

Insecure romantic attachment dimensions and frequency of mate retention behaviors

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Abstract

Individual differences in attachment bonds may influence the performance of mate retention behaviors. Because anxiously attached individuals are hypervigilant to partner rejection cues, we hypothesize that individuals higher in anxious attachment will perform more frequent mate retention behaviors. Because avoidantly attached individuals evade intimacy with their partners, we hypothesize that individuals higher in avoidant attachment will perform less frequent mate retention behaviors. Participants ($N = 469$) in a romantic relationship completed measures of romantic attachment and mate retention behaviors. The results provide support for the study hypotheses but also reveal that avoidantly attached women perform more frequent mate retention behaviors that deter intrasexual rivals. We discuss limitations of this research and highlight directions for research on romantic attachment, mate retention behaviors, and infidelity.

Attachment theory (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969, 1973) is a mid-level evolutionary theory increasingly used to understand features and processes of adult romantic relationships. The adult attachment system (Bartholomew & Horowitz, 1991; Fraley & Shaver, 2000; Shaver & Hazan, 1987) is hypothesized to have evolved from, or was “co-opted” from, the parent–infant attachment system (Fraley & Shaver, 2000; Hazan & Diamond, 2000; Shaver, Hazan, & Bradshaw, 1988), with its primary function to maintain a long-term pair bond between romantic partners, in part, to facilitate offspring surviving to reproductive age (Hazan & Diamond, 2000; Hazan & Zeifman, 1999).

Adult attachment research investigates individual differences in romantic attachment

bonds, particularly deviations from normative attachment patterns (Simpson & Belsky, 2008). Romantic attachment orientations are conceptualized on a continuum reflecting two independent dimensions of *anxiety* and *avoidance* (Brennan, Clark, & Shaver, 1998; Fraley & Shaver, 2000; Fraley, Waller, & Brennan, 2000). Attachment anxiety is characterized by hyperactivation of the attachment system, and attachment avoidance is characterized by hypoactivation of the attachment system (Cassidy, 2000; Cassidy & Berlin, 1994; Cassidy & Kobak, 1988; Edelstein & Shaver, 2004). The degree to which the attachment system is activated in romantic relationships influences the ways in which individuals respond to distressing situations and relationship threats (Bowlby, 1982; Pietromonaco & Barrett, 2000; Shaver & Mikulincer, 2008; Simpson & Belsky, 2008) and may guide the development of reproductive strategies (Chisholm, 1996; Del Giudice, 2009).

The dimensions of attachment insecurity are characterized by distinct characteristics and behavioral patterns within romantic relationships (Shaver & Mikulincer, 2008).

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Anxious attachment motivates attempts to attain proximity to a romantic partner, characterized by an overdependence on romantic partners for stability and reassurance. More anxiously attached individuals are hypervigilant to cues of abandonment and rejection by their partner (Mikulincer & Shaver, 2007; Rholes & Simpson, 2004; Simpson & Rholes, 2015), have difficulty disengaging from cues of relationship threats (Mikulincer, Gillath, & Shaver, 2002), and deploy coercive or controlling behaviors to elicit support from their partner (Mikulincer & Shaver, 2007; Shaver & Mikulincer, 2008). In contrast, more avoidantly attached individuals are motivated to evade emotional and physical intimacy with romantic partners (Shaver & Mikulincer, 2008). More avoidantly attached individuals emphasize independence and self-reliance to decrease proximity to their romantic partner (Edelstein & Shaver, 2004) and discount information about threats to the relationship (Dewitte & De Houwer, 2008; Dykas & Cassidy, 2011; Simpson, Griskevicius, & Kim, 2011).

Because romantic attachment functions to maintain long-term pair bonds, romantic attachment may also be associated with partner infidelity. Research on the associations between attachment orientations and infidelity primarily focuses on the connections that an individual's attachment orientation has with his or her own romantic jealousy and infidelity. For example, anxiously attached individuals report higher levels of chronic romantic jealousy than securely attached individuals (Hazan & Shaver, 1987; Sharpsteen & Kirkpatrick, 1997). More anxiously attached individuals also overestimate relationship threats and underestimate their partner's commitment to the relationship compared to less anxiously attached individuals (Collins, 1996; Mikulincer & Shaver, 2007). In contrast, avoidantly attached individuals report less chronic romantic jealousy than securely attached individuals (Sharpsteen & Kirkpatrick, 1997; see also Guerrero, 1998). More avoidantly attached individuals also report greater endorsement of casual sexual relationships (Brennan & Shaver, 1995; Gentzler & Kerns, 2004) and are more attentive to alternative romantic partners

than less avoidant individuals (DeWall et al., 2011).

