for a transgression and yet have no desire to continue a relationship with him or her. Alternatively, there are also situations in which a relationship might continue following a transgression even in the absence of forgiveness (Karremans, Van Lange, Ouwerkerk & Kluwer, 2003).

That being said, there is ample evidence that forgiveness following a transgression is associated with better relationship functioning and satisfaction, particularly within romantic relationships (Fincham & Beach, 2002). Not surprisingly, forgiveness is associated with relationship closeness as well as commitment and often leads to positive outcomes including reconciliation and increased psychological well-being (Karremans et al., 2003; Finkel, Rusbult, Kumashiro & Hannon, 2002). Thus, although relationship dissolution and forgiveness in response to infidelity are likely to be integrally related and more often than not will co-occur, it is useful to treat them as separate constructs in order to avoid obscuring any potential differences.

The Current Studies

Responses to the Limitations of Previous Work

In an attempt to address some of the limitations discussed above, the current set of studies will assess a variety of specific emotions rather than simply overall levels of distress. These emotions will be assessed using an expanded continuous Likert scale rather than a forced-choice format. There is little argument among researchers that these gender effects are robust when assessed with the standard forced-choice format. Thus, it is important to address the argument that they are simply a methodological artifact by using more traditional measurement techniques. In addition, emotional reactions (such as

indignation and anxiety) and outcomes including relationship dissolution and forgiveness will also be treated as separate constructs.

Second, comparisons will be made not only across genders (males vs. females), but also within each gender (emotional vs. sexual infidelity). It is possible that the evolutionary predictions about reactions to infidelity by males and females should be conceptualized not as a gender difference in overall levels of distress, but as a difference in sensitivity to each type of affair.

Gender Hypotheses

The current set of studies will address two general categories of responses to infidelity –emotional reactions (indignation vs. anxiety) and outcomes (relationship dissolution and forgiveness).

Emotional reactions. This set of hypotheses addresses the differences between males and females in their emotional responses to each type of infidelity. Specifically, it is hypothesized that females will report greater levels of anxiety-related distress in response to emotional infidelity compared to sexual infidelity. Based on evolutionary theory, this effect should be at least partially mediated by how much she trusts that her partner not be faithful in the future. Second, males should report greater levels of indignation in response to sexual infidelity compared to emotional.

Outcomes. This set of hypotheses addresses gender differences in predicting outcomes such as relationship dissolution and forgiveness in response to each type of infidelity. First, it is hypothesized that males, relative to females, will report lower levels of forgiveness and be more likely to have ended the relationship following infidelity. Second, males will be more likely to end the relationship and will express less

forgiveness in response to sexual infidelity compared to emotional. The effect should be mediated by levels of indignation. Third, for females, infidelity that is perceived to have had a strong emotional component will result in a greater likelihood of relationship dissolution, and lower levels of forgiveness.

THE EFFECTS OF MATE VALUE

In addition to addressing the issues discussed above surrounding the question of whether or not gender differences exist in response to emotional versus sexual infidelity, the current set of studies will also explore another potentially important variable – the mate value of the victim relative to his or her partner. Although very little work has been conducted linking the construct of mate value to reactions to infidelity, what little we do know about the dynamics of mate value suggest some interesting hypotheses in this area.

Evolutionary psychologists have defined mate value as an individual's overall attractiveness (physical and otherwise) as a potential spouse, relative to other potential spouses on the current "mating market" (Shackelford & Buss, 1997b). Although individuals are motivated to seek out the highest quality mate available, one's potential choices are constrained by his or her own mate value. Thus, the mate value of couples involved in romantic relationships is generally positively correlated, such that those who are high in mate value tend to marry and/or date partners who are also high in mate value. However, discrepancies sometimes exist and are associated with lower levels of satisfaction in the relationship (Shackelford & Buss, 1997b). Specifically, individuals with high mate value relative to their partners tend to be less satisfied with the relationship in general. This decrement in overall satisfaction is assumed to be related to the fact that the more valuable partner incurs a greater cost as a result of his or her

involvement in the relationship. This cost generally comes from the loss of mating opportunities with more valuable partners. In effect, by remaining in the relationship, the higher value individual gives up opportunities to mate with more valuable individuals (Buss, 1994).

In contrast, individuals with a low mate value relative to their partner tend to demonstrate greater levels of insecurity, including romantic jealousy. An individual with lower mate value relative to his or her partner benefits by being in the relationship, and incurs the greatest cost if the relationship ends. Thus, he or she is motivated to maintain the status quo and should be particularly sensitive to cues indicating that the relationship might be in trouble (Buss, 1994).

Mate Value Hypotheses

These differences in costs versus benefits resulting from inequalities in mate value between romantic partners suggest several hypotheses regarding reactions to infidelity that will be examined in the current set of studies.

Effects of High Relative Mate Value

First, it is hypothesized that individuals high in mate value relative to their current partner will experience distress in terms of anger and hostility (i.e., indignation). This will result in a greater likelihood that the relationship will end as a result and should be associated with less forgiveness. Due to their higher mate value, these individuals should perceive a wealth of acceptable alternatives to the current relationship, and therefore, should be less likely to remain in a potentially costly relationship with an unfaithful mate.

Effects of Low Relative Mate Value

Second, it is hypothesized that individuals who are lower in mate value relative to their partners will experience distress in terms of anxiety and fear. Thus, despite experiencing high levels of distress, they will be less likely to break-up with an unfaithful partner and more likely to forgive. These individuals may perceive the available alternatives as less attractive, and should be more motivated to maintain their current relationship. This is consistent with findings within the forgiveness literature demonstrating that the link between commitment and forgiveness appears to be driven more by a simple intent to persist in the relationship rather than a long-term orientation or psychological attachment (Finkel et al., 2002). In this case, intent to persist was conceptualized as a decision to remain dependent on one's partner. Individuals who have invested a great deal in their relationship and perceive poor alternatives report greater intent to persist. In effect, they remain committed to their partner because they need the relationship. As discussed above, individuals with low mate value relative to their partner incur greater costs if the relationship ends. In other words, they need the relationship, and therefore, should report greater levels of intent to persist.

Relative Versus Absolute Mate Value

Although the above hypotheses are proposed in terms of an individual's mate value relative to his or her current partner, it is also possible that absolute mate value is just as effective in predicting reactions to infidelity. Due to the lack of research on this topic, the current set of studies will also examine the effects of an individual's mate value separately from his or her partner's.

STUDY 1: REACTIONS TO HYPOTHETICAL SCENARIOS

Overview of Study 1

Couples reported how they would react in response to a hypothetical scenario describing a situation in which their partner had been either sexually unfaithful with no emotional component (i.e., he or she had sex with another person but did not fall in love), or emotionally unfaithful with no sexual component (i.e., he or she “fell in love” with someone else but did not have sex). In this study, the two types of infidelity (sexual and emotional) were purposely separated in order to examine the validity of the double-shot hypothesis proposed by Harris and Christenfeld (1996). If the gender differences predicted by evolutionary theorists emerge when there is no doubt that the affair was either purely sexual or purely emotional, this would support an evolutionary explanation, while providing evidence against the double-shot hypothesis.

The use of couples in this study provided an opportunity to measure the mate value of both individuals involved in the relationship. This allows an examination of the effects of an individual’s mate value relative to his or her partner on reactions to the hypothetical infidelity scenarios. This study will address the following two sets of hypotheses:

Gender Differences

Hypothesis 1a – Females will report greater anxiety-related distress in response to scenarios describing emotional infidelity compared to sexual infidelity. This effect will be mediated by the victim’s beliefs that her partner will be unfaithful in the future.

Hypothesis 1b – Males will report greater levels of indignation in response to scenarios describing sexual infidelity compared to emotional infidelity.

Hypothesis 1c – Males will be more likely to predict that they would end the relationship and will anticipate a greater level of difficulty in forgiving their partners in response to scenarios describing sexual infidelity compared to emotional infidelity. The effect will be mediated by increased levels of indignation in response to sexual infidelity.

Associations with Mate Value

Hypothesis 2a – Lower levels of relative mate value will be associated with higher levels of anxiety-related distress in response to either type of hypothetical infidelity.

Hypothesis 2b – Higher levels of relative mate value will be associated with higher levels of indignation in response to either type of hypothetical infidelity.

Hypothesis 2c – Individuals high in relative mate value will be more likely to end the relationship, less likely to forgive, and report greater motivations for avoidance and revenge in response to either type of hypothetical infidelity.

Method

Participants

Seventy-five heterosexual couples were recruited from the psychology department's subject pool at a large midwestern university for a study of romantic relationships. Couples were required to be currently involved in a serious romantic relationship with each other. For the purposes of this study, a serious romantic relationship was defined as an exclusive dating relationship with a person of the opposite

sex that has lasted at least one month. Participants ranged in age from 18 to 28 years with an average age of 19 ($SD = 1.60$). Their relationships ranged in length from just over one month (35 days) to about eight years (3,010 days) with a mean length of about two years ($M = 639$ days; $SD = 495$ days).

Most of the couples (58) described their relationship as “Dating (boyfriend/girlfriend),” four reported being married and 13 classified the relationship as “living together” or “engaged.” Each individual responded to the demographic items independently of his or her partner. With one exception, all of the couples agreed on the classification of their current relationship. In the one case where there was a discrepancy, the male member of the couple reported that they were engaged, whereas the female reported that they were living together. For the purpose of analyses at the couple level, this couple was assumed to be living together (the less serious of the two designations).

When asked if they were currently sexually active, most of the couples provided the same answer. In this case, 49 couples reported that they were currently sexually active and 21 reported that they were not. In the case of the five couples who disagreed, it was the males who reported being sexually active, whereas the females did not. For the purpose of analyses at the couple level, these five couples were assumed to be sexually active.

Among those couples who reported being sexually active, the average frequency of sexual activity was about four times per week ($M = 3.79$; $SD = 3.13$). The current relationship was the first sexual relationship for about half of these individuals (52.4%). Most of the participants reported having been faithful to their current partner. Only ten females and seven males reported that they had been unfaithful at any time during the

relationship. Participants were also asked whether they had children or not; however, only three couples reported any children so this measure will not be discussed further. At least one member of each couple received credit toward their research exposure requirement in Introductory Psychology. If both members of the couple were enrolled in the class, then each individual was given equal credit in exchange for their participation.

Measures

Mate Value

Four measures of mate value were used in this study. Two of these measures consisted of self-report scales and tapped each participant's perceived mate value, whereas the remaining two measures consisted of objective ratings of attractiveness and symmetry.

Self-reported Mate Value. The first self-report scale was designed for this study and is based on the Self Attributes Questionnaire (SAQ) developed by Pelham and Swann (1989). This measure uses the format and some items of the original SAQ with the addition of several attributes that previous work has shown to be important in the mate selection process (e.g., "physically attractive," and "ambitious/industrious") (Buss & Barnes, 1986; Buss, 1989). Participants were asked to rate both themselves and their partners on each attribute relative to other students of the same ages and sex on a 10-point scale ranging from 0 ("way BELOW average") to 10 ("way ABOVE average). Both versions of this scale (self and partner) demonstrated excellent reliability (α 's = .87 and .84 respectively). The specific items used and the instructions for the completion of this scale are included in Appendix A.

The second self report measure consisted of a scale developed by Rusbult and colleagues (1998) based on the interdependence model of relationship commitment. This scale measures three components of commitment in close relationships – satisfaction with the relationship, quality of alternatives, and the level of investment. Although not designed as a measure of mate value per se, the component labeled “quality of alternatives” could be conceptualized as a measure of perceived mate value relative to one’s partner. The items on this scale assess the availability and appeal of alternatives to the participant’s current relationship (e.g., “If I weren’t dating my partner, I would do fine – I would find another appealing person to date”). Participants who are higher in relative mate value should perceive better quality alternatives if the relationship were to end; thus, this subscale was used in this study as a measure of each participant’s mate value relative to his or her partner, or relative mate value (RMV).¹ The remaining two subscales provide a measure of relationship satisfaction and levels of investment in the relationship with items such as “I feel satisfied with our relationship,” and “Compared to other people I know, I have invested a great deal in my relationship with my partner” respectively. Participants reported their level of agreement with each item on this scale using a 9-point Likert scale ranging from 0 (“not at all”) to 8 (“extremely”). The quality of alternatives and satisfaction subscales both demonstrated excellent internal reliability (α 's = .85, .89), whereas the investment levels subscale demonstrated acceptable reliability (α = .69).

