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Research

Adult Attachment, Cognitive Appraisal, and University Students' Reactions to Romantic Infidelity

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This study examined the relationships between adult attachment, cognitive appraisal, and university students' behavioral and emotional reactions to infidelity situations in romantic relationships. Results based on 173 university students suggested that both attachment and cognitive appraisals significantly predicted distinct types of infidelity reactions and that participants' cognitive appraisal mediated the effects of attachment on behavioral and emotional reactions. Counseling applications for university counselors are discussed on the basis of attachment perspectives and cognitive appraisal models.

Keywords: adult attachment, cognitive appraisal, infidelity

Researchers suggest that up to 25% of all committed relationships experience some form of romantic infidelity (Blow & Hartnett, 2005). Infidelity can uproot grounded relationships, leave long-lasting emotional scars, and negatively influence couples' interpersonal dynamics. When facing an infidelity experience, betrayed partners are likely to experience a variety of negative emotions, such as hurt, anger, resentment, and depression (Charny & Parnass, 1995). The aftermath of infidelity often includes a loss of trust in the relationship, decreased intimacy, and direct effects on other relationships (e.g., children, friends, and parents). However, individual responses to romantic infidelity vary greatly. For instance, some people may take a more constructive approach by talking it over with their partner or even entering couples therapy to address underlying problems in their relationship. Others may choose to use passive methods to deal with the infidelity, such as denying or avoiding the incident. Others may take a more revengeful approach, such as aggressively confronting the betraying partner and doing something to get even.

Various theories and models have been proposed to understand the factors and mechanisms that contribute to individuals' responses and behaviors when facing an infidelity experience. A review of the literature revealed two conceptually relevant frameworks: the attachment perspective (Bowlby, 1969) and cognitive appraisal theory (Peacock & Wong, 1990). The present study used these two theories to examine the variation of college students' reactions

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to romantic infidelity. The following sections provide overviews of these two theories, review relevant literature, and describe the explicit purpose of this study and the proposed hypotheses.

Attachment and Infidelity

Because the origin of attachment theory is related to separation and loss experienced by children, it provides a good conceptual lens through which to understand people's reactions to romantic infidelity. Attachment theory posits that the quality of childhood relationships with primary caregivers facilitates the development and maintenance of people's internal working models, which are mental representations of how people view themselves and others (Bowlby, 1969). Empirical research of adult attachment has led to a conceptual model with two orthogonal dimensions of adult attachment—*anxiety* and *avoidance* (Brennan, Clark, & Shaver, 1998)—which correspond with one's internal working models of self and others proposed in the theory. Individuals with high attachment anxiety are characterized by negative perceptions of self-worth and competence, a strong need for the approval of others, and feeling preoccupied with maintaining relationships, yet constantly fearing abandonment and rejection from others. Conversely, typical characteristics of those high in attachment avoidance include excessive desires to be self-reliant; reluctance to depend on others; and negative perceptions of the goodness, trustworthiness, and dependability of others (Brennan et al., 1998). On the basis of this two-dimensional model, people with low scores on both anxiety and avoidance dimensions are considered to have secure attachment, whereas those scoring high on either or both of the dimensions are considered to have insecure attachment.

Researchers have consistently indicated that a person's attachment has significant influence on the affect regulation strategies used when the person faces stressful events. A general conclusion is that individuals with insecure attachment are more likely to use ineffective regulatory strategies to manage internal anxiety; these strategies often lead to higher levels of psychological distress and an inability to effectively cope with stressful life events (Lopez & Brennan, 2000; Wei, Heppner, & Mallinckrodt, 2003). For example, individuals with high attachment anxiety are more likely to use hyperactivating strategies by overly expressing their negative emotions and thoughts to elicit the attention of others. Conversely, individuals with attachment avoidance use deactivating strategies whereby they suppress distressing thoughts to avoid depending on others and to distance themselves from attachment figures or the sources that may cause increased levels of anxiety (Mikulincer & Florian, 1998).

