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Attachment, relationship maintenance, and stress in long distance and geographically close romantic relationships

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ABSTRACT

This study investigated attachment, maintenance behaviors, and stress in long distance (LDR) and geographically close (GCR) romantic relationships. Data was analyzed from participants (N = 473) who were in a serious romantic relationship and who completed two attachment measures, two maintenance behaviors measures, and a perceived global stress measure. A multivariate analysis of variance (MANOVA) revealed significant attachment style and significant LDR/GCR differences for some maintenance behaviors. Two hierarchical multiple regressions indicated that different attachment and maintenance behaviors contributed uniquely to perceived global stress in LDRs and in GCRs. Research and counseling implications are briefly discussed.

KEY WORDS: Attachment theory • long distance romantic relationships • relationship maintenance • stress

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Attachment, relationship maintenance, and stress in long distance and geographically close romantic relationships

Partners in long distance romantic relationships (LDRs), because of career or educational opportunities (Arditti & Kauffman, 2003), choose to live in geographically separated locations and periodically reunite (e.g., for a weekend), before separating again. In our anecdotal experience with graduate students, faculty, counseling clients, and dual-career community adults, LDR partners note their unique stressors (e.g., separation and travel tensions) and wonder if their relationships can be maintained across distance. These issues relate to several relationship theories and are important because: (i) LDRs are increasing (Aylor, 2003); (ii) stress, separation, and relational maintenance are pertinent when persons in LDRs seek counseling (cf. Rhodes, 2002; Westefeld & Liddell, 1982); and (iii) some LDR findings are inconsistent with scholars' expectations (Stafford, 2005). For instance, despite the distance, college student LDRs are more stable than geographically close romantic relationships (GCRs) (Stafford & Merolla, 2007; Stafford & Reske, 1990). Therefore, LDRs can clearly be maintained; however little is known about how they are maintained. In addition, LDRs have unique stressors not present in GCRs (e.g., as travel expenses); but research on global LDR stress is lacking. Therefore, given its relevance to partner separation, relationship functioning, and stress, we used attachment theory to examine relational maintenance behaviors and stress in LDRs and GCRs.

Attachment theory

Attachment refers to the strong emotional bonding and felt security in important romantic relationships (Bowlby, 1988). To regulate security, individuals maintain a comfortable range of proximity to the partner (Bowlby, 1969), who can provide a safe haven (e.g., comforting) during stress/distress and a secure base (e.g., guidance, advice) in times of need. Due to an increased risk of the partner's inaccessibility (Bowlby, 1973), even separation due to planned travel is a threat that activates attachment concerns. Normative responses to attachment activation include, for example, anxiety, loneliness, and yearning for the partner. The partner's psychological (e.g., internal representation), symbolic (e.g., pictures), or physical proximity provides accessibility, calms attachment themes, and restores security.

Separation responses and relationship behavior are linked to internal working models (IWM; Bowlby, 1988). The IWM, based on attachment history, reflects a constellation of thoughts and feelings about the self and the partner, along with strategies that guide attention and affect regulation and behavior. Attachment researchers have identified individual differences in attachment styles or orientations (Mikulincer & Shaver, 2007). The securely attached have positive views of the self and the partner, and regulate emotion by confidently seeking proximity to the partner. Avoidant individuals, on the other hand, use deactivating emotion regulation strategies that suppress attachment-related distress. Specifically, dismissing-avoidants

have a positive self-worth, but have a negative view of the partner, and prefer low emotional involvement. Fearful-avoidants have negative views of both the self and the partner and fear rejection. In contrast, preoccupied individuals (who are also highly anxiously attached) use a hyperactivated affect regulation strategy involving vigilance to proximity threats and continuous attempts to maintain partner proximity. The self-view is negative, and the partner is considered essential to self-worth but insufficiently accessible. Although secure attachment is related to positive relationship qualities (e.g., satisfaction; commitment) (Mikulincer & Shaver, 2007), it is unclear how it relates to relational maintenance behaviors, especially in LDRs.