Physical Attractiveness. As the first objective measure of mate value, digital pictures were taken of each participant and his/her partner. These pictures were rated for attractiveness by eight undergraduate research assistants (four males and four females).

The judges were instructed to rate how physically attractive each participant was using a 9-point Likert scale ranging from 1 (“not at all attractive”) to 9 (“extremely attractive”). Female judges rated pictures of male participants and male judges rated pictures of female participants. Thus, each picture was rated by four opposite gender judges. The judges’ ratings demonstrated acceptable reliability (α 's = .64 for female judges and .82 for male judges), and were averaged for a final attractiveness score. In order to protect their identity, each participant was assigned a unique ID number. These ID numbers were written on laminated cards that the participants wore around their necks. Each picture was identified only by these numbers which were later matched to each participant’s original data.

Fluctuating asymmetry. As the final measure of mate value, each participant’s fluctuating asymmetry (FA) was measured and calculated. FA refers to deviations from bilateral symmetry in morphological traits. Random errors in development as well as environmental stressors such as pathogens can cause disturbances in cell division and growth, resulting in asymmetries in bilateral structures. Individuals with high developmental stability are better able to withstand these pressures and therefore exhibit lower levels of FA. Thus, low FA is indicative of health and vitality or “good genes.” In humans, low levels of FA have been linked with attractiveness and good health (Brown & Moore, 2003), both of which have been shown to be important indicators of mate value (Buss & Barnes 1986). As a result, lower levels of FA should be associated with higher mate value. Based on previous work, FA was calculated for this study from bilateral measurements taken of 9 traits: ear length, ear width, elbow width, wrist width, length of small, middle and ring fingers, ankle width, and foot width (Gangestad & Thornhill,

2003). These measurements were taken and recorded by trained undergraduate assistants using 6-inch calipers. As outlined by Gangestad and Thornhill (2003), Relative FA (absolute asymmetry divided by average trait size) was averaged across traits to create a composite FA index.

Reactions to hypothetical infidelity

Participants were asked to imagine that their current partner had been unfaithful and report how they would respond. Each couple was randomly assigned to read either a scenario describing a sexual affair with no emotional involvement or one describing an emotional affair with no sexual involvement. An example of each scenario is included in Appendix B. After reading the assigned scenario, participants responded to several items assessing how they would react and/or feel in the situation described. Two categories of reactions to the hypothetical infidelity scenarios were assessed – emotional reactions including indignation and anxiety, and predicted outcomes such as whether or not they would end the relationship and the extent to which they would be able to forgive their partner.

Emotional Reactions. First, emotional distress in response to the hypothetical infidelity scenario was assessed. Rather than simply asking about overall distress, a variety of specific emotions were addressed individually. Participants reported the extent to which they would experience each specific emotion on a 9-point Likert scale ranging from 0 (“not at all”) to 8 (“extremely”). From these individual ratings, two composites were created by averaging the scores for specific emotional reactions. The individual items used for each composite are listed in Table 1. The first composite represented levels of indignation and included two items assessing the levels of anger and hostility

experienced in response to the hypothetical affair. The second composite represented levels of anxiety and included 5 items tapping overall levels of anxiety-related distress. Both of these composite scales demonstrated acceptable reliability (α 's = .66 and .82 respectively).

Predicted Outcomes. Second, participants indicated how likely they would be to end the relationship in response to the scenario and predicted the amount of damage their relationship would suffer if the relationship did not end. In addition, participants reported the extent to which they would worry about their partner being unfaithful in the future (e.g. "As a result of this incident, I would worry that my partner might be unfaithful in the future."). Each of these items was scored on the same 9-point Likert scale described above.

Finally, participants were asked to report how likely they would be to forgive their partner in each case by indicating their level of agreement or disagreement with the following statement, "I would NEVER be able to forgive him or her completely." This item was scored on a 9-point Likert scale ranging from 0 ("strongly disagree") to 8 ("strongly agree"). Higher scores for this item indicated less willingness to forgive. In addition, avoidance and revenge motivations were assessed with a modified version of The Transgression-Related Interpersonal Motivations Inventory (TRIM), a scale developed by McCullough and colleagues (1998). Although the TRIM does not directly ask about forgiveness, several theorists have argued that the avoidance and revenge motivations captured by this scale are integrally related to the forgiveness process in that forgiveness should be associated with reductions in motivations for revenge and avoidance in close relationships (McCullough et al., 2000). This scale is designed such

that higher scores indicate greater motivations toward revenge and avoidance, translating into less forgiveness. In order to reduce the likelihood of obtaining a ceiling effect on these items, a 9-point Likert scale ranging from 0 (“strongly disagree”) to 8 (“strongly agree”) was used, rather than the standard 7-point scale. Both the avoidance and revenge scales demonstrated excellent internal reliability (α 's = .93 and .91 respectively).

Procedure

Couples were scheduled for a laboratory session either individually or in conjunction with one other couple. Two undergraduate research assistants (one male and one female) were assigned to each session. Upon arriving at their scheduled session, participants and their partners were given a brief overview of the study and allowed to read and sign an informed consent form. After informed consent had been obtained, each participant and his or her partner were photographed. At this point, males and females were ushered into separate rooms by a same-gender research assistant for the remainder of the study. At this point, each participant received a packet of questionnaires and was assured that his or her responses would be kept confidential from his or her partner.

During this phase of the study, participants were first asked to complete the self-report measures of mate value discussed above. In order to avoid any potential order effects, these measures were presented in counterbalanced order. Second, measurements of FA were taken as described above. After completing the mate value measurements, participants were asked to read and respond to the assigned infidelity scenario (sexual or emotional). Finally, each participant and his or her partner were both asked to provide basic demographic information about their current relationship, including the length of

the relationship, and whether there was any history of infidelity. After completing this packet, participants were thoroughly debriefed, thanked for their time and dismissed.

Results

Data Analysis Plan

Because the participants in this study were dating couples, their data are by definition not independent; therefore, traditional data analysis methods may not be appropriate. In order to address this issue of nonindependence, two data analytic approaches were employed in the current study. First, data from males and females were analyzed separately in order to address how each gender responds to different types of infidelity. This approach circumvents the problem of nonindependence completely; however, it is not without problems. As discussed by Campbell and Kashy (2002), this approach implicitly assumes that gender is an important factor and yet provides no way to test whether or not this assumption is true. Thus, this approach is appropriate in this study to examine how each gender responds to different types of infidelity, but not to address whether males and females differ from each other.

Hierarchical Linear Modeling (HLM) provides powerful analytical tools to study data that are organized hierarchically in more than one level (Raudenbush & Bryk, 2002). In this case, individuals are nested within couples. The level-1 model represents the relationships between the individual level variables and the dependent measures, whereas the level-2 model captures the influence of couple level variables (i.e. length of the relationship and whether the couple is sexually active). Thus, this technique allows for the examination of gender differences while taking into account the interdependent nature of data collected from individuals who are involved in romantic relationships.

In addition to the gender differences, this study is also designed to examine the influence of an individual's as well as his or her partner's mate value on reactions to hypothetical infidelity. In order to accomplish this goal, the Actor-Partner Interdependence Model (APIM) proposed by Kashy and Kenny (2000) was employed using the program HLM (Raudenbush, Bryk, Cheong & Congdon, 2004). This approach models the effects of an individual's independent variable score on his or her dependent variable score (the actor effect) and his or her partner's dependent variable score (the partner effect) (Campbell & Kashy, 2002). In order to apply the APIM model to these data, each individual's level-1 data set included scores representing his or her own mate value as well as scores representing his or her partner's mate value.

Using the techniques described above, a series of HLM models were conducted examining the effects of each participant's own mate value score and his or her partner's score on the two measures of emotional reactions (indignation and anxiety) in response to the hypothetical infidelity, as well as each of the outcomes (inability to forgive, avoidance and revenge motivations, likelihood of breaking up and relationship damage). Each of these models also included the participant's gender as a level-1 predictor. Level-2 predictors included the type of affair, length of the relationship, and whether or not the couple was sexually active. These models also included the interaction between type of affair and gender and the interaction between type of affair and each participant's mate value.

Descriptive Statistics

The correlations between indignation and anxiety in response to the hypothetical infidelity scenarios and each predicted outcome are summarized in Table 2. As shown in

this table, levels of indignation were significantly correlated with levels of anxiety and each of the outcome measures (inability to forgive, avoidance and revenge motivations, likelihood of breaking up and relationship damage), p 's < .01. Anxiety on the other hand, correlated only with the inability to forgive (p < .05) and revenge motivations (p < .01). In addition, all of the outcome measures were significantly correlated with each other (p 's < .05).

Beliefs about whether or not the hypothetical infidelity described in the scenario represented an increased risk that their partner would be unfaithful in the future were also significantly correlated with each category of emotional reactions and each outcome measure, p 's < .01. Perceptions of increased risk of future infidelities were associated with more negative reaction in response to the infidelity. Further analysis of this measure revealed that males reported an increased risk of future infidelities in response to the sexual affair ($M = 7.22$, $SD = 1.50$) compared to the emotional ($M = 6.19$, $SD = 1.87$), $F(1, 71) = 6.78$, $p < .05$; however, this comparison was only marginally significant for females ($M = 7.47$, $SD = 1.08$ for sexual affairs and $M = 6.83$, $SD = 1.90$ for emotional affairs), $F(1, 71) = 3.09$, $p = .08$.

Gender-Specific Reactions

Females

The means and standard deviations for each of the emotional reactions and outcome measures are summarized in Table 3. As shown in this table, among females, there was no difference in levels of anxiety or indignation in response to sexual versus emotional affairs (p 's > .15). Thus, hypothesis 1a was not supported in this study. However, regression analyses revealed that type of affair did predict relationship damage,

$\beta = -.24, p < .05$, but no other outcomes. In the case of relationship damage, female participants predicted that their relationships would suffer more damage in response to the sexual affair versus the emotional affair.

Males

As predicted by hypothesis 1b, males reported greater levels of indignation in response to the sexual affair compared to the emotional, $F(1, 74) = 6.95, p < .01$. In support of hypothesis 1c, a series of multiple regression analyses controlling for length of the relationship and whether or not the couple was sexually active revealed that, among males, type of affair (sexual vs. emotional) was a significant predictor of the inability to forgive, $\beta = -.29, p < .05$, avoidance motivations, $\beta = -.37, p < .01$, the likelihood that the relationship would end, $\beta = -.40, p < .01$ and relationship damage given the relationship did not end, $\beta = -.31, p < .01$. As shown in Table 3, the sexual affair was associated with more negative outcomes. Compared to emotional affairs, sexual affairs were perceived as harder to forgive, likely to result in greater motivations for avoidance and a greater likelihood of breaking up, as well as more extensive damage to those relationships that remained intact.

After establishing that type of affair was a significant predictor of both indignation and the outcomes discussed above, further analyses were conducted to determine whether levels of indignation mediated the relationships between type of affair and each outcome. Since type of affair did not predict revenge motivations, this outcome was excluded from the mediational analyses. Each remaining mediational model was tested according to the recommendations of Baron and Kenny (1986). The results of these analyses are summarized in Table 4.

As discussed above, the first step of the analysis demonstrated that type of affair was a significant predictor of each outcome, controlling for the length of the relationship and whether or not the couple was sexually active. The second step of the analysis demonstrated that type of affair did, in fact, predict indignation (the proposed mediator), also controlling for length of relationship and whether the couple was sexually active, $\beta = -.27, p < .05$. The final step in the analysis examined whether type of affair remained a significant predictor of each outcome when the proposed mediator (indignation) was included in the model.

These multiple regression analyses revealed that the relationships between type of affair and the inability to forgive and type of affair and avoidance motivations were significantly mediated by levels of indignation. After including indignation in the models, the relationship between inability to forgive and type of affair was no longer significant, whereas the magnitude of the relationship between avoidance motivations and type of affair was reduced, but still significant. In both cases, indignation remained a significant predictor (p 's $< .01$). Sobel tests on the differences between the regression weights for inability to forgive and avoidance motivations before and after including indignation in the model revealed that the change across models was significant in both cases (p 's $< .05$).

Indignation did not mediate the relationships between type of affair and the likelihood of breaking up or type of affair and relationship damage. As shown in Table 4, type of affair was a significant predictor of both outcomes with or without indignation included in the model. Sobel tests on the differences between the regression weights

before and after including indignation in the model confirmed that there was no significant change across the two models (p 's > .10).