However, limited research has addressed how an individual's romantic attachment bond influences perceptions of his or her partner's infidelity or the deployment of behaviors designed to prevent his or her partner's infidelity. Kruger et al. (2013) investigated how attachment bonds influence perceptions of infidelity-type behaviors. Participants were instructed to rate whether various types of interactions with others (i.e., casual social interactions, close relationship behaviors, and sexual and erotic interactions) were considered infidelity. More anxiously attached individuals rated close relationship behaviors as cueing infidelity, whereas more avoidantly attached individuals discounted the relevance of sexual and erotic interactions with others as cues of infidelity. These results suggest that because anxiously attached individuals are hypervigilant for rejection cues by their romantic partner, they are more likely to interpret many behaviors as infidelity, whereas avoidantly attached individuals are more likely to underestimate partner infidelity, possibly due to the hypoactivation of the romantic attachment system.

Because anxiously attached individuals are likely to overestimate partner infidelity, and avoidantly attached individuals are likely to underestimate partner infidelity (Kruger et al., 2013), attachment orientations may also influence the performance of individual mate retention behaviors (Buss, 1988; Buss & Shackelford, 1997; Buss, Shackelford, & McKibbin, 2008)—behaviors that an individual performs in an effort to reduce the risk of partner infidelity and relationship dissolution (e.g., concealing a romantic partner from potential rivals, enhancing one's appearance for a romantic partner, derogating potential rivals to a romantic partner). Performance of mate retention behaviors are partly motivated by the sex-specific costs of partner infidelity: A man whose partner commits infidelity is at risk for cuckoldry—the unwitting investment in offspring to whom he is genetically unrelated (Buss & Shackelford, 1997)—and a woman whose partner commits infidelity is at

risk for losing partner-provisioned resources (Schutzwohl & Koch, 2004).

The hypervigilance to cues of abandonment and rejection displayed by more anxiously attached individuals—coupled with an overperception of infidelity risk—may influence the performance frequency of mate retention behaviors. Put differently, more anxiously attached individuals may employ mate retention behaviors more often in an attempt to thwart partner infidelity.

Hypothesis 1: We hypothesize that individuals higher in anxious romantic attachment will perform more frequent mate retention behaviors across mate retention domains, categories, and tactics.

In contrast, more avoidantly attached individuals attempt to decrease emotional and physical intimacy with romantic partners and underestimate behaviors indicative of infidelity. Thus, more avoidantly attached individuals may perform various mate retention behaviors less often due to decreased perception of infidelity risk.

Hypothesis 2: Individuals higher in avoidant attachment will perform less frequent mate retention behaviors across mate retention domains, categories, and tactics.

For reportorial completeness, performance frequencies of mate retention behaviors across mate retention domains, categories, and tactics are reported (see Buss & Shackelford, 1997; Buss et al., 2008).

Although we expect the direction of the relations between attachment dimensions and mate retention frequency to be largely similar for men and women, consideration of sex as a relevant variable should be explored for several reasons. Romantic attachment and mate retention effort constitute aspects of reproductive strategies, each of which differs between the sexes in evolutionarily predicted ways (e.g., Buss, 2003; Del Giudice, 2009, 2011). Because of asymmetries in reproductive biology (i.e., costs of the development of sperm and ova) and an asymmetry in minimum obligatory parental

investment (i.e., fertilization and gestation occur within females), men can potentially benefit more from extreme reproductive strategies (e.g., highly vs. lowly committed) than women. Thus, important differences may emerge regarding the magnitude of the relation between attachment—specifically, anxious attachment—and mate retention outcomes. For example, because men recurrently faced the adaptive problem of paternity uncertainty (e.g., Buss, 2003), anxiously attached men may be more vigilant of their partner's infidelity, relative to anxiously attached women, because of cuckoldry risk, resulting in a stronger relation between attachment and frequency of mate retention behavior for men than for women. Therefore, the current research will explore sex differences in the magnitude of the relationships between attachment dimensions and the frequency of mate retention behaviors.

Moreover, previous mate retention research has historically and successfully conducted separate analyses for men and women because the motivations for performing mate retention behaviors differ between men and women due to the sex-specific costs of partner infidelity—cuckoldry risk for men and loss of partner-provisioned resources for women (e.g., Barbaro, Pham, & Shackelford, 2015; Buss, 1988; Buss & Shackelford, 1997; Buss et al., 2008). Therefore, separate analyses for men and women concerning the relations between attachment dimensions and mate retention behaviors will afford more accurate comparisons with the previous mate retention literature.