Because the occurrence of infidelity presents a potential loss of a significant other that is likely to activate attachment systems, the adult attachment perspective has been used in infidelity studies, and research findings are generally consistent with the theory's predictions. For instance, researchers have shown that the cognitive reaction of anxiously attached individuals to

attachment threats include ruminating thoughts, such as increased representations of their attachment figures in order to activate a cognitive source of comfort and preoccupation with the negative event (Mikulincer, Gillath, & Shaver, 2002). Additionally, they are likely to experience more worry and suspicion and feel more hostile, alienated, and angry toward their partners as a result of the threat (Birnbaum, Svitelman, Bar-Shalom, & Porat, 2008; Guerrero, 1998; Sharpsteen & Kirkpatrick, 1997). Researchers have also shown that after a break up, individuals with high attachment anxiety are more likely to engage in unhealthy coping strategies, such as turning to drugs and alcohol, and are likely to quickly find another romantic partner (Davis, Shaver, & Vernon, 2003). In contrast, because avoidant individuals are likely to have developed more negative views of others as a result of an attachment threat (Birnbaum et al., 2008), their reactions toward such a threat reflect this defensive attitude. For example, avoidant individuals not only avoid engaging in other relationships following a threatening event but also avoid thinking about attachment figures in their lives who may have been a source of comfort (Mikulincer et al., 2002). Behaviorally, individuals high in attachment avoidance are less likely to engage in relationship-maintaining behaviors (Guerrero, 1998) and tend to avoid beginning another relationship after the attachment threat (Davis et al., 2003).

Cognitive Appraisal and Reactions to Infidelity

Another theoretical framework we believe is useful in understanding individuals' reactions to infidelity is the cognitive appraisal theory. The concept of cognitive appraisal originally emerged from literature on stress and coping. It is generally defined as a process by which a person evaluates whether a specific encounter with the environment is relevant to her or his well-being and the extent to which the encounter may be stressful (Lazarus & Folkman, 1984). Consistent with this definition, Peacock and Wong (1990) empirically identified two specific dimensions of cognitive appraisals in relation to a potentially stressful event: *centrality* and *threat*. The centrality dimension of stress appraisals refers to the perceived importance of an event for one's well-being, whereas the threat dimension involves the evaluation of the potential for harm or loss resulting from the occurrence of the event. According to the cognitive appraisal theory, how one reacts to romantic infidelity depends largely on the cognitive process of appraising the significance and levels of threat to oneself. If people assess the occurring infidelity as a severe threat, they are likely to experience higher degrees of emotional distress. Furthermore, if people appraise the romantic infidelity as having high significance (i.e., high centrality) for their life and well-being, they will take more active actions to address the situation, although they may also experience increased levels of negative emotions.

Although cognitive appraisal models have been used widely in the stress coping literature to explain the differential effects of general stressors on individual psychological well-being and factors influencing the selection of different coping strategies (e.g., Gruen, Folkman, & Lazarus, 1988; King, 2005), little research attention has been paid to its particular implications on people's reaction to romantic infidelity. The lack of empirical evidence leaves the aforementioned relationships as simply conceptual speculations. To address this research gap, we examined the influences of cognitive appraisals on various types of emotional and behavioral responses when an individual is confronted with a partner's infidelity.

Cognitive Appraisal as a Mediator

In addition to examining the direct influences of adult attachment and cognitive appraisals with reactions to infidelity, we believe that cognitive appraisals may also act as mediators on the relations between attachment and how people react to infidelity. Although no available research has examined the joint effects of attachment and cognitive appraisals on infidelity reactions, some preliminary conceptual inferences can be drawn from attachment and cognitive appraisal theories. Adult attachment describes internal working models that individuals rely on to organize their interpersonal experiences and regulate implementations of affect and behavioral coping strategies. Although the operation of attachment patterns is, to a large extent, automatic and often out of one's consciousness (Bretherton & Munholland, 1999), influences of the developed attachment are likely to channel through particular cognitive processing mechanisms onto a person's behavioral or emotional reactions, especially under stressful circumstances in which an attachment system is activated. That is, cognitive appraisals may be responsible for the observed variation of reactions to infidelity associated with different attachment styles. Specifically, when a person with high attachment avoidance experiences romantic infidelity, she or he is likely to use deactivating strategies to deal with this distressing circumstance. We argue that a person's attempt to cognitively degrade the significance of this event (i.e., low centrality) may be a fundamental distancing strategy that is implemented first, which then leads to corresponding emotional responses and determination of various behavioral reactions. By contrast, anxiously attached individuals tend to feel preoccupied with relationships yet constantly fear being abandoned by their partners. These tendencies likely lead to their assigning greater importance to an encountered romantic infidelity and considering it a greater threat to their well-being; this would account for certain corresponding emotional and behavioral reactions. This reasoning is also consistent with cognitive appraisal theory, which emphasizes the critical role played by cognitive appraisals in determining one's responses in the stress process.