Gender Differences

Next, in order to examine whether males and females differed from each other in how they responded to the hypothetical infidelity, a series of HLM analyses were conducted examining the gender differences as well as the interaction between gender and type of affair on the two measures of emotional reactions and each outcome measure. These models controlled for length of the relationship, and whether or not the couple was sexually active. The results of these analyses revealed a significant difference between males and females for the level of anxiety reported in response to either type of affair, $B = -1.57, p < .01$.² As shown in Table 3, females, relative to males, predicted that they would experience higher levels of anxiety in response to either type of infidelity. In addition, type of affair was a significant predictor of relationship damage, $B = -.90, p < .05$. Consistent with the results discussed above, both males and females predicted that the sexual affair would result in higher levels of relationship damage compared to the emotional affair.

There was also a significant interaction between type of affair and gender in predicting avoidance motivations, $B = -1.60, p < .05$, controlling for attractiveness (participant's and partner's)³. This interaction is shown in Figure 1. Simple slopes tests revealed that the relationship between type of affair and avoidance motivations was significant only for the males, $B = -1.92, p < .05$. In this case, males predicted that they would experience more avoidance motivations in response to the sexual affair compared to the emotional. In addition, for sexual affairs, males reported greater levels of

avoidance motivations compared to females, $B = .46, p < .05$. Males and females did not differ in avoidance motivations when the affair was emotional.

Mate Value

Descriptive Statistics

The means and standard deviations for each measure of mate value are summarized in Table 5. As shown in the table, males and females differed significantly on both objective measures of mate value (FA and attractiveness, $t(146) = 3.03, p < .01$ and $t(146) = -6.43, p < .01$ respectively) and on their perceptions of their quality of alternatives, $t(146) = 4.45, p < .01$. In the case of the objective measures (FA and attractiveness), the females in this study were judged to be higher in mate value on average than the males. The males, however, rated their quality of alternatives as higher on average than the females.

There was no difference between males and females for ratings of their partner's mate value. However, participants did rate their partners more positively than the partners rated themselves. Females gave their partners an average score of 7.14 ($SD = .86$) which is significantly higher than the males' average self-rating of 6.78 ($SD = 1.04$), $t(74) = 2.47, p < .05$. Similarly, male participants gave their partners an average score of 6.95 ($SD = .97$) which is significantly higher than the females' average self rating of 6.53 ($SD = .94$), $p < .01$. Although this difference is potentially interesting, in this study, we are interested in examining the effects of perceived mate value versus more objective measures. Therefore, it is most appropriate to use the participants' ratings of their partners rather than the partners' own ratings in the analyses examining self-reported mate value.

The correlations between each measure of mate value are listed in Table 6. As shown in the table, perceived mate value as measured by the self-ratings was significantly correlated with participants' ratings of their partners' mate value, $r = .53, p < .01$. In addition, quality of alternatives was significantly and negatively correlated with partner ratings, $r = -.28, p < .01$, but only marginally correlated with self-ratings, $r = .14, p = .10$. For this study, Fluctuating Asymmetry (FA) failed to correlate with any other measure. Because FA was also not a significant predictor in any other analysis conducted, this mate value measure will not be discussed further.

HLM analyses

As discussed above, in order to examine the relationship between individual and partner mate value on reactions to the hypothetical scenarios, a series of HLM analyses were conducted for each of the reaction and outcome measures. Each of these models included the participant's gender, his or her mate value score and his or her partner's score on the same measure. Level-2 variables included type of affair (sexual or emotional), length of the relationship, and whether or not the couple was sexually active. The influence of each measure of mate value on reactions to the infidelity scenarios are summarized in Table 7.

Emotional Reactions. As shown in Table 7, none of the mate value indices were significantly associated with levels of anxiety in response to the infidelity scenarios. Thus, the hypothesis that individuals lower in relative mate value will experience greater levels of anxiety in response to infidelity was not supported in this study (hypothesis 2a). However, as predicted by hypothesis 2b, higher levels of relative mate value as measured by the quality of alternatives scale predicted greater levels of indignation in response to

either type of infidelity, $B = 2.59, p < .05$. In addition, both measures of absolute mate value (self-ratings and attractiveness) were also associated with indignation in response to infidelity. In both cases, higher levels of absolute mate value were associated with greater levels of indignation ($B = 2.29, p < .05$ for self-ratings of mate value and $B = 2.73, p < .01$ for attractiveness).

Outcomes. Quality of alternatives was also significantly associated with revenge motivations, $B = 2.01, p < .05$. When the quality of alternatives was perceived as high, the hypothetical infidelity scenarios elicited greater motivations for revenge, providing partial support for hypothesis 2c. Interestingly, motivations for revenge were also significantly associated with participants' ratings of their partners' mate value, $B = 2.01, p < .05$. Participants who perceived their partner to be high in mate value reported less motivation for revenge.

Further analysis revealed that the relationship between quality of alternatives and revenge motivations was mediated by levels of indignation. As noted above, quality of alternatives was also a significant predictor of indignation (the proposed mediator). However, when indignation and the quality of alternatives were both included in a model as predictors of revenge motivations, the previously significant relationship between quality of alternatives and revenge motivations was no longer significant, $B = .17, p = .25$. A Sobel test on the difference between the regression weights for quality of alternatives before and after including indignation in the model confirmed that the change across models was significant, $Z = 2.34, p < .05$. Thus, indignation appears to account for a substantial portion of the relationship between quality of alternatives and revenge motivations.

In contrast to the influence of relative mate value on revenge motivations discussed above, the likelihood of breaking up and relationship damage if the relationship did not end were significantly associated with both measures of absolute mate value (self-ratings and attractiveness) rather than relative mate value as predicted in hypothesis 2c. Higher levels of both self-reported mate value and attractiveness were associated with a greater likelihood of breaking up ($B = 2.15, p < .05$ and $B = 2.19, p < .05$ respectively) and higher levels of predicted relationship damage ($B = 3.09, p < .05$ and $B = 2.85, p < .01$). Further analyses revealed that each of these relationships was mediated by levels of indignation.

As noted above, both self-reported mate value and attractiveness were significant predictors of indignation (the proposed mediator). However, when indignation and self-reported mate value were both included in a model as predictors of relationship damage, the previously significant relationship between self-reported mate value and relationship damage was no longer significant, $B = .17, p = .22$. A Sobel test on the difference between the regression weights for self-reported mate value before and after including indignation in the model confirmed that the change across models was significant, $Z = 2.12, p < .05$. Thus, indignation appears to account for a substantial portion of the relationship between self-reported mate value and relationship damage. In addition, the relationship between self-reported mate value and the likelihood of breaking up was also no longer significant when indignation was included in the model, $B = .26, p = .21$. However, in this case, the Sobel test comparing the regression weights before and after including indignation in the model was only marginally significant, $Z = 1.81, p = .07$.

Similarly, when indignation and attractiveness were both included in models predicting each outcome (likelihood of breaking up, and relationship damage), the previously significant relationships between attractiveness and each of the outcomes were no longer significant (p 's > .12). Sobel tests on the difference between the regression weights for perceived mate value before and after including indignation in the models confirmed that the change across models was significant for relationship damage, $Z = 2.11$, $p < .05$, and marginally significant for the likelihood of breaking up, $Z = 1.74$, $p = .08$.

Supplementary analyses. Further analyses revealed that type of affair (sexual vs. emotional) interacted with quality of alternatives, $B = -.37$, $p < .05$, participants' perceptions of their partners' mate value, $B = .62$, $p < .05$, and participants' attractiveness, $B = -.53$, $p < .05$, for predictions of indignation. The interaction between quality of alternatives and type of affair is shown in Figure 2. Simple slopes tests revealed that when the quality of alternatives was perceived to be high, the sexual affair elicited more indignation than the emotional affair, $B = -1.36$, $p < .05$. In contrast, when quality of alternatives was low, there was no difference in levels of indignation in response to sexual or emotional affairs, $B = -.48$, $p > .20$. In addition, among participants who read about a sexual affair, higher quality of alternatives were associated with greater levels of indignation, $B = -1.36$, $p < .05$. For emotional affairs, there was no effect of quality of alternatives on levels of indignation, $B = -.04$, $p > .50$.

The interaction between participants' ratings of their partners' mate value and type of affair is shown in Figure 3. Simple slopes tests for this interaction revealed that

participants who rated their partners lower in mate value reported higher levels of indignation in response to a sexual affair compared to an emotional affair, $B = -1.01, p < .05$. However, participants who rated their partners higher in mate value predicted that they would experience the same level of indignation in response to either type of affair, $B = .14, p > .50$. The simple slopes tests examining the effect of participants' ratings of their partners' mate value on levels of indignation within each type of affair were only marginally significant ($B = -.33, p = .14$ for sexual affairs and $B = .29, p = .17$ for emotional affairs); however, the patterns were in opposition to each other. For an emotional affair, participants reported the greatest levels of indignation when they perceived that their partner was high in mate value. In contrast, for a sexual affair, participants reported the greatest levels of indignation when they perceived that their partner was low in mate value.

The interaction between type of affair and participants' attractiveness is shown in Figure 4. Simple slopes tests revealed that participants who were judged to be high on attractiveness predicted that they would experience higher levels of indignation in response to the sexual affair compared to the emotional affair, $B = -.86, p < .05$. There was no difference for levels of indignation in response to the two types of affairs when attractiveness was low, $B = -.58, p > .20$. In addition, among participants who read about a sexual affair, higher levels of attractiveness were associated with greater levels of indignation, $B = .49, p < .01$. However, there was no effect of attractiveness on the levels of indignation among participants who read about an emotional affair, $B = -.03, p > .50$.

Discussion

These results provide strong evidence for the prediction that males respond more negatively to sexual compared to emotional infidelity. In response to the sexual affair, males in this study reported greater levels of indignation, a greater likelihood that the relationship would end, less forgiveness, greater avoidance motivations and higher levels of relationship damage if they did not break up with their partner. In addition, the relationships between type of affair and forgiveness and type of affair and avoidance motivations were mediated by levels of indignation. Thus, it appears that indignation accounts for a substantial portion of the relationship between type of affair and the ability to forgive and type of affair and avoidance motivations.

Although the evolutionary hypotheses about how males should respond to each type of infidelity were largely supported in this study, the results for females were not as clear. For females, type of affair did not appear to influence their emotional responses to the infidelity scenarios, and was not related to their predictions about whether they would end the relationship as a result of the affair or their ability to forgive their partners. Although not direct support for the double-shot hypothesis, these results suggest that, at least for females, beliefs that an emotional affair implies sex and is therefore more severe than a purely sexual one might be an important predictor of reactions to infidelity. This idea could easily be tested in future studies by including a third condition in which the affair described includes both an emotional and a sexual component. If females reacted more negatively to this combined scenario compared to a purely sexual one and a purely emotional one similar to the scenarios used in this study, this would provide support for the double-shot hypothesis proposed by Harris and Christenfeld (1996).

As predicted, higher levels of mate value were associated with greater levels of indignation in response to either type of infidelity. This relationship was significant for all three measures of mate value examined in this study. Both relative mate value (quality of alternatives) and absolute mate value (perceived and attractiveness) predicted levels of indignation in response to infidelity. Interestingly, the effects of both perceived mate value and objective ratings of attractiveness were similar, despite the fact that the two measures were uncorrelated with each other. Participants who perceived themselves to be higher in mate value and those who were judged to be most attractive reported a greater likelihood of ending the relationship and predicted higher levels of damage if the relationship remained intact. In both cases, these effects were mediated by levels of indignation, indicating that levels of indignation account for a substantial portion of the relationship between these two outcomes and both perceived and objective mate value.

In contrast, revenge motivations seemed to be related not to the victim's mate value but to his or her partner's. Participants who perceived that their partners were lower in mate value and those who believed that their quality of alternatives were high reported greater motivations for revenge in response to either type of infidelity. This result suggests an interesting disconnection between levels of indignation and revenge motivations in response to infidelity. Although the common perception is that motivation for revenge occurs as a direct result of feelings such as indignation in response to an interpersonal offense, in the case of romantic relationships the desire for revenge might be tempered by the mate value of one's partner despite high levels of indignation. Although this finding was not specifically predicted, it fits nicely with an evolutionary account of the importance of mate value relative to one's partner. An individual who is

lower in mate value relative to his or her partner might be very angry in response to infidelity, but still decide to remain in the relationship. In this situation, motivations for revenge would be counterproductive to rebuilding a damaged relationship. However, an individual who has been betrayed by a lower quality mate might be able to repair some of the damage to his or her reputation and status by publicly seeking revenge against the transgressor.