Method

Participants

We secured data from 469 participants (55% men, 51% White, 31% Asian) residing in the United States via Amazon's Mechanical Turk (MTurk). Participants were in a heterosexual, romantic relationship lasting at least 1 year. The mean age of participants was 32.1 years ($SD = 8.9$), and the mean relationship length was 63.1 months ($SD = 71.9$).

Procedure

Prospective participants viewed an advertisement for the study on MTurk's job listings. Individuals who were interested in participating—and eligible to do so—were provided with a link to an information sheet about the study. Those who agreed to participate could access and complete the survey, whereas those who did not agree to participate were exited from the study. We implemented recommended MTurk filters (Peer, Vosgerau, & Acquisti, 2013), such that individuals could participate only if they had successfully completed 95% of at least 500 previously accessed MTurk jobs. Participants reported demographic information (i.e., age, relationship length, and race) and completed measures of romantic attachment and mate retention behaviors. Participants were compensated \$0.50 for completing the study.

Measures

Romantic attachment

Participants completed the Experiences in Close Relationships Scale–Revised (ECR; Fraley et al., 2000), which is a 36-item measure assessing attachment bonds along the dimensions of anxiety and avoidance. Participants were instructed to respond to statements as they relate to their current romantic partner on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Statements included in the ECR were modified to be partner specific rather than partner general. For example, the statement, “When I show my feelings for *romantic partners*, I'm afraid they will not feel the same about me” was modified to “When I show my feelings for *my romantic partner*, I'm afraid my partner will not feel the same about me” (emphasis added). Composite scores were calculated for each participant by averaging their responses to the 18 anxiety items ($\alpha = .96$) and the 18 avoidance items ($\alpha = .89$).

Mate retention

Participants completed the Mate Retention Inventory–Short Form (MRI–SF; Buss et al., 2008), which is a 38-item measure assessing

performance frequencies of mate retention behaviors over the previous 1 year. Participants were instructed to report how often during the past 1 year they performed each mate retention behavior using a 4-point scale (0 = *never*, 1 = *rarely*, 2 = *sometimes*, 3 = *often*). Following Buss et al. (2008), we constructed composite scores for overall mate retention ($\alpha = .96$); 2 mate retention domains, Intersexual Manipulations ($\alpha = .82$) and Intrasexual Manipulations ($\alpha = .72$); 5 mate retention categories, Direct Guarding ($\alpha = .89$), Intersexual Negative Inducements ($\alpha = .90$), Positive Inducements ($\alpha = .79$), Public Signals of Possession ($\alpha = .67$), and Intrasexual Negative Inducements ($\alpha = .90$); and 19 mate retention tactics ($\alpha s = .61-.90$, with the exception of Sexual Inducements, which demonstrated low reliability, $\alpha = .31$) by averaging each participant's responses for the respective items. Following Miner, Starratt, and Shackelford (2009), we constructed composite scores for Benefit-Provisioning mate retention behaviors ($\alpha = .78$) by averaging participant's scores from the Positive Inducements and Public Signals of Possession categories, and for Cost-Inflicting mate retention behaviors ($\alpha = .96$) by averaging participant's scores from the Direct Guarding, Intersexual Negative Inducements, and Intrasexual Negative Inducements categories.

Results

Table 1 displays means and standard deviations for romantic attachment variables and mate retention variables. In all subsequent analyses, we statistically control for relationship length because relationship length is correlated with anxious romantic attachment (men, $r = -.35$, $p < .001$; women, $r = -.31$, $p < .001$), avoidant romantic attachment (men, $r = -.31$, $p < .001$; women, $r = -.19$, $p < .01$), and overall mate retention behavior (men, $r = -.31$, $p < .001$; women, $r = -.30$, $p < .001$). Additionally, because anxious romantic attachment and avoidant romantic attachment are correlated (men, $r = .67$, $p < .001$; women, $r = .65$, $p < .001$), we statistically control for anxious romantic