Present Study

Our study examined both direct and indirect effects of attachment and cognitive appraisal on university students' reactions to infidelity. We used an infidelity

scenario as stimulation; participants were instructed to imagine their partner having an outside romantic relationship (see the Measures section for more details). The dependent variable—reactions to infidelity—was operationalized using two dimensions: behavioral reactions and emotional reactions. Findings from this study will provide university counselors and other mental health professionals with a better understanding of how clients' attachment styles and cognitive processes may affect their experiences and reactions when facing a partner's infidelity in a romantic relationship.

Significant main effects of gender and relationship status have been reported in previous research. Specifically, men are found to be more likely to terminate their relationships, seek revenge, and have their own affairs when facing infidelity, whereas women demonstrate stronger desires to find out the reason for the infidelity, work to improve the relationship, and forgive their partners (Blow & Hartnett, 2005; Boekhout, Hendrick, & Hendrick, 1999). Individuals who are currently in a committed relationship tend to report higher levels of willingness to work out relational conflicts than those who are not currently in a relationship (Adams & Jones, 1997; Rusbult & Buunk, 1993). Because these two factors are not the main variables of interest for this study, we controlled their effects when examining the influences of attachment and cognitive appraisal on emotional and behavioral responses to infidelity.

On the basis of the theories and available research, we hypothesized that attachment would significantly predict emotional and behavioral reactions above and beyond the variance accounted for by gender and relationship status. Specifically, individuals high in attachment anxiety were expected to report heightened levels of emotional distress and engage in more aggressive and attention-seeking behaviors when being primed with an infidelity scenario, whereas those high in attachment avoidance would report lower degrees of disturbed emotions and constructive behaviors to distance themselves from the source of distress. We also hypothesized that cognitive appraisals would significantly predict additional variance beyond gender and relationship status in emotional and behavioral reactions. In addition, cognitive appraisals would function as the mediators for the relationships between attachment and reactions to infidelity.

Method

Participants

A total of 173 university students provided valid data for final analysis. This sample included eight freshmen (5%), 14 sophomores (8%), 21 juniors (12%), 40 seniors (23%), and 90 graduate students (52%). Of the sample, 78% (n = 134) were women and 22% (n = 38) were men; one participant did not indicate her or his gender. Among the participants, 120 (69%) reported currently being in a romantic relationship and 53 (31%) were not. Regarding participants' race/ethnicity, 137 (79%) self-identified as Caucasian, 18 (10%) African American, seven (4.0%) Asian, three (1%) Hispanic, one (0.6%) Native American, one (0.6%) multiracial, and four (2%) international students. Two participants

did not indicate their race/ethnicity. The average age of participants in this sample was 26.8 years (SD = 7.1).

Procedure

Participants were recruited from a public university in the Midwest. Upon obtaining instructors' permission, we visited several undergraduate and graduate classes in the psychology department and in the School of Education. Students were invited to voluntarily participate in the study by filling out a survey packet after the class. The study was described as a research project investigating the relationships between a person's attachment, thinking, and reactions to romantic infidelity. Students who completed the surveys were offered the opportunity to enter a raffle with eight prizes of a $20 gift certificate.

Measures

The survey package used in this study included several demographic items, a self-report adult attachment scale, an infidelity scenario, a cognitive appraisal scale, and instruments measuring participants' emotional and behavioral reactions to the given scenario. The measures were presented in a fixed order as described in the following sections to assess participants' attachment before they read the infidelity scenario.

Demographics. The demographic survey contained items that asked for the participants' age, status and school year, racial/ethnic information, gender, and whether they were currently involved in a romantic relationship.

Adult attachment. The Experiences in Close Relationships Scale (ECRS; Brennan et al., 1998) measures participants' attachment. The ECRS has two subscales, Anxiety and Avoidance, with a 7-point Likert-type scale (1 = d*isagree strongly*, 2 = *disagree somewhat*, 3 = *disagree slightly*, 4 = *neutral/mixed*, 5 = *agree slightly*, 6 = *agree somewhat*, 7 = *agree strongly*). The instructions direct respondents to rate items according to how they generally experience romantic relationships. Each subscale contains 18 items. The measured scores of the ECRS are based on two continued dimensions so no particular cutoff scores are used for high versus low attachment anxiety or avoidance. In a sample of college students, Brennan et al. (1998) reported internal reliabilities (coefficient alphas) of .91 and .94 for the Anxiety and Avoidance subscales, respectively, and test–retest reliabilities (using 3-week intervals) for both subscales were .70. Evidence of validity is provided by significant correlations in expected directions with other measures of adult attachment and with measures of preferences for touch and sexual behavior (Brennan et al., 1998). Internal reliabilities (coefficient alphas) in the present study were .90 and .89 for the Avoidance and Anxiety subscales, respectively.