There was no evidence in this study linking mate value to difficulty in forgiving or levels of anxiety; however, these results might be the result of limitations within this study rather than evidence that mate value is not an important factor in predicting anxiety or forgiveness. First, it could be argued that the dependant measure used for forgiveness was not an adequate way to measure this construct. The measure used in this study consisted of only one item in which participants reported *how difficult it would be* for them to forgive their partner. It is entirely possible that the *difficulty of forgiving* and *actually forgiving* someone who is close to us represent two separate constructs. In other words, in the context of infidelity, forgiveness may be extremely difficult regardless of the influence of other variables such as mate value; however, this difficulty by itself may not prevent an individual who is lower in relative mate value from eventually granting forgiveness to his or her partner despite the difficulty. In order to address this problem, the next study will include an expanded forgiveness scale measuring actual levels of forgiveness granted rather than the concept of difficulty in offering forgiveness.

Second, but perhaps more important, is the concern that the use of hypothetical infidelity scenarios might be problematic. The use of hypothetical scenarios in this study allowed for the manipulation of type of infidelity and provided a level of experimental

control that could not be ethically achieved with any other method. However, previous researchers have argued that participants' predictions of how they would respond to hypothetical scenarios might not correspond to actual behavior for a variety of reasons (e.g., Brown, 2003; Brown & Phillips, 2005; Gilbert, Lieberman, Morewedge, & Wilson, 2004). This potential discrepancy between predictions in response to hypothetical scenarios and actual behavior may be particularly problematic when assessing such value-laden constructs as forgiveness and infidelity (see Brown, 2003 for a discussion of these issues). In order to address this concern, in the next study, participants who have experienced infidelity within a previous or current relationship were asked to report how they actually responded to this incident.

STUDY TWO: RETROSPECTIVE ACCOUNTS OF ACTUAL INFIDELITY

Overview of Study Two

In this study, participants who had been victims of infidelity within a past or current relationship described their experiences and reported how they responded. The following four hypotheses were addressed in this study:

The Effects of Gender

Hypothesis 1a – Males, relative to females, will report lower levels of forgiveness and be more likely to have ended the relationship following infidelity.

Hypothesis 1b – For females, infidelity that is perceived to have had a strong emotional component will be associated with more severe consequences.

Specifically, more emotional affairs will elicit greater levels of anxiety-related distress, greater likelihood of relationship dissolution, and lower levels of forgiveness.

The Effects of Mate Value

Hypothesis 2a – Lower levels of absolute mate value will be associated with greater levels of anxiety-related distress in response to infidelity.

Hypothesis 2b – Higher levels of absolute mate value will be associated with greater levels of indignation in response to infidelity, resulting in a greater likelihood of relationship dissolution and less forgiveness.

Method

Participants

One-hundred thirty-four participants (85 females and 49 males) who reported having been the victim of infidelity were recruited to participate in a study about romantic relationships. Participants ranged in age from 18 to 54 with an average age of 20.82 years. In exchange for participating in this study, participants received credit towards their research exposure requirement in Introductory Psychology.

Measures

Mate Value

For this study, mate value was assessed using three of the four methods included in Study 1. The quality of alternatives scale was not used in this study because the items on this measure specifically refer to a current relationship and therefore are not appropriate for participants who are no longer involved in a relationship with the person who cheated on them (Rusbult et al., 1998). The remaining three indices of mate value (self-reported, attractiveness ratings, and FA) were measured following the procedures outlined in Study 1. The reliability of these measures was comparable to those reported

in Study 1 (self-reported mate value: $\alpha = .85$; attractiveness: $\alpha = .81$ for male judges and $.70$ for female judges).

Reactions to infidelity

In this study, participants were asked to recall an actual incident when someone with whom they were romantically involved was unfaithful and report how they responded. As in Study 1, two categories of reactions were assessed: emotional reactions including indignation and anxiety, and outcomes such as whether or not the relationship ended and levels of forgiveness.

Emotional Reactions. The items used in Study 1 to assess emotional reactions were rephrased in this study to reflect how the actual incident made the participant feel when he or she first found out about the event. (e.g. “To what extent did you feel angry with your partner when you first found out about this event?”). With the exception of these changes in wording, emotional reactions were assessed with the same items used in Study 1. As in Study 1, two composites were created representing levels of indignation and anxiety in response to the affair. The reliability of these items was comparable to Study 1 (α 's = $.64$ and $.82$ respectively).

Outcomes. First, participants were asked to indicate whether or not the relationship had ended as a direct result of the affair. Participants who reported that the relationship had ended were also asked whether the decision to break up was theirs, their partner's or a mutual one. Participants who reported that the relationship did not end were asked to rate the extent to which the incident had damaged their relationship on a 9-point Likert scale ranging from 0 (“not at all”) to 8 (“extremely”).

Second, current levels of forgiveness were assessed using two scales. First, avoidance and revenge motivations were measured with the TRIM. This was the same scale used in Study 1 except that the items were rewritten to reflect a past offense rather than a hypothetical one. As in Study 1, both of these subscales demonstrated excellent reliability in this study (α 's = .95 and .92).

The second measure of forgiveness was a scale designed by Brown and Phillips (2005) as a direct measure forgiveness following a specific offense. This scale consists of seven items tapping overall levels of forgiveness towards the offender. (e.g. "Even though his/her actions hurt me, I do *not* feel ill-will toward him/her" and "I have forgiven this person"). This scale is scored so that higher scores indicate higher levels of forgiveness. In the present study, this scale demonstrated excellent reliability ($\alpha = .83$).

Event-specific information. In addition to measures tapping participants' reactions to the affair, a series of questions about the specific characteristics of the event and their relationship to the offender at the time it happened were included. Participants were asked to indicate the type of relationship ("dating," "living together," "engaged," or "married") and to rate how close they felt to this person before the affair occurred. Closeness was rated on a 7-point Likert scale ranging from 0 ("not at all close") to 6 ("very close"). Participants also reported whether or not they were sexually active at the time, and whether or not their partner apologized. Those who received an apology rated its perceived sincerity on a 7-point Likert scale ranging from 0 ("not at all sincere") to 6 ("very sincere"). Finally, participants were asked to rate how responsible they felt that each person involved (their partner, the interloper, and themselves) was for the affair. The responsibility of each person was rated on a 7-point Likert scale ranging from 0

("Not at all his/her fault") to 6 ("Completely his/her fault"). Following these continuous ratings of responsibility, participants indicated which of the three people they felt was most responsible.

Type of affair (sexual vs. emotional) was assessed three ways. First, participants were asked to indicate whether the affair was "mostly sexual" or "mostly emotional." Second, they rated the level of emotional involvement that their partner had with the other person on a 7-point Likert scale ranging from 0 ("purely sexual") to 6 ("he/she was deeply in love"). Third, participants indicated whether or not their partner had actually engaged in sexual intercourse with this person.

Procedure

Individuals who participated in prescreening sessions and reported having been the victim of infidelity were contacted via email or phone and invited to participate in a study about romantic relationships. Participants who agreed to participate in the study were scheduled in small groups of up to 15 individuals. These sessions were administered by one to four trained research assistants, depending on the number of participants in each session. One research assistant was assigned to each session for every four participants. Upon arriving at their scheduled session, participants were first given a brief overview of the study and allowed to read and sign an informed consent form. After informed consent had been obtained, each participant was photographed and received a packet of materials.

First, participants were asked to recall a time from their own life in which someone with whom they were romantically involved had been unfaithful or cheated on them and provide a brief description of this event. After taking a few minutes to recall

the event, participants provided details about the affair and reported their reactions by responding to the measures discussed above. Finally, participants completed the self-reported measure of mate value used in Study 1 (perceived mate value). While participants were completing the packets of questionnaires, the trained research assistants took FA measurements of each person using the methods described in Study 1. Once the questionnaire packet and the FA measurements were completed, participants were thoroughly debriefed, thanked for their time and dismissed.

Results

Descriptive Statistics

Relationship Characteristics

Descriptive statistics describing the participants' relationships at the time of the affair are summarized in Table 8. As shown in this table, most of the participants categorized their relationships as "Dating" (97%). Only 4 participants classified their relationships as more serious ("Living together," "Engaged," or "Married"). Just over half (56.7%) reported that they were sexually active at the time of the affair. Participants also reported that they felt relatively close to their partners before the affair occurred ($M = 4.84$, $SD = 1.13$), and they had been involved in a relationship with this person for just over one year on average ($M = 1.15$ years, $SD = .99$). About half of the participants (57%) reported having been unfaithful themselves to a romantic partner at least once in the past.

Infidelity Descriptions

Descriptive statistics describing the characteristics of the affairs reported by participants are summarized in Table 9. As shown in the table, the majority of

participants (61.9%) characterized the affair as mostly sexual rather than mostly emotional. In addition, the average rating for emotional involvement was relatively low ($M = 2.09$, $SD = 1.76$). However, about half (45.5%) of the participants reported that their partner had not engaged in sexual intercourse with the other person. There was no difference in the level of emotional involvement reported between affairs that included a sexual relationship ($M = 2.04$, $SD = 1.72$) and those that did not ($M = 2.15$, $SD = 1.82$), $F(1, 132) = .12$, $p > .50$. These results seem to suggest that whether or not the affair included a sexual relationship and the level of emotional involvement are indeed independent aspects of an affair.

On average, the affairs reported occurred about 2 years prior to data collection ($M = 2.19$ years, $SD = 1.80$). Because most of the participants were college freshman, a large portion of these affairs occurred while the participants were still in high school. Only 38 participants reported affairs that had occurred within the last year. When asked to assign blame to one person (themselves, their partner, or the interloper), most of the participants listed their partner as most blameworthy (69.4%), whereas about 17% listed the interloper as most blameworthy and only 4.5% listed themselves.

Reactions to Infidelity

There was a problem with a floor effect for revenge motivations in response to the affairs. This scale had a mean of 1.00 ($SD = 1.48$) on a scale ranging from 0 to 8. Further investigation revealed that 71% of participants had a composite score of 1 or less for this measure. In light of these problems, the revenge measure was not used in any analyses and will not be discussed further.

The correlations between the emotional reactions to the affair (indignation and anxiety) and the remaining outcome measures (forgiveness, avoidance, relationship dissolution, and relationship damage) are shown in Table 10. The correlations shown for relationship damage include only those participants who reported that the relationship did not end as a result of the affair ($N = 35$; 19 females and 16 males). As shown in the table, indignation was significantly (positively) correlated with anxiety, avoidance, relationship dissolution and relationship damage, and negatively correlated with forgiveness, p 's $< .05$. Higher levels of indignation were associated with greater levels of anxiety, avoidance motivations, relationship damage, and a greater likelihood that the relationship ended. Similarly, higher levels of indignation were associated with lower levels of forgiveness. In contrast, anxiety was not significantly correlated with any of the other outcome measures.

The relationships between each of the measures of type of affair (sexual vs. emotional) and reactions to the affair are summarized in Table 11. As shown in this table, participants were more likely to report that the relationship had ended in response to an affair that they perceived to be mostly emotional, $F(1, 130) = 6.39, p < .05$. Specifically, 86% of participants who identified the affair as “mostly emotional” reported that the relationship ended as a result of the affair. In contrast, only 66% of participants who identified the affair as “mostly sexual” reported that the relationship ended. Consistent with this finding, level of emotional involvement was significantly correlated with the likelihood that the relationship ended, such that higher levels of emotional involvement were associated with a greater likelihood that the relationship ended as a result of the affair. In addition, in response to affairs that were identified as “mostly emotional,”

females reported higher levels of indignation ($M = 6.79$, $SD = 1.55$) than males ($M = 5.55$, $SD = 1.63$), $F(1, 47) = 7.32$, $p < .01$. There were no other significant gender differences across the three measures of affair type.

In contrast, affairs that included a sexual relationship seemed to be associated with more severe consequences than affairs that did not involve sex. Specifically, participants reported lower levels of forgiveness, $F(1, 132) = 8.91$, $p < .01$, and more avoidance motivations, $F(1, 132) = 14.86$, $p < .01$, in response to affairs in which their partners had engaged in sexual intercourse with the other person compared to affairs that did not involve a sexual relationship. In addition, participants who reported that the affair involved a sexual relationship between their partner and the other person were also more likely to report that the relationship had ended as a result, $F(1, 132) = 11.29$, $p < .01$.