Table 1. Means and standard deviations for mate retention and attachment dimensions

| | Men | | Women | |
|----------------------------------|----------|-----------|----------|-----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| <i>Mate Retention</i> | | | | |
| Intersexual Manipulations | 1.36 | 0.63 | 1.06 | 0.58 |
| Direct Guarding | 1.14 | 0.83 | 0.75 | 0.76 |
| Vigilance | 1.21 | 0.89 | 0.91 | 0.81 |
| Concealment of Mate | 0.98 | 0.93 | 0.57 | 0.82 |
| Monopolization of Time | 1.22 | 0.94 | 0.78 | 0.90 |
| Intersexual Negative Inducements | 1.16 | 0.78 | 0.78 | 0.73 |
| Jealousy Induction | 1.02 | 0.96 | 0.61 | 0.88 |
| Punish Mate's Infidelity Threat | 1.07 | 0.96 | 0.82 | 0.90 |
| Emotional Manipulation | 1.16 | 0.92 | 0.79 | 0.87 |
| Commitment Manipulation | 1.39 | 0.86 | 0.88 | 0.90 |
| Derogation of Competitors | 1.16 | 0.88 | 0.81 | 0.87 |
| Positive Inducements | 1.78 | 0.58 | 1.64 | 0.54 |
| Resource Display | 1.87 | 0.69 | 1.39 | 0.79 |
| Sexual Inducements | 1.71 | 0.74 | 1.43 | 0.75 |
| Appearance Enhancement | 1.77 | 0.75 | 1.98 | 0.77 |
| Love and Care | 1.94 | 0.75 | 2.05 | 0.73 |
| Submission and Debasement | 1.60 | 0.77 | 1.36 | 0.83 |
| Intrasexual Manipulations | 1.27 | 0.70 | 0.98 | 0.62 |
| Public Signals of Possession | 1.54 | 0.67 | 1.28 | 0.64 |
| Verbal Possession | 1.45 | 0.84 | 1.31 | 0.84 |
| Physical Possession | 1.82 | 0.75 | 1.73 | 0.82 |
| Possessive Ornamentation | 1.36 | 0.90 | 0.81 | 0.93 |
| Intrasexual Negative Inducements | 1.00 | 0.89 | 0.67 | 0.76 |
| Derogation of Mate | 1.00 | 0.94 | 0.75 | 0.81 |
| Intrasexual Threats | 1.08 | 0.95 | 0.74 | 0.91 |
| Violence Against Rivals | 0.94 | 0.99 | 0.52 | 0.83 |
| Benefit-Provisioning | 1.66 | 0.57 | 1.46 | 0.53 |
| Cost-Inflicting | 1.10 | 0.80 | 0.74 | 0.72 |
| Overall Mate Retention | 1.35 | 0.62 | 1.06 | 0.56 |
| <i>Romantic Attachment</i> | | | | |
| Anxious Attachment | 3.63 | 1.39 | 3.12 | 1.47 |
| Avoidant Attachment | 3.03 | 0.92 | 2.65 | 1.17 |

Note. Independent *t* tests reveal that means for all variables (with the exception of Love and Care, Verbal Possession, and Physical Possession) differ significantly by sex ($p < .01$), such that men perform more frequent mate retention than women, and men score higher on anxious and avoidant romantic attachment than women (full analyses available upon request).

attachment when assessing the relations between avoidant romantic attachment and mate retention behaviors, and we statistically control for avoidant romantic attachment when assessing the relations between anxious romantic attachment and mate retention

behaviors. Owing to the large number of statistical analyses conducted, we primarily restrict ourselves to reporting results in the text that are significant at $p < .001$. For reporting completeness, all significance values are reported in Tables 2–4.

Table 2. Partial correlations between mate retention behaviors and attachment bonds for men

| | Anxious <i>r</i> | Avoidant <i>r</i> |
|----------------------------------|---------------------|----------------------|
| <i>Mate Retention</i> | | |
| Intersexual Manipulations | .65*** | -.27*** |
| Direct Guarding | .69*** | -.20** |
| Vigilance | .63*** | -.08 |
| Concealment of Mate | .61*** | -.14* |
| Monopolization of Time | .59*** | -.25*** |
| Intersexual Negative Inducements | .68*** | -.15* |
| Jealousy Induction | .61*** | -.06 |
| Punish Mate's Infidelity Threat | .65*** | -.04 |
| Emotional Manipulation | .50*** | -.14* |
| Commitment Manipulation | .44*** | -.22*** |
| Derogation of Competitors | .59*** | -.07 |
| Positive Inducements | .30*** | -.33*** |
| Resource Display | .23*** | -.27*** |
| Sexual Inducements | .27*** | -.19** |
| Appearance Enhancement | .18** | -.30*** |
| Love and Care | .08 | -.32*** |
| Submission and Debasement | .40*** | -.24*** |
| Intrasexual Manipulations | .64*** | -.26*** |
| Public Signals of Possession | .50*** | -.37*** |
| Verbal Possession | .46*** | -.28*** |
| Physical Possession | .21** | -.31*** |
| Possessive Ornamentation | .50*** | -.29*** |
| Intrasexual Negative Inducements | .66*** | -.08 |
| Derogation of Mate | .58*** | .00 |
| Intrasexual Threats | .58*** | -.13* |
| Violence Against Rivals | .62*** | -.07 |
| Benefit-Provisioning | .45*** | -.38*** |
| Cost-Inflicting | .71*** | -.16** |
| Overall Mate Retention | .66*** | -.29*** |