Infidelity scenario. The participants were presented with a scenario of romantic infidelity. This scenario was adopted from the one used by Sabini and Green (2004) with the revisions of combining the descriptions of both emotional and sexual infidelity. Sabini and Green separated these two scenarios to examine

the main effect of different types of infidelity, but this is not the focus of the present study. The present study's scenario read as follows:

> Please think of a serious committed romantic relationship that you have had in the past, that you are currently having, or that you would like to have in the future. Imagine that your romantic partner has fallen in love and is having sexual intercourse with another person.

After reading the scenario, participants were instructed to respond to instruments that measure their cognitive appraisals of the infidelity scenario and their behavioral and emotional reactions to it.

Cognitive appraisal. The Threat and Centrality subscales of the Stress Appraisal Measure (SAM; Peacock & Wong, 1990) were used to assess participants' cognitive appraisals. The Threat subscale measures one's evaluation of the potential harm/loss resulting from the occurrence of a given event, and the Centrality subscale measures the perceived importance of the event for one's well-being. Each subscale has four items that are all written in a question format (e.g., "Is this going to have a negative impact on me?" for the Threat subscale and "Does this situation have important consequence for me?" for the Centrality subscale). The instructions of the SAM direct participants to respond to all items according to how they view the situation right now, using a 5-point Likert-type scale (1 = *not at all,* 2 = *slight,* 3 = *moderately*, 4 = *considerably*, 5 = *extremely*). The internal consistency reliabilities for these two subscales are between .65 to .90 as reported in previous studies using three college student samples (Peacock & Wong, 1990). Evidence for construct and convergent validities was demonstrated by the factor structure and correlations with other variables in expected directions. The internal reliability alphas in the present study were .80 for the Centrality subscale and .68 for the Threat subscale.

Reactions to infidelity. The Negative Affect subscale of the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988) measured participants' emotional reactions to the infidelity scenario. The Negative Affect subscale includes 10 emotional adjectives (e.g., upset, nervous, and afraid) and instructs participants to indicate the degree to which they would feel each emotion if they were in the infidelity situation. The subscale uses a 5-point Likert-type scale (ranging from 1 = *not at all,* 3 = *moderately*, to 5 = *extremely*). Watson et al. (1988) reported reliability (internal consistency) alpha as .82, and validity evidence was demonstrated by significant correlations with other affect indicators. The present sample had an alpha of .79 on the Negative Affect subscale.

A 12-item scale was used to assess participants' behavioral reactions. In a previous infidelity study, Boekhout et al. (1999) developed a 14-item questionnaire to examine the possible emotional and behavioral reactions to infidelity, and seven items from their questionnaire that tapped into behavioral reactions were adopted for the present study. After consulting with two university counselors who have expertise in this area, as well as several undergraduate and graduate students who personally experienced relationship infidelity, we added

five more items to be more comprehensive in describing possible behavioral reactions. Based on the item content, these 12 items were grouped into three types of behavioral reactions (four items for each subscale): aggressive (e.g., "seek revenge"), passive (e.g., "ignore the situation"), and constructive reactions (e.g., "discuss with family or close friends for advice"). Participants were asked to indicate how likely they would be to react to the infidelity scenario with each type of behavior, using a 5-point Likert-type scale (ranging from 0 = *very unlikely* to 4 = *very likely*). Alphas for these three types of behavioral reactions were .61 for aggressive reactions, .70 for passive reactions, and .80 for constructive reactions.

Results

In the preliminary analysis, a 2 (male vs. female) × 2 (currently in a relationship vs. not currently in a relationship) multivariate analysis of variance was used to examine the effects of gender and relationship status on the four dependent variables: three types of behavioral reactions and one negative affect reaction. Results indicated significant main effects of both gender and relationship status but no significant interaction, $F(4, 165) = 0.87$, $p = .524$. Results of a follow-up univariate analysis revealed a significant gender difference on passive behavioral responses, $F(1, 168) = 5.65$, $p = .019$, $\eta^2 = .033$, such that men ($M = 2.24$, $SD = 0.11$) were more likely to use passive behaviors than were women ($M = 1.94$, $SD = 0.06$). Additionally, there was a significant effect of relationship status on constructive behavioral reactions, $F(1, 168) = 9.44$, $p = .002$, $\eta^2 = .053$, such that participants currently in a romantic relationship ($M = 3.91$, $SD = 0.09$) were more likely to react with constructive behaviors than those not in a relationship ($M = 3.40$, $SD = 0.13$). Neither gender nor relationship status was found to have a significant effect on aggressive behavior responses or emotional distress. We also examined whether participants' ages might be a factor associated with observed differences in infidelity reactions. Among the correlation coefficients between age and the four dependent variables, only the aggressive behavioral reaction was significantly correlated with participants' age ($r = -.23$, $p = .002$). Participants' age was then treated as a covariate in all succeeding analyses involving the variable of aggressive behavioral reactions.