Gender Effects

Means and standard deviations for each of the emotional reactions and the outcome measures are shown in Table 11. As shown in the table, compared to males, females reported higher levels of both indignation, $F(1, 133) = 8.08$, $p < .01$, and anxiety, $F(1, 133) = 4.50$, $p < .05$. Among participants who did not break up as a result of the affair, there was a marginally significant difference between males and females for the amount of relationship damage, $F(1, 34) = 3.44$, $p = .07$. Consistent with predictions (hypothesis 1a), males reported higher levels of relationship damage as a result of the affair. Males and females did not differ on any of the other outcome measures.

The prediction that for females, infidelity perceived to have had a strong emotional component will be associated with more severe consequences (i.e. higher levels of anxiety-related distress, a greater likelihood of relationship dissolution, and

lower levels of forgiveness) was not supported in this study (hypothesis 1b). As shown in Table 11, type of affair (sexual vs. emotional) and levels of emotional commitment were associated with relationship dissolution. However, these effects were significant for both males and females, indicating an overall effect of the level of emotional commitment regardless of gender. Participants who reported that the relationship ended as a result of the affair also reported higher levels of emotional involvement for the affair ($M = 2.45$, $SD = 1.68$) compared to participants who reported that the relationship did not end ($M = 1.42$, $SD = 1.75$), $F(1, 129) = 9.03$, $p < .01$.

Gender Interactions

Supplementary analyses revealed that whether or not the affair included a sexual relationship interacted with gender predicting avoidance motivations, $F(1, 115) = 4.01$, $p < .05$, controlling for time since the offense and the level of emotional involvement. This interaction is shown in Figure 5. Further analysis revealed that females reported greater levels of avoidance motivations when the affair included a sexual relationship, $p < .01$, compared to an affair that did not include a sexual relationship. In contrast, whether or not the affair involved a sexual relationship did not significantly affect the levels of avoidance motivations reported by males, $p > .25$. In addition, when the affair did not include a sexual relationship, there was a marginally significant gender difference in the levels of avoidance motivations reported, $p = .09$, with females reporting lower levels of avoidance motivations than males. However, there was no difference in the level of avoidance motivations reported by males and females when the affair included a sexual relationship, $p > .50$.

Further analysis revealed that, for females, the relationship between whether or not the affair included sex and avoidance motivations was mediated by levels of trust. Regression analyses confirmed that, for females, whether or not the affair involved sex was a significant predictor of avoidance motivations, controlling for the level of emotional involvement, $\beta = .44, p < .01$. As discussed above, affairs that included a sexual relationship were associated with greater avoidance motivations compared to affairs that did not include a sexual relationship. In addition, whether or not the affair included a sexual relationship was also a significant predictor of trust (the proposed mediator), $\beta = .38, p < .01$. When levels of trust and whether or not the affair included a sexual relationship were entered into the regression model together, the relationship between avoidance and whether or not the affair included sex was reduced ($\beta = -.19, p < .05$). Sobel tests on the difference between the regression weights for whether or not the affair included sex before and after including levels of trust in the models confirmed that the change across models was significant ($Z = 3.48, p < .01$). Thus, levels of trust appear to account for a substantial portion of the relationship between whether or not the affair included sex and avoidance motivations among women.

Mate Value

Descriptive Statistics

The means and standard deviations for each measure of mate value are summarized in Table 13. As shown in the table, males and females differed significantly on levels of attractiveness, $t(127) = 2.41, p < .05$. As in Study 1, the females were judged to be significantly more attractive on average than males. There was no difference between males and females for FA or perceived mate value. In this study, perceived mate

value and the attractiveness ratings were significantly correlated with each other, $r = .18$, $p < .05$. Participants who perceived themselves to be higher in mate value were also judged to be more attractive. As in Study 1, FA failed to correlate with either perceived mate value or attractiveness and will not be included in the results discussed below.

Mate Value Analyses

First, a series of multiple regression analyses were conducted to examine whether either measure of mate value (perceived or attractiveness ratings) was a significant predictor of participants' emotional reactions to the affairs (indignation and anxiety), and the outcome measures (forgiveness and avoidance motivations). Each analysis was conducted controlling for participants' gender, the level of emotional involvement and whether or not the affair involved a sexual relationship.

Neither measure of mate value (attractiveness ratings or self-reported) was associated with levels of anxiety in response to the affairs (β 's = .04 and -.04 respectively, p 's > .50). Thus, hypothesis 1a was not supported in this study. In contrast, attractiveness was a significant predictor of indignation, $\beta = .27$, $p < .01$, providing partial support for hypothesis 2b. As predicted, higher levels of attractiveness were associated with greater levels of indignation in response to the affairs. However, neither perceived mate value nor attractiveness was significantly associated with forgiveness or avoidance. In addition, participants who reported that the relationship ended and those whose relationships remained intact did not differ in average levels of attractiveness or perceived mate value, p 's > .50.

Supplementary Analyses

A final supplemental analysis was conducted examining the influence of mate value on the amount of relationship damage reported by participants whose relationships did not end as a result of the affair. This sample consisted of 35 individuals (19 females and 16 males). For this sample of participants, attractiveness was significantly associated with levels of relationship damage, controlling for gender and whether or not the couple was sexually active at the time, $\beta = .36, p < .05$. Consistent with hypothesis 2b, higher levels of attractiveness were associated with increased levels of relationship damage. Further analysis revealed that the relationship between attractiveness and relationship damage was mediated by levels of indignation. Attractiveness was also found to be a significant predictor of indignation, $\beta = .55, p < .01$ such that higher levels of attractiveness were associated with higher levels of indignation. However, when both attractiveness and indignation were included in the same model predicting relationship damage, the previously significant association between attractiveness and relationship damage was no longer significant, $\beta = .07, p > .50$, whereas indignation remained a significant predictor, $\beta = .52, p < .05$. A Sobel test on the difference between the regression weights for attractiveness before and after including indignation in the model confirmed that the change across models was significant, $Z = 2.12, p < .05$. Thus, it appears that increased levels of indignation in response to infidelity appear to account for a substantial portion of the relationship between attractiveness and relationship damage.

Discussion

The results of this study provide limited support for evolutionary predictions about how males and females should react to infidelity. Although the predictions that

males would report lower levels of forgiveness and be more likely to end the relationship following infidelity was not supported, among participants whose relationships did not end as a result of the affair, males reported greater levels of relationship damage than females did. This is consistent with evolutionary theories concerning the potential costs of infidelity for males. Considering the risk of cuckoldry, it would be adaptive for a male who chooses to remain in a relationship after his partner has strayed to be on guard for any potential signs of a second affair. In practice, this extra vigilance is likely to result in increased jealousy and possessive behavior, both of which are likely to have a negative impact on the relationship.

In addition, the predicted gender difference for forgiveness and avoidance emerged when the affair did not include a sexual relationship. For affairs that did not include sex, males, relative to females, reported greater avoidance motivations. It appears that, in this study, affairs that included a sexual relationship were perceived to be much more severe, particularly by the female participants. This severity effect may have obscured any gender differences among participants who experienced affairs that included a sexual relationship.

The hypothesis that, for females, infidelity that is perceived to have had a strong emotional component will result in greater distress, greater likelihood of relationship dissolution and lower levels of forgiveness was not supported in this study. In fact, at first glance, the findings that females reacted more negatively to affairs that included a sexual relationship (i.e. they reported greater avoidance motivations) seem to be in direct opposition to this hypothesis. However, there is evidence that whether or not the affair included a sexual relationship was unrelated to the level of emotional involvement

reported by participants. The average level of emotional involvement reported for affairs with and without sex did not differ, indicating that these two measures were capturing different concepts. As discussed above, whether or not the affair included a sexual relationship may have been functioning more as a measure of severity in this study, with affairs that included sexual intercourse being perceived as more severe than those that did not.

Although the evolutionary predictions about females' responses to more emotional affairs was not supported, there is evidence that both males and females responded more negatively to affairs that were perceived as involving a high level of emotional commitment. Specifically, the level of emotional commitment was positively related to the likelihood that the relationship had ended. Participants who reported that the relationship did not end as a result of the affair also reported lower levels of emotional involvement. This finding is somewhat consistent with predictions made by the double-shot hypothesis (Harris & Christenfeld, 1996). For example, it is entirely possible that these participants believed a strong emotional involvement also implied a physical relationship. This belief would result in a "double-shot" of infidelity for affairs that were perceived to be high in emotional involvement. This belief might in fact be the most accurate representation of how infidelity occurs in the "real world." It is completely rational to assume in the context of infidelity that an emotional involvement either includes a sexual relationship or is, at the very least, a precursor to a sexual involvement. In fact, it could be argued that a purely emotional affair with no sexual involvement is a by-product of the division of infidelity into two distinct types and does not actually exist in the real world. If in fact a purely emotional affair does exist, it is no doubt an

exceedingly rare occurrence. This explanation is also consistent with findings in the literature indicating that participants of both genders often judge instances of real-life infidelity that include an emotional component as more severe than a purely sexual relationship (Harris, 2002; Harris, 2003).

As in Study 1, higher levels of mate-value were associated with higher levels of indignation in response to infidelity. However, this effect was found only with the objective measure of attractiveness. Perceived mate value was not significantly associated with any of the reactions to the affairs reported in this study. Among participants who did not break up as a result of the affair, higher levels of attractiveness were associated with higher levels of relationship damage. As in Study 1, this relationship between mate value (as measured by attractiveness ratings) and relationship damage was mediated by levels of indignation. These findings provide additional support to the hypothesis that an individual's mate value has practical implications in shaping responses to infidelity within relationships.

Although the methods used in this study provide a "real world" complement to the hypothetical scenarios used in Study 1, this study is not without limitations of its own. For example, relying on participants' retrospective memories of past experiences might be problematic, especially for such an emotionally laden topic as infidelity. This potential problem is especially relevant for this study given that most of the affairs reported occurred more than a year prior to data collection. With so much time lapsing between the actual event and the recollection and reporting of that event, it is at least possible that participants' memories were inaccurate or influenced by other factors such as hindsight bias. One final limitation of this study was the fact that the sample used included twice as

many females as males. In a study examining gender differences in reactions to infidelity, this discrepancy is obviously problematic. However, despite these limitations, the current study, in conjunction with the first study, provides at least some support for evolutionary predictions about how males react to infidelity and preliminary evidence that mate value is also an important variable to consider in understanding the complexity of reactions to infidelity.

GENERAL DISCUSSION

The present set of studies had two main goals – To examine the influence of gender on reactions to infidelity while addressing some of the limitations and weaknesses of previous studies in this area and to examine the influence of mate value on a variety of reactions to infidelity (in particular, indignation, anxiety and forgiveness).

The Effects of Gender

Across both studies, support for the existence of a fundamental difference between males and females for emotional reactions to infidelity was weak at best. In fact, the only consistent gender difference found in both studies suggests that females simply react more strongly to either type of infidelity. In Study 1, females, relative to males, reported significantly higher levels of anxiety in response to both emotional and sexual scenarios. In addition, in Study 2, females, relative to males, reported higher levels of both anxiety and indignation in response to actual instances of infidelity from the past. In fact, the females who participated in Study 2 seemed to be especially angry at the person who had cheated on them. This is consistent with several previous studies demonstrating that females, relative to males, sometimes express more intense levels of jealousy and other emotions in response to infidelity (DeSteno et al., 2002; Feldman Barrett et al.,

1998). That females tended to experience more intense emotional responses to either type of infidelity in the present studies does not preclude the possibility that more subtle differences in the way that females respond to emotional versus sexual infidelity exist. However, it may exacerbate the potential problem of ceiling effects when using continuous measures of distress.