Note. Partial correlations between mate retention and anxious attachment control for avoidant attachment and relationship length. Partial correlations between mate retention and avoidant attachment control for anxious attachment and relationship length. First-level mate retention = mate retention domains. Second-level mate retention = mate retention categories. Third-level mate retention = mate retention tactics. $n = 259$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Men

To test Hypothesis 1 among male participants, we conducted partial correlations between anxious romantic attachment and overall mate retention, mate retention domains, mate retention categories, mate retention tactics, and Benefit-Provisioning and Cost-Inflicting mate retention while controlling statistically for relationship length and avoidant romantic attachment (see Table 2). In support

of Hypothesis 1, anxious romantic attachment in men is positively correlated with overall mate retention, the two mate retention domains, and the five mate retention categories (all $ps < .001$). Anxious romantic attachment is positively correlated with 16 of the 19 mate retention tactics (all $ps < .001$). Additionally, anxious romantic attachment is positively correlated with Benefit-Provisioning and Cost-Inflicting mate retention behaviors ($ps < .001$).

Table 3. Partial correlations between mate retention behaviors and attachment bonds for women

| | Anxious <i>r</i> | Avoidant <i>r</i> |
|----------------------------------|---------------------|----------------------|
| <i>Mate Retention</i> | | |
| Intersexual Manipulations | .49*** | -.07 |
| Direct Guarding | .47*** | .05 |
| Vigilance | .45*** | -.08 |
| Concealment of Mate | .35*** | .16* |
| Monopolization of Time | .43*** | -.02 |
| Intersexual Negative Inducements | .47*** | .07 |
| Jealousy Induction | .35*** | .22** |
| Punish Mate's Infidelity Threat | .48*** | .12 |
| Emotional Manipulation | .44*** | -.12 |
| Commitment Manipulation | .34*** | -.01 |
| Derogation of Competitors | .25*** | .07 |
| Positive Inducements | .32*** | -.31*** |
| Resource Display | .11 | -.11 |
| Sexual Inducements | .30*** | -.16* |
| Appearance Enhancement | .14* | -.25*** |
| Love and Care | .06 | -.33*** |
| Submission and Debasement | .51*** | -.27*** |
| Intrasexual Manipulations | .41*** | .00 |
| Public Signals of Possession | .32*** | -.17* |
| Verbal Possession | .25*** | -.20** |
| Physical Possession | .20** | -.21** |
| Possessive Ornamentation | .26*** | -.03 |
| Intrasexual Negative Inducements | .41*** | .18** |
| Derogation of Mate | .35*** | .20** |
| Intrasexual Threats | .38*** | .05 |
| Violence Against Rivals | .32*** | .22** |
| Benefit-Provisioning | .35*** | -.26*** |
| Cost-Inflicting | .48*** | -.11 |
| Overall Mate Retention | .66*** | -.06 |

Note. Partial correlations between mate retention and anxious attachment control for avoidant attachment and relationship length. Partial correlations between mate retention and avoidant attachment control for anxious attachment and relationship length. First-level mate retention = mate retention domains. Second-level mate retention = mate retention categories. Third-level mate retention = mate retention tactics. $n = 210$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

To test Hypothesis 2 among male participants, we conducted partial correlations between avoidant romantic attachment and overall mate retention, mate retention domains, mate retention categories, mate retention tactics, and Benefit-Provisioning and Cost-Inflicting mate retention while controlling statistically for relationship length and anxious romantic attachment (see Table 2). In support of Hypothesis 2, avoidant romantic attachment in men is negatively correlated

with overall mate retention and the two mate retention domains (all $ps < .001$). Avoidant romantic attachment is negatively correlated with the mate retention categories of Positive Inducements and Public Signals of Possession ($ps < .001$) but is not correlated with Intrasexual Negative Inducements. Avoidant romantic attachment is negatively correlated with 9 of the 19 mate retention tactics at $p < .001$. Additionally, avoidant romantic attachment is negatively correlated with