To examine the hypotheses, we obtained a correlation matrix of all measured continuous variables to provide information about the bivariate relationships between attachment, cognitive appraisal, and reaction variables. The findings indicated that attachment avoidance was negatively correlated with constructive behavioral reaction ($r = -.22$, $p = .003$) and emotional distress ($r = -.22$, $p = .004$), whereas attachment anxiety was positively correlated with aggressive behavioral reaction ($r = .20$, $p = .009$) and emotional distress ($r = .28$, $p < .001$). In addition, the appraisal of threat was found to be positively correlated with constructive reaction ($r = .17$, $p = .026$) and emotional distress ($r = .53$, $p < .001$), whereas centrality appraisal was negatively correlated with passive reaction

($r = -.15$, $p = .045$) and positively correlated with constructive behavior ($r = .32$, $p < .001$) and emotional distress ($r = .45$, $p < .001$).

We conducted four two-step multiple regression analyses to further examine the first hypothesis with one of the four reaction variables as the criterion variable in each regression analysis. Gender and relationship status were always entered in the first step to control for their effects, and then attachment variables were entered in the second step. Results of the regression model analyses indicated that attachment variables entered in the second step accounted for a unique amount of variance in all four reaction variables: emotional distress, $\Delta R^2 = .09$, $F(2, 167) = 8.55$, $p < .001$; aggressive reaction, $\Delta R^2 = .04$, $F(2, 167) = 3.39$, $p = .030$; constructive reaction, $\Delta R^2 = .05$, $F(2, 167) = 4.28$, $p = .035$; and passive behavioral reactions, $\Delta R^2 = .04$, $F(2, 167) = 3.68$, $p = .027$. Examination of the beta weights revealed which variable was significant in predicting each reaction variable. The results suggested that attachment anxiety was a significant predictor for aggressive reaction ($B = .23$, $\beta = .18$), $t(171) = 2.16$, $p = .033$; passive reaction ($B = .23$, $\beta = .19$), $t(171) = 2.29$, $p = .017$; and emotional distress ($B = .39$, $\beta = .25$), $t(171) = 3.04$, $p = .006$; whereas attachment avoidance significantly predicted passive reaction ($B = .25$, $\beta = .17$), $t(171) = 2.03$, $p = .028$, and constructive behavioral reaction ($B = -.28$, $\beta = -.16$), $t(171) = 1.89$, $p = .013$.

For the second hypothesis, we used multiple regression analyses to examine the predictive effects of appraisal variables on each of the reaction variables, with gender and relationship status entered first to control their effects. Results indicated that stress appraisal accounted for significant variance above and beyond the effects of gender and relationship status in emotional responses, $\Delta R^2 = .28$, $F(2, 167) = 34.71$, $p < .001$, and in constructive behavioral reactions, $\Delta R^2 = .09$, $F(2, 167) = 8.75$, $p < .001$, but not for passive and aggressive behavioral reactions. Examination of beta weights suggested that centrality was a significant predictor for both constructive reactions ($B = .34$, $\beta = .28$), $t(171) = 3.04$, $p = .001$, and emotional distress ($B = .24$, $\beta = .19$), $t(171) = 2.34$, $p = .006$, whereas appraised threat was a significant predictor for negative emotional reaction ($B = .42$, $\beta = .41$), $t(171) = 5.14$, $p < .001$.