In further support of the idea that the influence of gender on reactions to infidelity may not be a simple gender difference in absolute levels of distress, but differences in sensitivities to each type of affair, there was evidence that, for males, type of affair is an important predictor not only of indignation, but also outcomes such as levels of forgiveness, and relationship dissolution. At first glance, these findings seem to contradict the prevailing pattern discussed earlier in which it appears that males are not discriminating between the two types of infidelity when reporting distress. When presented with a forced-choice paradigm, males choose sexual infidelity as most distressing only about 45% of the time (Harris, 2003). However, there is no way to determine how males are conceptualizing “distress” in these studies. In fact, it is possible that each individual’s understanding of “distress” varies widely. In contrast, the construct of “indignation” used in the present studies is much more clearly defined. The fact that levels of indignation significantly mediated the relationships between type of affair and at least two of the outcome measures (inability to forgive and avoidance motivations) is consistent with data suggesting that, when faced with decisions about relationship dissolution and forgiveness, males appear to discriminate between the two types of infidelity, choosing the sexual option as most severe about 65% of time. (Shackelford et al., 2002). Thus, the data presented in Study 1 are consistent with an evolutionary account

of how males should respond to infidelity, and highlight the usefulness of measuring a wider variety of specific emotional reactions such as indignation as opposed to the more general concept of “distress.” These results support the contention that different emotional reactions are associated with different outcomes. Specifically, in Study 1, indignation was associated with relationship dissolution and lower levels of forgiveness. In light of this, future research should continue to investigate the outcomes associated with specific emotional reactions as opposed to general levels of “distress.” This could provide more detailed information about the processes underlying specific reactions to infidelity such as forgiveness and relationship dissolution

In addition to providing some support for a modified version of the evolutionary hypotheses about the influence of gender on reactions to infidelity, these studies also cast doubts on the usefulness of the double-shot hypothesis proposed by Harris and Christenfeld (1996). Although, as discussed previously, in some circumstances, it might be accurate to assume that emotional infidelity also implies a physical relationship, this hypothesis cannot fully explain the clear differences in males’ predicted reactions to sexual versus emotional infidelity seen in Study 1. These differences emerged in this study despite previous research suggesting that males are equally likely to believe that one type of affair implies the other (Harris & Christenfeld, 1996) and appear unable to distinguish between the two types when forced to decide which one induces the most distress (for a review, see Harris, 2003). In this case, an evolutionary explanation seems most appropriate. Given the high cost of cuckoldry to a male’s evolutionary fitness, it is entirely appropriate to expect that males will react differently to infidelity depending on the risk associated with each type of affair. Although the risk of cuckoldry following one

incident of infidelity is the same regardless of the level of emotional commitment, it is possible that a purely sexual affair with no emotional involvement represents an increased risk in the long term. In other words, remaining in a relationship with a partner who is willing to engage in casual sex with a relative stranger might indicate a predilection to engage in future affairs, some of which could go undetected. This is consistent with evidence presented by Wiederman and Allgeier (1993) that instead of being sensitive to sexual infidelity that has already occurred, males respond to cues indicative of possible future sexual infidelity. Willingness to engage in a purely sexual affair without an emotional connection might be such a cue. In support of this hypothesis, males in Study 1 predicted that the sexual affair, relative to the emotional, was more likely to indicate an increased risk of future infidelities.

The Effects of Mate Value

Both of these studies taken together provide consistent support for the prediction that an individual's mate value is associated with the levels of indignation experienced in response to infidelity. In both studies, higher levels of mate value were associated with increased levels of indignation. There is also evidence that this increase in indignation as a function of mate value is associated with more negative outcomes, including lower levels of forgiveness, a greater likelihood of relationship dissolution, and higher levels of relationship damage for couples who stay together. Surprisingly, the objective measure of attractiveness was a more consistent predictor of indignation than the self-report measure of perceived mate value. Attractiveness was the only mate value measure found to be related to indignation in both studies. Specifically, in Study 2, indignation was predicted not by the participants' perceptions of their own mate value, but by how

attractive they were judged to be by members of the opposite sex. One possible explanation for the fact that perceived mate value failed to predict reactions to infidelity in the second study might be the absence of information about the participants' partners' mate value in this study. Because most of the participants in Study 2 were no longer involved in relationships with the person who had cheated on them, it was not possible to obtain complementary measures of partner mate value; however, the analyses in Study 1 were each conducted controlling for partners' mate value. It is possible that participants' perceptions of their own mate value are inextricably linked to their perceptions of the value of their current partner and thus, participants' own perceptions of mate value were not as relevant in Study 2.

The current findings suggest one explanation for why certain individuals are able to forgive their partners and choose to work towards reconciliation rather than ending the relationship following infidelity. As discussed by Finkel et al. (2002), current literature examining forgiveness has focused on *how* people forgive, whereas few studies have addressed the complementary issue of *why* people forgive. In response to this deficit, Finkel et al. (2002) examined forgiveness in romantic relationships within the context of interdependence, linking forgiveness to levels of commitment. The concept of relative mate value fits nicely into this framework of interdependence, providing one more piece to the puzzle of *why* individuals might forgive a close relationship partner following a serious betrayal such as infidelity.

Future research could expand this work by examining the role of apologies in the forgiveness process following infidelity. Previous work has demonstrated that apologies, particularly from close relationship partners, are associated with higher levels of

forgiveness in response to a variety of interpersonal offenses (Brown, Phillips, & Barnes, 2004; McCullough et al., 2000). Thus, one would expect that overall, apologies following infidelity will be associated with higher levels of forgiveness. However, it is also possible that apologies might interact with other variables such as the type of affair or mate value. For example, individuals lower in mate value relative to their partners may be more likely to forgive an unfaithful partner only if he or she offers a sincere apology. These individuals could be predisposed to grant forgiveness more readily, yet still need an apology as justification that forgiveness is an appropriate response.

Caveats and Future Directions

Although the results of these two studies are intriguing and promising, they are not without some important limitations. First, there are valid concerns about whether using a college age sample is appropriate when assessing reactions to infidelity. College students tend to have limited experience with romantic relationships, especially the long-term relationships within which infidelity would be most relevant. One has to wonder whether a more representative sample of individuals would respond in the same way. In addition, most of the “affairs” reported by participants in Study 2 occurred at least one year earlier when the majority of these participants were still in high school. This raises the concern that the types of infidelity reported by these participants may be qualitatively different from that experienced by older individuals involved in long-term committed relationships. However, despite these concerns, the results presented here are promising. Future work should include samples of older individuals. It would be particularly interesting to expand these results to individuals who are married with and without children.

A second major limitation of these studies is the fact that not only was fluctuating asymmetry (FA) unrelated to reactions to infidelity, but it was also uncorrelated with any other measure of mate value. However, this failure was most likely an issue with the accuracy of the measurements rather than evidence that FA is not an important index of mate value. Although the six undergraduate research assistants who took the physical measurements were carefully trained, it was not possible to supervise them during every session. There was considerable variability in each research assistant's measurements, as well as significant differences between the measurements taken by each research assistant. In order to be useful, these measurements needed to be accurate to at least .01 inches (see Leung et al., 2000 for a discussion of sensitivity to measurement error in FA calculations). Unfortunately, it appears that this level of accuracy was not achieved in this case. The fact that the attractiveness ratings, which have been shown to be related to FA in previous work (Gangestad & Thornhill, 1999; Brown & Moore, 2003), were predictive of various reactions to infidelity across both studies provides encouragement that future work may still uncover an effect of FA in this domain.

Although each of these studies by itself has some limitations, together, they provide a compelling story about how the effects of gender on reactions to infidelity should be conceptualized as well as preliminary evidence suggesting that mate value might also be an important factor in explaining how individuals respond when their partner has been unfaithful. The first study provides a great deal of experimental control and allows for an examination of the effects of each individual's mate value in relation to each his or her partner. The second study, in contrast, addresses some of the concerns about the ecological validity of the hypothetical scenarios used in Study 1 by examining

responses to actual affairs that occurred in the “real world.” The evidence presented in these studies concerning the effects of mate value is especially exciting, as this is the first study to examine this variable. Although certainly not conclusive, the results of both studies suggest that mate value is associated with responses to infidelity in the direction predicted by evolutionary theories.

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Footnotes

1. A second measure of relative mate value was calculated by subtracting participants' self-reported mate value from their ratings of their partners' mate value. This difference score was highly correlated with quality of alternatives ($r = .43, p < .01$), and both measures produced similar results in every analysis. Thus, the quality of alternatives scale will be used as the only measure of relative mate value in this study.
2. The regression coefficients reported for all HLM analyses are unstandardized coefficients.
3. When attractiveness of the participant and his or her partner was not included in the model, this interaction was reduced to marginal significance, $p = .07$. However, the overall pattern remained the same.

Table 1
Study 1: Items used to measure indignation and anxiety in response to hypothetical infidelity

Indignation ($\alpha = .66$)

To what extent would you be angry with your partner?
To what extent would you feel hostile towards your partner?

Anxiety ($\alpha = .82$)

To what extent would you feel anxious?
To what extent would you feel scared or afraid?
To what extent would you feel insecure?
To what extent would you feel threatened?
To what extent would you feel uncertain about the future?

Note: Participants responded to each item using a 9-point Likert scale ranging from 0 (“not at all”) to 8 (“extremely”).

Table 2

Study 1: Correlations between emotional reactions to the infidelity scenarios and outcome Measures

	Indignation	Anxiety	Inability to Forgive	Avoidance Motivations	Revenge Motivations	Likelihood of Breaking up	Relationship Damage
Anxiety	.24**						
Inability to Forgive	.59**	.20*					
Avoidance Motivations	.30**	.06	.49**				
Revenge Motivations	.45**	.23**	.40**	.39**			
Likelihood of Breaking up	.23**	-.05	.36**	.65**	.20*		
Relationship Damage ^a	.37**	.06	.48**	.57**	.30**	.59**	
Likelihood that partner would cheat again ^b	.41**	.24**	.41**	.38**	.28**	.39**	.45**

^a Represents the predicted amount of relationship damage assuming that the relationship did not end.

^b Represents participants' beliefs that the hypothetical infidelity described in the scenario would represent an increased risk that his or her partner would be unfaithful in the future.

* $p < .05$, ** $p < .01$

Table 3
Study 1: Reactions to infidelity scenarios by gender and type of affair

	Emotional Reactions		Outcome Measures				
	Indignation	Anxiety	Inability to Forgive	Avoidance Motivations	Revenge Motivations	Likelihood of Breaking up	Relationship Damage
α	.66	.82	--	.93	.91	--	--
Females	6.49 (1.67)	5.95 (1.55) ²	5.31 (2.71)	3.99 (2.22)	2.13 (1.79)	5.60 (2.09)	6.59 (1.92)
Emotional Affair	6.23 (1.44)	5.80 (1.56)	4.81 (2.68)	3.75 (2.17)	1.95 (1.62)	5.08 (2.10)	6.11 (2.12) ²
Sexual Affair	6.75 (1.84)	6.09 (1.55)	5.79 (2.70)	4.24 (2.28)	2.30 (1.95)	6.11 (1.98)	7.05 (1.59) ²
Males	5.75 (1.86)	4.82 (1.94) ²	4.95 (2.75)	4.33 (2.36)	1.61 (1.91)	5.77 (2.36)	6.72 (1.98)
Emotional Affair	5.20 (1.88) ¹	5.03 (1.90)	4.16 (2.41) ²	3.41 (2.18) ¹	1.23 (1.56)	4.86 (2.50) ¹	6.08 (2.27) ¹
Sexual Affair	6.29 (1.69) ¹	4.61 (1.97)	5.71 (2.87) ²	5.23 (2.21) ¹	1.98 (2.15)	6.63 (1.88) ¹	7.34 (1.42) ¹

Note: Standard deviations are given in parenthesis after each group's mean. Means within in each column denoted with matching superscripts are significantly different from each other.

¹ $p < .01$, ² $p < .05$.

Table 4

Study 1: Mediation analyses examining whether the relationships between type of affair and reactions to infidelity are mediated by higher levels of indignation in males

	β (w/o indignation)	β (with indignation included)	Mediation?	Z ^a
Inability to Forgive	-.29*	-.17	yes	-2.08*
Avoidance Motivations	-.37**	-.28*	yes	-1.94*
Revenge Motivations	-.15	--	n/a	--
Likelihood of Breaking up	-.40**	-.33**	no	-1.51
Relationship Damage	-.31**	-0.24*	no	-1.57

Note: The above analyses were conducted controlling for the length of the current relationship and whether or not the participants were sexually active. Among males, type of affair was a significant predictor of indignation, $\beta = -.27, p < .05$. Type of affair did not predict indignation for females, $\beta = -.11, p = .34$.

^aThe reported Z values represent the results of Sobel tests. Significant results indicate a significant reduction in the beta value for type of affair when the mediator (indignation) is included in the model.

* $p < .05$, ** $p < .01$

Table 5
Study 1: Descriptive Statistics for each measure of mate value

	Perceived Mate Value			Objective Measures	
	Self Ratings	Ratings of Partners' MV	Quality of Alternatives	Fluctuating asymmetry (FA)	Attractiveness
Females	6.53 (.94)	7.14 (.86)	2.46 (1.66) ¹	.035 (.012) ¹	5.05 (1.45) ¹
Males	6.78 (1.04)	6.95 (.97)	3.50 (1.83) ²	.043 (.018) ²	4.01 (1.03) ²
Total	6.66 (1.00)	7.05 (.92)	2.98 (1.82)	.038 (.016)	4.53 (1.36)

Note: Standard deviations are given in parentheses following each mean. Means within a column marked with different superscripts are significantly different from each other, $p < .01$.