Table 4. Tests of sex differences in the correlation coefficients (following Fisher's *r*-to-*z* transformations)

| | Sex differences for anxious <i>z</i> | Sex differences for avoidant <i>z</i> |
|----------------------------------|--|---|
| <i>Mate Retention</i> | | |
| Intersexual Manipulations | 2.56* | -2.21* |
| Direct Guarding | 3.62*** | -2.70** |
| Vigilance | 2.75** | 0.00 |
| Concealment of Mate | 3.77*** | -3.23** |
| Monopolization of Time | 2.33* | -2.52* |
| Intersexual Negative Inducements | 3.41*** | -2.37* |
| Jealousy Induction | 3.68*** | -3.04** |
| Punish Mate's Infidelity Threat | 2.70** | -1.72 |
| Emotional Manipulation | 0.83 | -0.22 |
| Commitment Manipulation | 1.26 | -2.29* |
| Derogation of Competitors | 4.52*** | -1.50 |
| Positive Inducements | -0.24 | -0.24 |
| Resource Display | 1.32 | -1.78 |
| Sexual Inducements | -0.35 | -0.33 |
| Appearance Enhancement | 0.44 | -0.58 |
| Love and Care | 0.22 | 0.12 |
| Submission and Debasement | -1.49 | 0.34 |
| Intrasexual Manipulations | 3.45*** | -2.85** |
| Public Signals of Possession | 2.33* | -2.32* |
| Verbal Possession | 2.59** | -0.91 |
| Physical Possession | 0.11 | -1.15 |
| Possessive Ornamentation | 3.03** | -2.87** |
| Intrasexual Negative Inducements | 3.82*** | -2.81** |
| Derogation of Mate | 3.18** | -2.17* |
| Intrasexual Threats | 2.81** | -1.93 |
| Violence Against Rivals | 4.21*** | -3.14** |
| Benefit-Provisioning | 1.28 | -1.43 |
| Cost-Inflicting | 3.90*** | -0.55 |
| Overall Mate Retention | 0.00 | -2.55* |

p* < .05. *p* < .01. ****p* < .001.

Benefit-Provisioning mate retention behaviors (*p* < .001).

Women

To test Hypothesis 1 among female participants, we conducted partial correlations between anxious romantic attachment and overall mate retention, mate retention domains, mate retention categories, mate retention tactics, and Benefit-Provisioning and Cost-Inflicting mate retention while controlling statistically for relationship length and avoidant romantic attachment (see Table 3).

In support of Hypothesis 1, anxious romantic attachment in women is positively correlated with overall mate retention, the two mate retention domains, and the five mate retention categories (all *ps* < .001). Anxious romantic attachment is positively correlated with 15 of 19 mate retention tactics (all *ps* < .001). Additionally, anxious romantic attachment is positively correlated with Benefit-Provisioning and Cost-Inflicting mate retention behaviors (*ps* < .001).

To test Hypothesis 2 among female participants, we conducted partial correlations between avoidant romantic attachment

and overall mate retention, mate retention domains, mate retention categories, mate retention tactics, and Benefit-Provisioning and Cost-Inflicting mate retention while controlling statistically for relationship length and anxious romantic attachment (see Table 3). In support of Hypothesis 2, avoidant romantic attachment in women is negatively correlated with Benefit-Provisioning mate retention and the Positive Inducements mate retention categories ($ps < .001$). Avoidant romantic attachment is negatively correlated with the mate retention tactics of Appearance Enhancement, Love and Care, and Submission and Debasement (all $ps < .001$). Contrary to Hypothesis 2, avoidant attachment in women is positively correlated with the Intrasexual Negative Inducements mate retention category and positively correlated with the tactics of Jealousy Induction, Derogation of Mate, and Violence Against Rivals (all $ps < .01$). Avoidant romantic attachment is not correlated with Cost-Inflicting mate retention.

Sex differences

We conducted Fisher's r -to- z transformations on our results for men and women to identify sex differences in the magnitude of relations between anxious and avoidant romantic attachment and frequency of mate retention behaviors (see Table 4). The results indicate sex differences for the relation between anxious romantic attachment and the frequency of Cost-Inflicting mate retention behaviors ($p < .001$) but no sex differences in the frequency of Benefit-Provisioning mate retention behaviors or overall mate retention. The results also indicate sex differences for the relation between avoidant romantic attachment and the frequency of overall mate retention ($p < .05$) but no sex differences in the frequency of Benefit-Provisioning or Cost-Inflicting mate retention behaviors. Sex differences are also observed for the relations between both anxious and avoidant romantic attachment and the frequency of various mate retention behaviors across mate retention domains (see Table 4).