Methods outlined by Baron and Kenny (1986) were used to examine the hypothesized mediator effects. Baron and Kenny specified three paths that need to all be significant (i.e., the relations between the predictor and outcome variable, between predictor and mediator, and between mediator and outcome variable) before one can examine the mediator effect. Their approach involves three steps of multiple regression analysis: regressing outcome variables on the predictors, regressing mediators on the predictors, and regressing outcome variables on both predictors and mediators. Because attachment avoidance and anxiety are considered two orthogonal dimensions (Brennan et al., 1998), the hypothesized mediator effects on their relations with the reaction variables were examined separately. Analyses and results for the first hypothesis described earlier essentially fulfill the first step. To conduct the second step, we regressed each of the two appraisal variables on attachment variables one

at a time. Results suggest that avoidance significantly predicted both threat and centrality, whereas attachment anxiety was a significant predictor for threat appraisal only. Based on the three prerequisite conditions identified by Baron and Kenny, the third step of analyzing potential mediator effects was narrowed down to two possible links: centrality appraisal mediating the avoidance–constructive behavior link and threat appraisal mediating the anxiety–emotional distress link. Two multiple regression analyses were conducted to examine the two potential mediators in which gender and relationship status were also entered to control for their effects. Results displayed in Table 1 indicated that when both avoidance and centrality were included in the model, the previous significant relation between avoidance and constructive behavior ($B = -.33$, $\beta = -.18$), $t(171) = 2.48$, $p = .012$, was no longer significant ($B = -.26$, $\beta = -.14$), $t(171) = 1.96$, $p = .052$, which suggests a significant mediating effect of centrality appraisal on the avoidance–constructive behavior link. For the anxiety–emotional distress link, findings shown in Table 2 suggested that attachment anxiety remained a significant predictor for emotional distress when threat appraisal was included in the model, although its beta weight was greatly reduced from .29 to .19. The magnitude of the beta weight change on attachment anxiety was examined following Shrout and Bolger's (2002) procedures. The result yielded a significant z score of 131.75 (greater than 1.96), suggesting that threat appraisal was a partial mediator for the relation between anxiety and emotional distress.

Discussion

This study investigated university students' reactions to romantic infidelity scenarios from adult attachment theory and cognitive appraisal theory.

TABLE 1

Testing Mediator Effect of Centrality Appraisal on the Relation Between Attachment Avoidance and Constructive Reaction

Testing Steps	*B*	*SE B*	β	*t*(171)
Step 1[a]				
Controlled variables				
Gender	–.04	.14	–.02	0.28
Relationship status	–.44	.13	–.25	3.44***
Predictor: attachment avoidance	–.33	.13	–.18	2.48*
Step 2[b]				
Predictor: attachment avoidance	–.29	.11	–.20	2.61*
Step 3[a]				
Controlled variables				
Gender	–.03	.14	–.02	0.24
Relationship status	–.35	.13	–.20	2.69**
Predictor: attachment avoidance	–.26	.13	–.14	1.96
Mediator: centrality	.30	.09	.24	3.27***

[a]Criterion variable: constructive behavior. [b]Criterion variable: centrality appraisal.
*$p < .05$. **$p < .01$. ***$p < .001$.

TABLE 2

Testing Mediator Effect of Threat Appraisal on the Relation Between Attachment Anxiety and Emotional Distress

Testing Steps	*B*	*SE B*	β	*t*(171)
Step 1[a]				
Controlled variables				
Gender	–.25	.15	–.12	1.70
Relationship status	–.29	.13	–.16	2.24*
Predictor: attachment anxiety	.46	.11	.29	4.00***
Step 2[b]				
Predictor: attachment anxiety	.30	.12	.20	2.63**
Step 3[a]				
Controlled variables				
Gender	–.23	.13	–.11	1.80
Relationship status	–.20	.12	–.11	1.70
Predictor: attachment anxiety	.30	.10	.19	2.97**
Mediator: threat appraisal	.49	.07	.48	7.43***

[a]Criterion variable: emotional distress. [b]Criterion variable: threat appraisal.
*$p < .05$. **$p < .01$. ***$p < .001$.

Attachment anxiety and avoidance were found to be significantly correlated with various types of emotional and behavioral reactions to romantic infidelity. In addition, cognitive appraisal not only was found to have significant predictive effects on emotional and constructive behavioral reactions but also mediated the relationship between attachment and participants' infidelity reactions.

Results of both bivariate correlations and regression analyses showed that participants with high attachment anxiety were likely to react to the infidelity scenario with more emotional distress and higher levels of aggressive reactions (e.g., "seek revenge, e.g., spread rumors/disturb your partner at work/slash tires"). These findings appear to parallel the interpersonal styles of an anxiously attached person depicted by the theory. The adult attachment perspective posits that individuals with high attachment anxiety tend to have negative self-concept, are more likely to respond to attachment threat with exaggerated emotions, yet have strong concerns about losing their romantic partners (Mikulincer, 1995; Wang & Mallinckrodt, 2006). The hypervigilant emotional state and aggressive behavioral reactions endorsed by anxiously attached individuals may be demonstrations of hyperactivation attachment strategies to seek attention and protest to their partners when facing anticipated separation.