Relationship maintenance behaviors

Relational maintenance behaviors serve to sustain or improve the relationship (Dindia & Emmers-Sommer, 2006). Two maintenance frameworks are relevant to attachment, LDRs, and perceived stress. First, a typology developed by Stafford and Canary (1991; Stafford, Dainton, & Haas, 2000) describes seven categories of maintenance behaviors (MBs): *assurances* about love and relationship continuation; *openness* in discussing feelings and the relationship; cooperative *conflict management*; *sharing tasks* with the partner; *positivity* or engaging in pleasant interactions; giving *advice* to the partner; and *social networks* or using family/friend support to sustain the relationship. Second, relationships have periods of co-presence and periods of non-co-presence. As a consequence, Dindia and Emmers-Sommer (2006) identified three categories of relationship continuity constructional units (RCCUs; Sigman, 1991) that partners use to create meaning for, and bridge periods of, separation (Gilbertson, Dindia, & Allen, 1998). *Prospective* behaviors (e.g., tell the partner good-bye) address anticipated separation; *introspective* behaviors (e.g., phone when apart) maintain connection during separation; and *retrospective* behaviors (e.g., talk to each other when again face-to-face) reaffirm connection after separation.

Maintenance behavior and attachment. Research suggests that use of MBs (Dainton, 2000) and RCCUs (Gilbertson et al., 1998) are typically related to higher satisfaction and commitment (Stafford et al., 2000). Assurances are particularly important to both relationship qualities, as their benefits persist even when the behavior is used only occasionally (Canary, Stafford, & Semic, 2002). In contrast, overuse of openness (Stafford et al., 2000) and advice (Dainton & Aylor, 2002) can detract from relational quality. Research linking attachment and maintenance is rare (Canary & Dainton, 2006). Simon and Baxter (1993), for example, found the securely attached used more assurances than the dismissing.

Because securely attached individuals manage relational processes more effectively than the anxiously or avoidantly attached (Mikulincer & Shaver, 2007), they will likely enact more frequent MBs (except for openness and advice) and RCCUs. Avoidant individuals, who have a negative view of the partner and avoid self-disclosure, should engage in relatively few assurances. The anxious over-disclose and are often disappointed with the partner

(Mikulincer & Shaver, 2007). In contrast, the secure are high on effective self-disclosure and have high regard for the partner. Therefore, the secure may use higher levels of assurances and positivity than the avoidant and anxious. If the anxious use assurances as a way to keep the partner proximal, they may use more assurances than avoidant individuals.

For RCCUs, the avoidantly attached suppress attachment information and thoughts of the partner, and may, therefore, use relatively few RCCUs. Because the anxiously attached are vigilant about separation, they may exhibit relatively frequent use of RCCUs, especially introspective RCCUs, as they may maintain proximity during separation. The securely attached are aware of attachment cues, are comfortable with proximity, and may use high levels of RCCUs. Therefore, hypothesis one (H1) was that except for openness and advice, use of MBs and RCCUs will be higher for the secure than the avoidant (i.e., dismissing, fearful), with the anxious (i.e., preoccupied) higher on use of assurances and introspective RCCUs than the avoidant.

Maintenance behaviors and LDRs/GCRs. Research that finds no LDR/GCR differences in satisfaction and commitment (Guldner & Swensen, 1995) suggests that LDRs are effectively maintained, despite partners' spending less time together (Stafford & Merolla, 2007). Some LDR partners compensate for physical distance by improving and increasing their communication (Mietzner & Lin, 2005). Perhaps, then, LDR partners use some MBs more often than GCR partners. In general, assurances, positivity, and sharing tasks are used significantly more in LDRs with weekly (vs. no weekly and GCRs) face-to-face contact (Dainton & Aylor, 2001). On the other hand, LDR partners can perform tasks together while visiting one another or even while separated and linked via a webcam or telephone. LDR partners may, however, share fewer tasks as they reserve togetherness time for memorable activities that sustain the relationship (Sahlstein, 2004). In addition, some RCCUs may be used more in LDRs, because separation for days, weeks, or months (vs. hours, in GCRs) is more likely to activate the attachment system and alert partners to proximity issues (cf. Fraley & Shaver, 1998). The introspective RCCUs are consistent with proximity maintenance behavior; so they may be used intentionally to keep the attachment system calm. It is likely, then, that they would be used at higher levels in LDRs. Therefore, hypothesis two (H2) was that use of most MBs and RCCUs will be higher in LDRs than GCRs, with shared tasks higher in GCRs.