Discussion

The current research investigated the relations between the dimensions of insecure romantic attachment and frequency of mate retention behaviors. The results support Hypothesis 1 in that men and women higher in anxious romantic attachment performed more frequent mate retention behaviors. Anxiously attached men and women performed more frequent Benefit-Provisioning mate retention, Cost-Inflicting mate retention, and overall mate retention. Hypothesis 2 was supported for men, such that men high in avoidant romantic attachment performed less frequent mate retention behaviors. Avoidantly attached men performed less frequent Benefit-Provisioning mate retention, Cost-Inflicting mate retention, and overall mate retention. Hypothesis 2 was partially supported for women in that women high in avoidant romantic attachment performed less frequent Benefit-Provisioning mate retention but not less frequent Cost-Inflicting mate retention or overall mate retention.

Tests of Hypothesis 1 provide strong support that more anxiously attached men and women report more frequent performance of various mate retention behaviors. We suggest that because anxiously attached individuals are hypervigilant to rejection cues from their partner (Mikulincer & Shaver, 2007), overperceive relationship threats (Collins, 1996), and overestimate behaviors indicative of infidelity (Kruger et al., 2013), they are motivated to perform behaviors aimed at reducing the risk of partner infidelity. Anxiously attached individuals are fearful of abandonment by their romantic partner, and they report more frequent performance of both Benefit-Provisioning *and* Cost-Inflicting mate retention behaviors. That more anxiously attached individuals perform more Benefit-Provisioning mate retention behaviors may stem from persistent abandonment fears, and thus, anxious individuals may readily attempt to please their partner to prevent their partner's defection from the relationship. The increased frequency of Cost-Inflicting mate retention behaviors could be explained by two regulation strategies employed by anxiously attached individuals: (a) anxiously

attached individuals use controlling or coercive strategies to elicit support and investment from their romantic partner (Mikulincer & Shaver, 2007; Shaver & Mikulincer, 2008), which may be captured by the negative, or cost-inflicting, mate retention behaviors, and (b) anxiously attached individuals attempt to regulate the behaviors and emotions of their romantic partner by inducing guilt to obtain care and attention from their partner as a proximity-maintenance strategy (Overall, Girme, Lemay, & Hammond, 2014; Overall & Lemay, 2015).

The hypothesized relation between avoidant romantic attachment and deployment of mate retention behaviors (Hypothesis 2) is strongly supported for men. More avoidantly attached men report less frequent performance across nearly all categorizations of mate retention behavior, including overall mate retention, Benefit-Provisioning mate retention, and Cost-Inflicting mate retention behaviors. Less frequent mate retention behaviors performed by more avoidantly attached men may result from a general evasion of proximity-seeking behaviors. Many of the mate retention categories, such as Public Signals of Possession and Direct Guarding, necessitate close physical proximity to a romantic partner. Other mate retention categories, such as Positive Inducements, include tactics that often increase emotional intimacy with a romantic partner (e.g., Love and Care, Sexual Inducements). The decrease in mate retention performance frequencies by avoidantly attached men may be a result of a general attempt to decrease intimacy and proximity to their romantic partner and likely reflects low commitment to the relationship.

Tests of Hypothesis 2 for women provide less straightforward results concerning the relation between avoidant romantic attachment and deployment of mate retention behaviors. Although avoidantly attached women did report less frequent performance of some mate retention behaviors, they also report more frequent performance of other mate retention behaviors. Specifically, avoidantly attached women perform less frequent Benefit-Provisioning mate retention behaviors but do not decrease or

increase the frequency with which they deploy Cost-Inflicting mate retention behaviors. However, more avoidantly attached women also perform some mate retention behaviors *more* frequently, including Concealment of Mate and the Intrasexual Negative Inducements.

These sex differences between avoidantly attached men and avoidantly attached women in the deployment of mate retention behaviors may be explained with reference to differential minimal parental investment (Trivers, 1972) and its implications for romantic attachment (Del Giudice, 2009). Because women's minimal obligatory parental investment is dramatically higher than it is for men, a highly avoidant reproductive strategy (i.e., low commitment) may be more costly for women than for men (see Del Giudice, 2009). Women who decrease mate retention efforts across all domains could be at greater risk of partner abandonment, which in ancestral environments would have decreased access to resources and offspring survival. Thus, it appears that more avoidantly attached women perform more frequent mate retention behaviors that deter intrasexual rivals from poaching their partner (e.g., Violence against Rivals, Concealment of Mate) than do men (see Table 4), possibly to compensate for the evasion of emotional intimacy with their romantic partner (e.g., Benefit-Provisioning mate retention) and thereby protect against their partner defecting from the relationship.