Another interesting finding is that although the bivariate correlation between anxiety and passive behavior (e.g., "ignore the situation," "keep it to yourself") was nonsignificant, attachment anxiety became a significant positive predictor of passive reactions when the influences of anxiety and avoidance were considered together in the regression. This suggests that the joint effects of anxiety and avoidance enhance the relation between anxiety and endorsement of passive reactions. The high tendency of possibly having both aggressive and passive behavioral reactions found in anxiously attached participants may be

a reflection of the internal bipolar pulls associated with attachment anxiety—exaggerating distress to keep their partners' attention, yet having profound fear of upsetting their partners and being abandoned by them.

Findings of the bivariate correlations indicated that attachment avoidance was negatively correlated with constructive behavioral reactions and emotional distress. That is, participants with high attachment avoidance endorsed lower amounts of negative emotion and were less likely to adopt constructive behavioral strategies to address the relationship crisis. These findings are consistent with what is predicted by the theory. Attachment theory posits that because of the developed negative internal working models of others, individuals with high attachment avoidance tend to have an excessive desire to be self-reliant, be avoidant of intimacy, and avoid emotional expression (Mikulincer & Florian, 1998). Therefore, the negative associations between avoidance and emotional distress and constructive behavior provide support for the deactivation strategies used by avoidantly attached individuals to deal with anticipated separation or attachment threat by distancing themselves from the source of the potential rejection.

With regard to the relationships between cognitive appraisal and individuals' reactions to romantic infidelity, our findings are generally consistent with the predictions derived from the cognitive appraisal theory. According to the theory, the centrality dimension of cognitive appraisal refers to the extent a person evaluates a specific encounter being relevant to her or his well-being, whereas the threat dimension of cognitive appraisal is conceptualized as the estimation of the potential for harm or loss in the future (Peacock & Wong, 1990). Therefore, it is reasonable that those who appraise romantic infidelity as being of higher importance also tend to respond with heightened negative emotions and are more willing to implement constructive actions to remedy the situation. However, when romantic infidelity is considered as a threat with the potential of harm or loss for the individual, it naturally leads to increased negative emotional responses such as distress, guilt, fear, and irritability.

An important finding of this study is the mediator effect of cognitive appraisal variables on various attachment–reaction links. Specifically, centrality appraisal was found to mediate the effects of attachment avoidance on constructive behavioral reactions to the infidelity scenario. The mediating effect suggests that cognitive appraisals of the significance of a particular event perceived by an individual may be a key mechanism largely responsible for the negative association of attachment avoidance and constructive behaviors. To consider the infidelity to be central to one's well-being would indicate that the individual places considerable importance on her or his relationship status and, in doing so, the encountered relationship crisis would become a source that provokes increased levels of anxiety on the individual. Consistent with their negative internal working models of others and the developed deactivation strategies, individuals with high attachment avoidance may use a deactivation strategy by mentally viewing infidelity in relationships as relatively unimportant for

their personal well-being, and therefore will be less likely to use constructive behaviors. Findings from previous adult attachment studies suggest that individuals high on attachment avoidance report lower levels of commitment and are less willing to engage in remediating efforts to address relationship issues (Allen & Baucom, 2004). The mediating effect of centrality found in the present study helps to further pinpoint the essential internal process experienced by avoidant individuals.

The present study has several limitations. First, we used a convenience sample of graduate and undergraduate students on a university campus; therefore, findings may not be generalizable to adults of older ages or with less education. Another limitation is that an infidelity scenario may not engender the same behavioral and emotional reactions that would occur if the romantic infidelity happened in reality. Also, although proper statistical means were implemented to control the effect, about 31% of the participants were not in a romantic relationship at the time of completing the survey. Therefore, findings may underestimate or not be representative of patterns or severity of reactions from individuals who are actually experiencing relationship infidelity. Additionally, all findings from this study are based on self-reported scores so they are prone to the common biases associated with this method.

Nevertheless, findings from this study provide fruitful directions for future research. Future studies may continue to investigate how attachment styles influence behavioral and emotional reactions to infidelity with participants who have recently experienced infidelity. Future research may only focus on those who are currently in romantic relationships to see if the findings could be replicated and to examine whether relationship status may moderate attachment influences on people's reactions to romantic infidelity. In addition, examining the observed variables with more diverse samples will help researchers to explore if some cultural factors may interact with attachment affecting individuals' reactions to romantic infidelity. Findings from this study provide evidence that cognitive appraisals have important direct and indirect effects on one's infidelity reactions. The cognitive appraisal theory posits that there are two levels of appraisal—primary and secondary (Peacock & Wong, 1990)—and both appraisal constructs examined in this study are considered primary. Thus, future research may examine the influences and roles of secondary appraisals on people's reactions to infidelity. Because researchers have consistently indicated significant gender differences on how people react to infidelity (Blow & Hartnett, 2005), another possible direction for future research is to examine the possible moderator effect of gender on the links between attachment/cognitive appraisal and people's reactions to infidelity.