LDRs, GCRs, and stress

All couples have to deal with stress while maintaining their relationship. Qualitative studies have identified unique LDR stressors, such as extra expenses (e.g., for travel) and relational disruptions due to travel and distance (Mietzner & Lin, 2005). Moreover, a focus on the relationship when together can make separations "full of stress" (Sahlstein, 2006, p. 159). It does not appear, however, that LDRs/GCRs differentiate stressful lifestyles (Bunker, Zubek, Vanderslice, & Rice, 1992) or school stress (Dellmann-Jenkins, Bernard-Paolucci, & Rushing, 1994). Because these studies did not measure stress, we expect that, first: although LDRs and GCRs have unique

stresses (e.g., lengthy separation vs. daily hassles), global stress is likely to be similar. Second, idealization of the LDR partner (Stafford & Merolla, 2007; Stafford, Merolla, & Castle, 2006) may ameliorate stress in LDRs, further reducing LDR/GCR differences. On the other hand, benefits stemming from LDRs (e.g., increased autonomy; Arditti & Kauffman, 2003; Stafford et al., 2006) may compensate for unique LDR stressors and eliminate stress differences across LDRs and GCRs. Therefore, rather than examining LDR/GCR stress differences, we were interested in which aspects of attachment, MBs, and RCCUs contribute uniquely to perceived stress in LDRs and in GCRs.

Environmental stressors activate attachment processes (Bowlby, 1969, 1988). Differences in attachment styles (Bowlby, 1969, 1988), in turn, influence stress management (Cohen, Kamarck, & Mermelstein, 1983). For example, securely attached individuals exhibit more effective problem-focused coping, whereas the avoidant use distancing coping strategies, and the anxious rely on emotion-focused coping strategies (Mikulincer & Shaver, 2007).

Negative stress effects, however, can be buffered if emotional support is perceived as available from "even one reliable source" (Cohen, 2004, p. 677). Therefore, being able to rely on one's romantic partner may reduce perceived stress. The highly avoidant may report low perceived stress in LDRs and GCRs, because they suppress stress cues and do not usually try to rely on the partner (Mikulincer & Shaver, 2007). In contrast, the highly anxious intensify threat and negative emotion, and they seek the partner's support but often are not calmed by the partner's response. They would, then, have higher levels of perceived stress. In LDRs, the highly anxious may be more stressed because of vigilance to the partner's accessibility and ruminating on uncertainties (e.g., whether the relationship will last; Arditti & Kauffman, 2003) related to being apart. Therefore, high anxious attachment may uniquely predict LDR, but not GCR, perceived stress.

Relatedly, in LDRs, some MBs (e.g., advice) or RCCUs (e.g., introspective) may provide attachment proximity, keep the attachment system calm, and buffer perceived stress. Because GCR partners are typically not separated long enough to activate attachment processes, such MBs and RCCUs may contribute uniquely to perceived stress in LDRs. Other MBs and RCCUs may or may not contribute to LDR/GCR perceived stress. For instance, retrospective RCCUs that reconnect partners may function similarly in LDRs and GCRs, despite lengthier LDR separations. Lacking a strong rationale, we asked (research question one, RQ1) do different patterns of attachment, MBs, and RCCUs contribute uniquely to stress in LDRs and in GCRs?

Method

Participants and procedure

From a larger data collection, we restricted our final sample to unmarried, seriously dating individuals ($N = 473$). The sample included 119 (25.2%) men and 352 (74.4%) women. Most participants were Caucasian ($n = 404$;

85.4%), while 13 (2.7%) African American, 8 (1.7%) Latino/a, 21 (4.4%) Asian American, and 25 (5.3%) other were included. Six (1.3%) participants were high school graduates, 117 (24.7%) were first year undergraduates, 92 (19.5%) were sophomores, 80 (16.9%) juniors, 92 (19.5%) seniors, 84 (27.8%) graduate students, and 2 (0.4%) other. Mean age was 21.00 years (SD = 3.27).