Table 6
Study 1: Correlations between each measure of mate value

	Perceived Mate Value			Objective Measures		
	Self Ratings	Ratings of Partners' MV	Quality of Alternatives	Fluctuating asymmetry (self)	Fluctuating asymmetry (partner)	Attractiveness (self)
Partner Ratings	.53**					
Quality of Alternatives	.14	-.28**				
FA (self)	.07	.00	.09			
FA (partner)	.13	.09	.00			
Attractiveness (self)	.04	-.05	.07	.05		
Attractiveness (Partner)	.08	.00	.22**	.30**	.05	.21*

** $p < .01$

Table 7

Study 1: HLM analyses showing the influence of mate value on reactions to the hypothetical infidelity scenarios

	Perceived Mate Value						Objective Measures of Mate Value			
	Self Ratings		Partner Ratings		Quality of Alternatives		Attractiveness (self)		Attractiveness (partner)	
	Coeff. ^a	<i>t</i>	Coeff. ^a	<i>t</i>	Coeff. ^a	<i>t</i>	Coeff. ^a	<i>t</i>	Coeff. ^a	<i>t</i>
Indignation	.62	2.29*	-.33	-1.50	.33	2.59*	.49	2.73**	-.05	.30
Anxiety	-.13	-.51	.08	.36	-.08	.63	-.10	.51	.11	.64
Inability to Forgive	.04	.14	.23	.51	-.04	.14	.33	1.30	.04	.12
Avoidance Motivations	.22	.95	-.37	-1.12	.15	.93	.46	2.45* ^b	-.12	.52
Revenge Motivations	.26	1.48	-.34	2.01*	.33	2.01* ^b	.26	1.43	-.24	1.11
Likelihood of Breaking up	.41	2.15* ^b	-.09	-.37	-.06	.47	.40	2.19* ^b	-.29	1.31
Relationship Damage	.52	3.09* ^b	-.29	-2.13*	.06	.60	.33	2.85** ^b	-.16	.82

Note: Each of the models represented above were conducted controlling for the type of affair (sexual or emotional), gender, length of the relationship, and whether or not the couple was sexually active.

* $p < .05$, ** $p < .01$

^a Unstandardized coefficients

^b These effects were mediated by levels of indignation

Table 8
Study 2: Descriptive Statistics for Relationship Characteristics

Relationship Descriptors	
Type of Relationship ^a	
Dating	97%
Other (Living together, Engaged & Married)	3%
Were you sexually active at the time? ^a	
No	42.5%
Yes	56.7 %
Level of closeness prior to the incident ^b	4.84 (1.13)
Length of the relationship (years) ^b	1.15 (.99)

^a Represents the percentage of participants who chose each option.

^b Represents the mean score for each item. Standard deviations are given in parenthesis.

Table 9
Study 2: Descriptive Statistics for Descriptions of Infidelity

Infidelity Descriptions	
Type of affair ^a	
Sexual	61.9%
Emotional	36.6 %
Did the affair involve sex? ^a	
No	45.5%
Yes	54.5%
Level of emotional involvement ^b	2.09 (1.76)
Apology ^a	
No	17.9%
Yes	80.6%
Sincerity of Apology (if offered) ^b	3.99 (1.66)
Who is most at fault? ^a	
Partner	69.4%
Interloper	17.2%
Participant	4.5%
Amount of blame (continuous measure) ^b	
Partner	4.89 (1.24)
Interloper	3.87 (1.83)
Participant	1.14 (1.58)

^a Represents the percentage of participants who chose each option.

^b Represents the mean score for each item. Standard deviations are given in parenthesis.

Table 10

Study 2: Correlations between emotional reactions to infidelity and outcome measures

	Indignation	Anxiety	Forgiveness	Avoidance Motivations
Anxiety	.27**			
Forgiveness	-.23**	.01		
Avoidance	.20*	.04	-.68**	
Relationship Dissolution	.19*	.05	-.27**	.39**
Relationship Damage ^a	.34*	.25	-.27	.14

Notes: N = 134

^a The correlations reported for relationship damage includes only those participants who reported that the relationship did not end in response to the event (N = 35).

* $p < .05$, ** $p < .01$

Table 11

Study 2: The relationship between the three measures of affair type and reactions to infidelity

	Did the Affair include sex? ^a		Type of Affair ^a		Level of Emotional Involvement ^b
	No Sex	Sex	Emotional	Sexual	<i>r</i>
	n = 61	n = 73	n = 49	n = 83	
Indignation	6.04 (1.67)	6.54 (1.67)	6.26 (1.69)	6.38 (1.65)	-.06
Anxiety	4.75 (1.85)	4.34 (1.97)	4.71 (1.89)	4.47 (1.94)	-.02
Forgiveness	5.71 (1.86) ¹	4.76 (1.83) ^{2**}	5.25 (1.88)	5.14 (1.89)	-.11
Avoidance	3.01 (2.48) ¹	4.66 (2.47) ^{2**}	3.81 (2.53)	3.96 (2.61)	.12
Relationship Dissolution ^c	.60% ¹	.85% ^{2**}	.86% ^{2*}	.66% ¹	.24**

Note: Means marked with different superscripts within a row are significantly different from each other.

^a Represents the mean response for each type of affair. Standard deviations are given in parentheses.

^b Represents the correlation between level of emotional involvement and each outcome.

^c Percentage of participants who reported that the relationship ended in response to the affair.

* $p < .05$, ** $p < .01$

Table 12
Study 2: Descriptive Statistics for reactions to infidelity

	α	Females	Males	Total
Indignation	.64	6.62 (1.62) ^{1**}	5.78 (1.68) ^{1**}	6.31 (1.68)
Anxiety	.82	4.80 (1.92) ^{2*}	4.07 (1.85) ^{2*}	4.53 (1.92)
Forgiveness	.80	4.86 (1.84)	4.63 (2.05)	4.78 (1.91)
Avoidance Motivations	.95	3.89 (2.57)	3.94 (2.67)	3.91 (2.60)
Relationship Dissolution ^a	--	78%	67%	74%
Relationship Damage ^b	--	4.42 (1.92)	5.56 (1.67)	4.94 (1.88)

Notes: N = 134 (85 females; 49 males). Standard deviations are given in parentheses after each mean. Means with matching superscripts differ significantly from each other. * $p < .05$, ** $p < .01$

^a Percentage of participants who reported that the relationship ended as a result of the infidelity.

^b Represents the amount of relationship damage reported by those participants who indicated that the relationship did not end (N = 35; 19 females; 16 males). These means represent a marginally significant difference, $p = .07$.

Table 13

Study 2: Descriptive Statistics for each measure of mate value

	Males	Females	Total
Perceived Mate Value ^a	6.46 (1.06)	6.64 (.86)	6.58 (.94)
Attractiveness ^a	4.17 (1.10) ¹	4.71 (1.43) ²	4.52 (1.34)
Fluctuating Asymmetry (FA)	.05 (.02)	.04 (.01)	.04 (.02)

Note: Standard deviations are given in parentheses following each mean. Means within a row marked with different superscripts are significantly different from each other, $p < .05$.

^a Attractiveness and perceived mate value were significantly correlated with each other, $p < .05$.

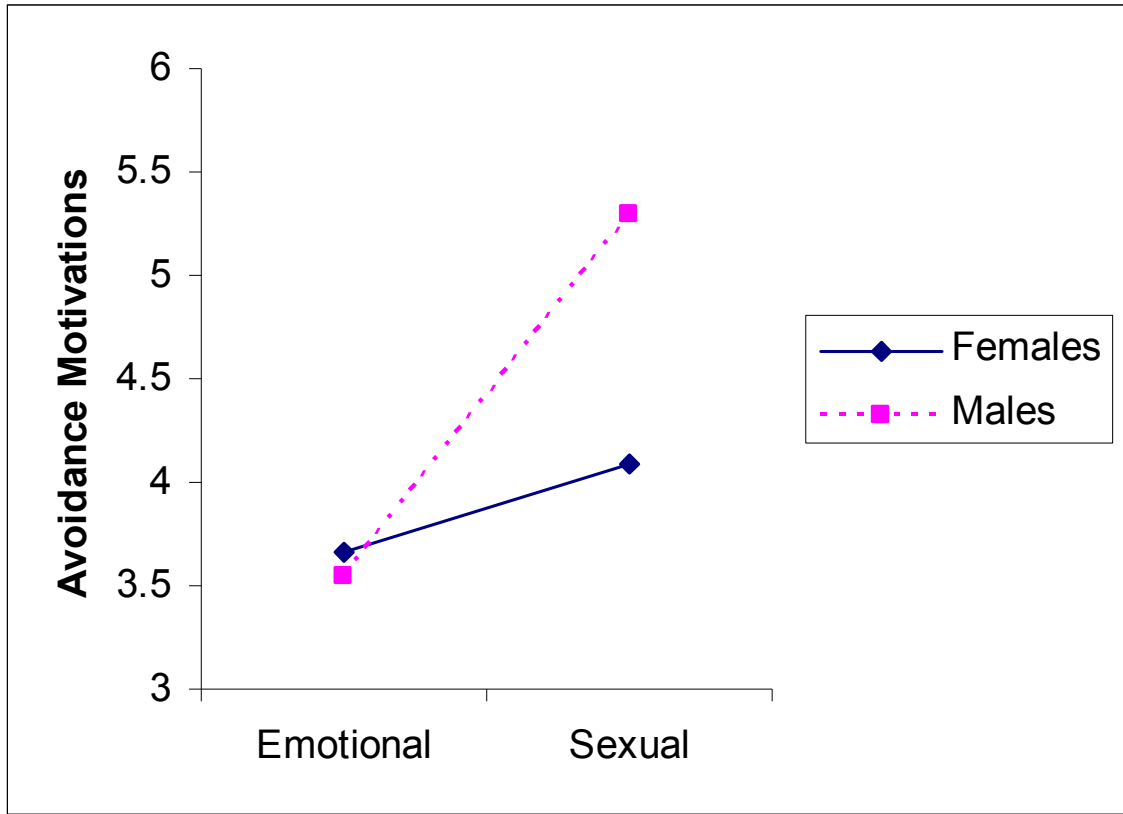


Figure 1. *Study 1: Interaction between type of affair and gender predicting avoidance motivations*

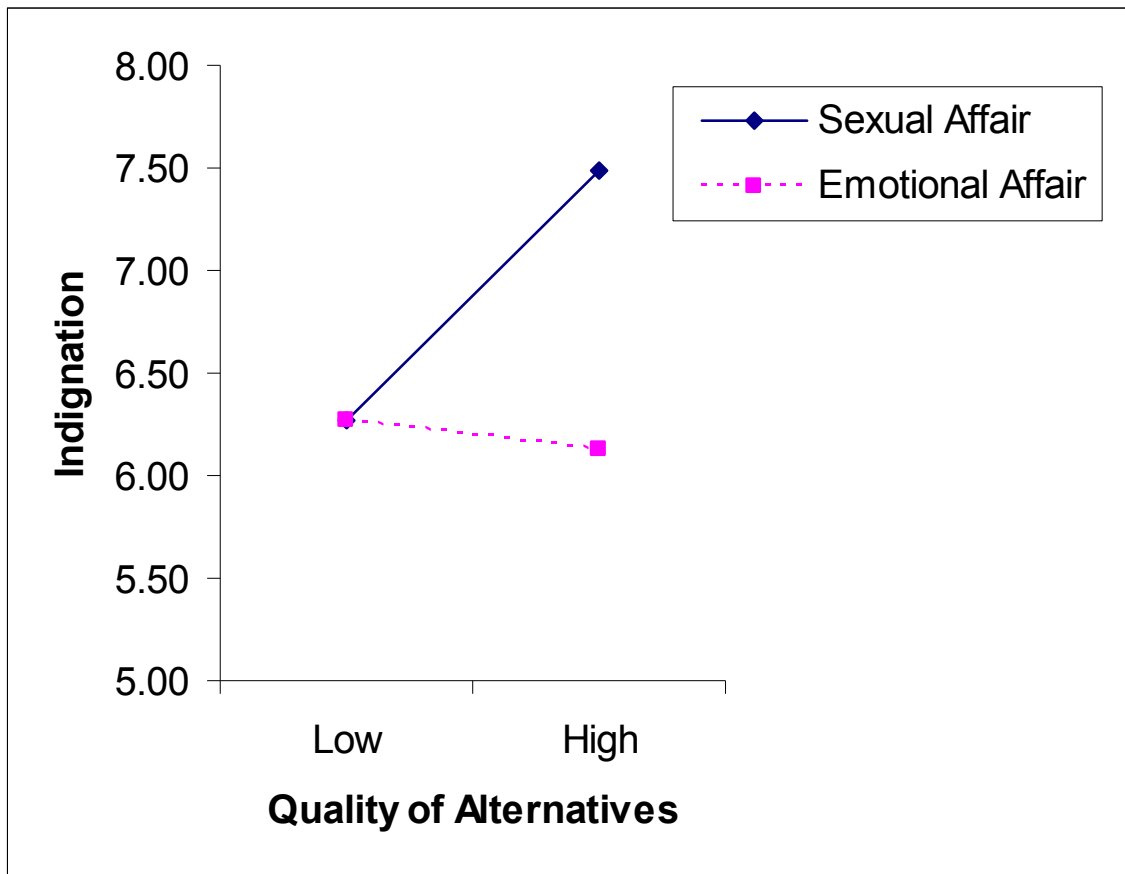


Figure 2. Study 1: Interaction between Quality of Alternatives and type of affair predicting levels of indignation in response to the affair