Men, however, may be more likely to adopt an avoidant attachment (Del Giudice, 2011) and may be able to more readily "afford" decreases in mate retention efforts—relative to women—because of their lower obligatory parental investment. Additionally, more anxiously attached men perform more frequent mate retention behaviors than do more anxiously attached women. Because of cuckoldry risk, men pursuing a highly committed, monogamous mating strategy would benefit more from greater mate retention efforts, relative to women pursuing a highly committed mating strategy, in an attempt to ensure paternity of offspring.

Results of Fisher's r -to- z transformation provides initial support for these claims—avoidantly attached men perform significantly less overall mate retention behavior than do avoidantly attached women, and anxiously attached men perform significantly more overall mate retention behaviors than do anxiously attached women (see Table 4). In accordance with predictions derived from asymmetries in reproductive biology and in minimum obligatory parental investment, the results are consistent with expectations that men can potentially benefit more from extreme reproductive strategies (i.e., highly committed vs. lowly committed)—which are associated with romantic attachment dimensions—than can women.

The results of the current research have important implications for the continued investigation of the associations between romantic attachment dimensions and mating-relevant outcomes, especially perpetration of aggressive and cost-inflicting behavior against romantic partners. The role of romantic attachment can provide a useful construct to bridge social and evolutionary perspectives on intimate partner violence. For instance, previous social psychological research has consistently documented a relation between anxious romantic attachment and perpetration of intimate partner violence (Bookwala & Zdaniuk, 1998; Fournier, Brassard, & Shaver, 2010; Gormley, 2005; Orcutt, Garcia, & Pickett, 2005), whereas previous evolutionary psychological research has consistently demonstrated relations between perceptions of infidelity, cost-inflicting mate retention behavior, and perpetration of intimate partner violence (Goetz, Shackelford, Romero, Kaighobadi, & Miner, 2008; Mckibbin, Starratt, Shackelford, & Goetz, 2011; Starratt, McKibbin, & Shackelford, 2013).

The current research provides a starting point for the construction of a comprehensive model of aggressive behavior toward romantic partners in which proximate (e.g., romantic attachment) and ultimate (e.g., asymmetries in reproductive biology and parental investment) factors can be accounted for. An important step for future research is to establish the relation

between romantic attachment and perceptions of partner infidelity. The perceived risk of partner infidelity may mediate the relation between attachment insecurity and deployment of mate retention behaviors. This model could then be extended to include perpetration of physical violence and sexual coercion, both of which have been shown to positively correlate with cost-inflicting mate retention behaviors specifically (Kaighobadi, Starratt, Shackelford, & Popp, 2008; Starratt, Goetz, Shackelford, & Stewart-Williams, 2008).

Limitations and future directions

The results of the current research are correlational in nature, and the data cannot support causal claims. Future research could employ experimental designs to determine causal relations. For example, researchers could manipulate attachment orientations toward a romantic partner by having individuals recall and write about times with their romantic partner that are consistent with anxious and avoidant attachment behaviors, for example, "a time when they felt uncomfortable getting close" with their romantic partner (avoidant attachment), and then assess the participant's likelihood of engaging in mate retention behaviors.

We did not secure data on the partner's attachment orientation. Research investigating adult attachment has recognized how the interaction of both partners' attachment bonds can impact romantic relationship functioning (e.g., Overall & Lemay, 2015; Simpson & Rholes, 2015). For instance, highly anxious individuals may perform more mate retention behaviors when paired with a highly avoidant partner than when paired with a securely attached partner because avoidant partners evade emotional and physical intimacy with their partners—the very behaviors for which anxiously attached individuals are vigilant. Future research could profit by securing data from romantic couples to investigate how the attachment bonds of both partners influence perceptions of infidelity and performance of mate retention behaviors.

Conclusion

The current research investigated the relation between the dimensions of insecure romantic attachment and deployment of mate retention behaviors. Tests of Hypothesis 1 reveal that men and women higher in anxious romantic attachment perform more frequent mate retention behaviors across domains, categories, and tactics. Tests of Hypothesis 2 show that men higher in avoidant romantic attachment perform less frequent mate retention behaviors across the mate retention domains, categories, and tactics. Women high in avoidant attachment, however, perform less frequent benefit-provisioning mate retention but perform more frequent mate retention behaviors that deter intrasexual rivals. The results of the current study add to the growing body of research concerning adult romantic attachment from an evolutionary perspective, more generally, and suggest novel avenues of research on the relations between romantic attachment and infidelity behaviors in particular.

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