Counseling Implications

The present findings highlight some important implications for counselors and mental health providers who work with university students facing infidelity issues. Because both adult attachment avoidance and anxiety are significantly

associated with particular types of emotional and behavioral reactions to relationship infidelity, attachment theory appears to be a useful conceptualization framework for university counselors to understand possible underlying sources contributing to clients' emotional and behavioral reactions. For example, clients with high attachment anxiety may be more prone to exhibit both passive and aggressive behaviors in the face of romantic infidelity, whereas clients with high attachment avoidance may be more likely to use passive behavioral strategies. In both cases, the findings help counselors understand the psychological factors explaining possible behavioral responses that clients may exhibit when dealing with betrayals in their romantic relationships. With this knowledge, the counselor may react to clients' attachment-related behaviors by disconfirming their expectations and maladaptive patterns of relatedness, thus providing an opportunity for corrective emotional experiences that strengthen working alliance and counseling outcomes (Mikulincer & Shaver, 2007). Instruments that increase clients' awareness of their own attachment styles and various affect regulation and behavioral strategies typically associated with their attachment styles may also be helpful. A number of self-report adult attachment scales with excellent reliability and validity properties (e.g., the ECRS) could be used by college counselors for this purpose. This understanding (e.g., avoidant individuals may be resistant to constructive behavior or anxious individuals tend to demonstrate intense emotional reactions) may bring up new insights on clients and benefit the counseling process.

Another counseling implication of the findings is related to the potential challenges with regard to the counselor–client relationship. It is important to note that clients rely on their internal working models and past attachment experiences as guides to relate to their counselor (Mikulincer & Shaver, 2007). As a result, attempts to process relationship infidelity may cause the client to seek out comfort and safety from the counselor using similar ineffective strategies developed from their early attachment experiences. Consistent with the attachment perspectives, an essential task of counseling is to help clients develop healthier and more effective ways to deal with inner anxiety when it occurs. To achieve this goal, counselors need to pay attention to the process of counseling, resist being pulled into interactions that affirm maladaptive relationship expectations that clients hold, act as a safe harbor from which the client can gain the psychological security needed to heal the wound caused by infidelity, and eventually serve as the secure base that the client can rely on when exploring new ways of interacting with others (Mallinckrodt, Daly, & Wang, 2008). When working with clients high in attachment avoidance, counselors may find it helpful to focus on deactivating strategies to address clients' preference for interpersonal distance and the tendency to elicit emotional detachment from others. Increasing client-to-counselor proximity and maintaining efforts to deepen clients' disclosures are examples of such possible strategies (Wang & Mallinckrodt, 2006). By contrast, when working with anxiously attached clients, counseling strategies such as maintaining an explicitly described therapeutic boundary with clients and promoting client

autonomy may be more effective. The focus here is attending to the client's preference to remain in a dependent position and providing the client with compassion without assuming a savior role (Mikulincer & Shaver, 2007).

The significant mediating effects of cognitive appraisals found in this study suggest that when working with clients with high attachment avoidance or anxiety, it may be helpful for counselors to explore and identify clients' irrational or ineffective thoughts associated with their relationship status or their anticipated consequences of the encountered infidelity. Several cognitive behavior therapy techniques, such as thought record, alternative outcomes, and stress relaxation methods, may be helpful to prevent the potential adverse impacts caused by extreme emotional or behavioral reactions.

In summary, this study extends the current literature by simultaneously considering the direct and indirect effects of adult attachment and cognitive appraisals on a person's emotional and behavioral reactions to romantic infidelity. The findings of the present study provide empirical evidence for the significant associations between attachment, cognitive appraisals, and infidelity reactions, as well as the mediator role played by cognitive appraisal on relationships between adult attachment and infidelity reactions. We hope this study will encourage more empirical research attention in this area, which will provide counselors and mental health professionals with a more comprehensive understanding of what affects a person's reactions to romantic infidelity and enable counselors to design treatments or programs to better address clients' romantic infidelity concerns.

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