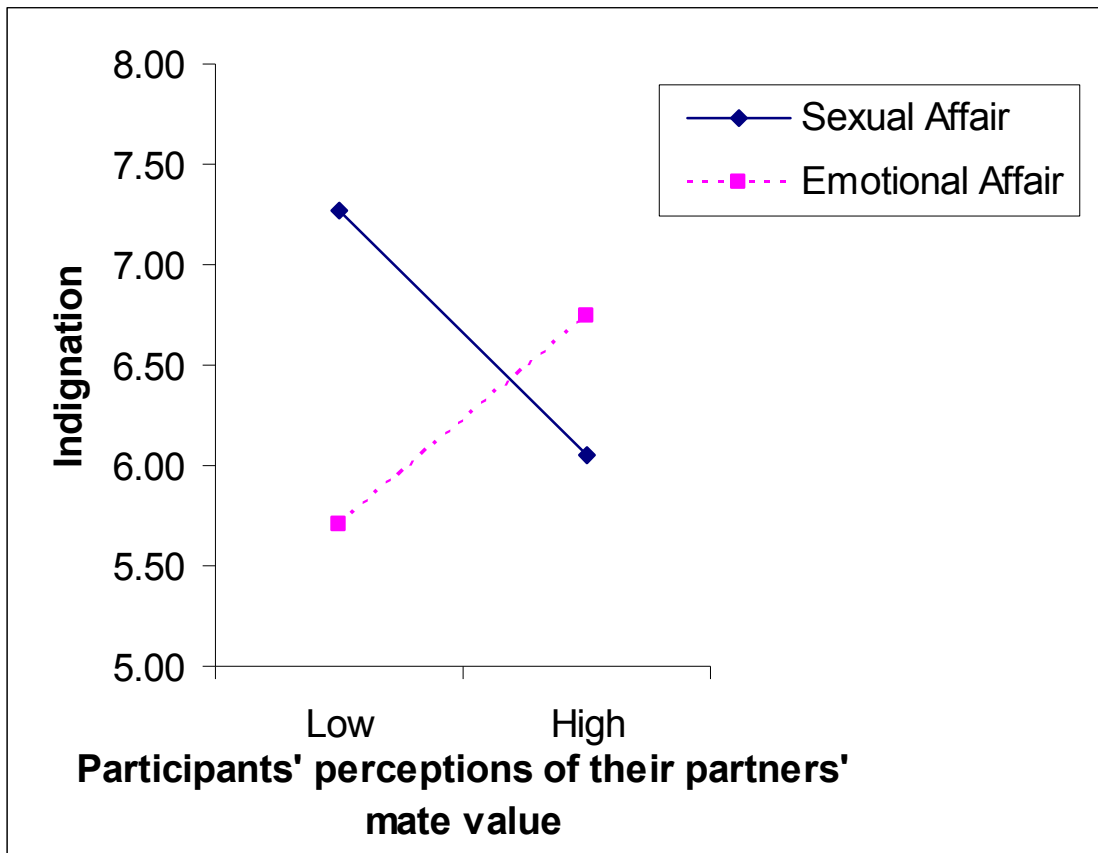


Figure 3. Study 1: Interaction between participants' ratings of their partners' mate value and type of affair predicting levels of Indignation in response to the affair

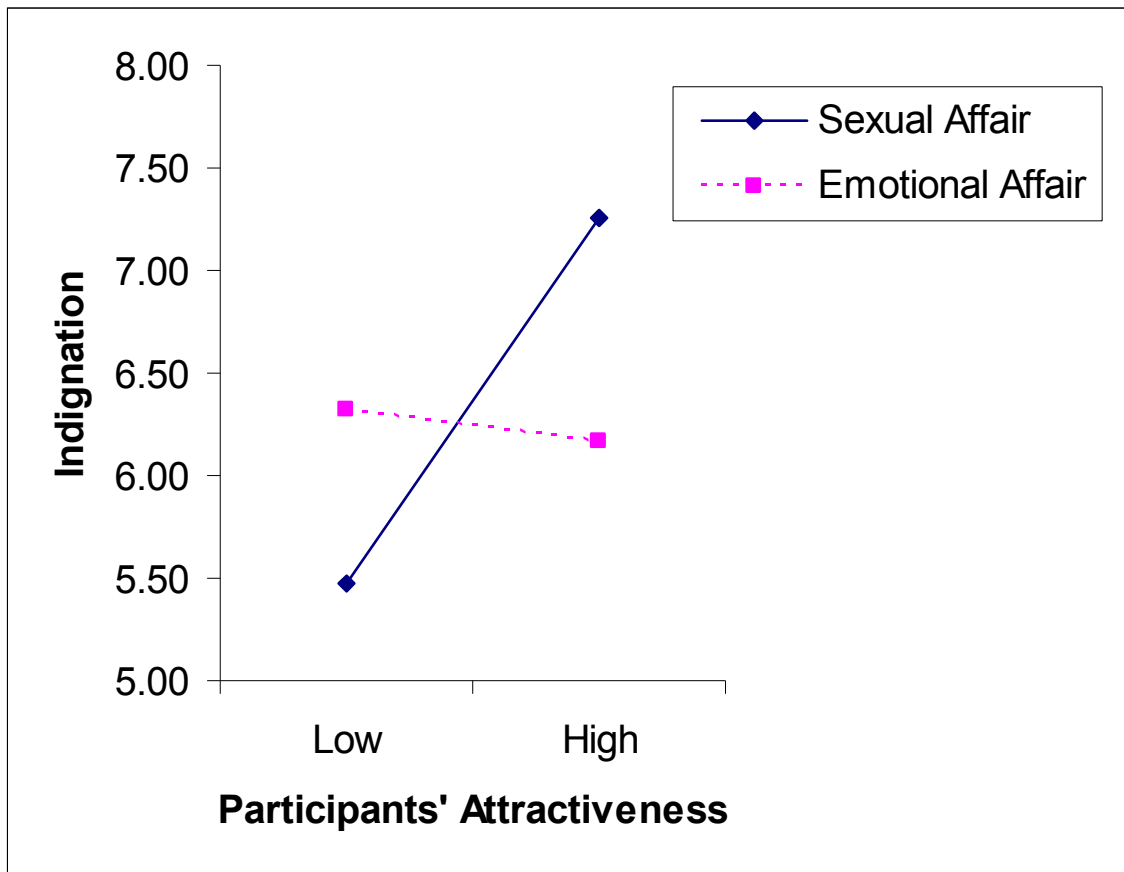


Figure 4. *Study 1: Interaction between type of affair and participants' attractiveness predicting levels of indignation in response to the affair*

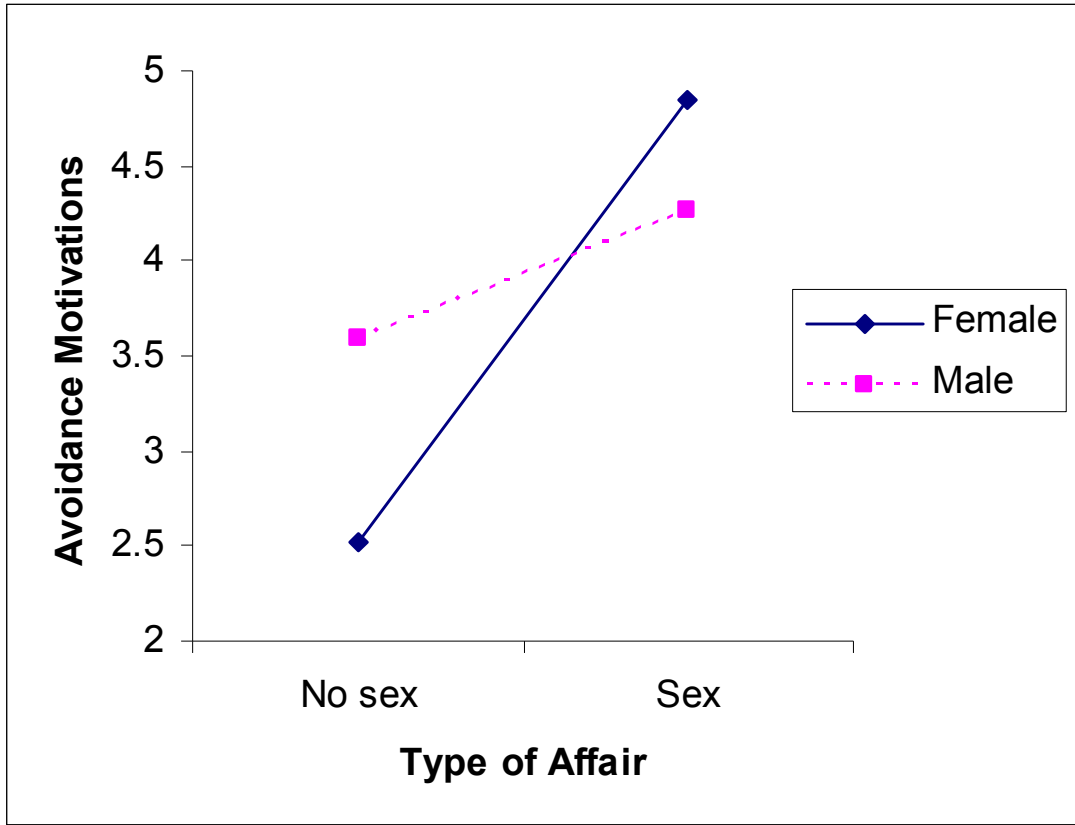


Figure 5. *Study 2: The interaction between whether the affair included sex or not and gender predicting avoidance motivations*

Appendix A

Self-reported mate value

Below are several ways in which college students might describe themselves or others. For each characteristic, please **rate yourself relative to other OU students of your sex and age** using the scale below.

0.....1.....2.....3.....4.....5.....6.....7.....8.....9
(10%) (20%) (30%) (40%) (50%) (60%) (70%) (80%) (90%) (100%)
way BELOW average way ABOVE average

6. Intelligent
7. Socially Skilled/Competent
8. Good Athletic Ability
9. Physically Attractive
10. Good leadership Ability
11. Good common sense
12. Popular
13. Ambitious/Industrious
14. Good Financial prospects
15. Kind and Understanding
16. Exciting Personality
17. Healthy
18. Easygoing
19. Creative
20. Good student/Likely to graduate college

Each participant was also asked to rate their partner on the same dimensions. For this part of the measure, they were given the following instructions:

Below are several ways in which college students might describe themselves or others. For each characteristic, please **rate your current romantic partner (the person participating with you in today's study) relative to other OU students of his/her sex and age** using the scale below.

Appendix B

Hypothetical infidelity scenarios

Participants were presented with one of the following scenarios and asked to imagine how they would feel and react if the situation described had actually happened. These scenarios were read by female participants. The male participants read the same scenario with the appropriate pronouns changed.

Option 1 - Sexual affair:

“Imagine that over spring break your partner met someone else while he was out of town with friends. He admits to having sex with this person, but he did NOT fall in love with her. Since they did not make any plans to stay in touch, he will probably never see her again. He seems to regret his involvement with her and still wants to stay together with you.”

Option 2 - Emotional Affair:

“Imagine that over spring break your partner met someone else while he was out of town with friends. He admits to falling in love with this person, but they never had sex. Since they did not make any plans to stay in touch, he will probably never see her again. He seems to regret his involvement with her and still wants to stay together with you.”