To obtain a sufficient number of men, two data collections (Group 1 n = 179, 37.8%; men = 23, 12.8%; women = 156, 87.2%; Group 2 n = 294, 62.2%; men = 96, 32.9%; women = 196, 67.1%) were performed. Group 2 data were collected four years after Group1 data. Group 1 participants were recruited via a faculty web page; online announcements on barter boards for college students, faculty, and staff; and academic major (e.g., psychology, business) electronic listservs. Group 2 volunteers were obtained via a recruitment email to a men's residence hall and via two registrar-generated random selections of students. The number of persons who received the recruitment message is unknown so we cannot determine a response rate.

Participants self-reported their LDR (n = 294; 62.1%) or GCR (n = 179) status. Significant differences for LDR/GCR status appeared for two demographic items (i.e., "My partner does not live in my close geographic area," and "My partner lives far enough away from me that it would be very difficult or impossible for me to see him/her every day;" r = .93), that we added together, $t(574.34) = 77.92$ (LDRs, M = 13.02, SD = 1.21; and GCRs, M = 2.54, SD = 1.60). Most LDR partners (i.e., 54.9%) reported visiting their partner more than once a month, while 28.4% reported visiting less than once a month and 16.7% visiting once a month.

Participants accessed an information letter and the questionnaires through a URL and password provided in the recruitment messages. As the internet search engine could not direct individuals to the survey until the last two weeks of Group 1 data collection, we believe that most participants are university students, faculty, and staff.

Instruments

Attachment. Two measures, the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991) and the Experience in Close Relationship scale (ECR; Brennan, Clark, & Shaver, 1998), measured romantic attachment, because hypotheses required both categorical and interval level data. The RQ (Bartholomew & Horowitz, 1991) assesses attachment style by crossing the positive or negative view of the self and the partner. Participants choose one of four paragraphs representing the four attachment styles. "Secure" represents a positive view of the self and the partner, and reflects low avoidance and low anxiety. "Preoccupied" represents a negative view of the self and a positive view of the partner, as is consistent with low avoidance and high anxiety. "Dismissing" reflects a positive view of the self and a negative view of the partner, as is consistent with low avoidance and low anxiety. "Fearful" reflects a negative view of the self and the partner, and high avoidance and high anxiety. Both dismissing and fearful are avoidant. The measure has adequate validity (Levy, Blatt, & Shaver, 1998).

The ECR (Brennan et al. 1998) assesses the affect-management dimensions of attachment avoidance (e.g., "I prefer not to show a partner how I feel deep down") and attachment anxiety (e.g., "I worry about being abandoned"). The 36-item scale has 18 items for each dimension. Items are rated on a seven-point Likert-type scale. Higher scores indicate greater avoidance or anxiety. The instrument has strong psychometric properties, and coefficient alphas were .93 and .92 for avoidance and anxiety, respectively.

Maintenance behaviors. Two questionnaires measured relational MBs. The Routine and Strategic Relational Maintenance Scale (RSRMS; Stafford et al., 2000) has 31 items, each accompanied by a seven-point Likert-type scale, with higher scores indicating greater use of the behavior. The scale includes seven MB categories: Assurances, 8 items (α = .92; e.g., "I imply that our relationship has a future"), Openness, 7 items (α = .87; e.g., "I talk about where we stand"), Conflict Management, 5 items (α = .84; e.g., "I am understanding"), Shared Tasks, 5 items (α = .86, e.g., "I do my fair share of the work we have to do), Positivity, 2 items (α = .72; e.g., "I act cheerful and positive around him/her"), Advice, 2 items (α = .75; e.g., "I give him/her my opinion on things going on in his/her life"), and Social Networks, 2 items (α = .71; e.g., "I focus on common friends and affiliations"). To maximize reliability, we deleted a conflict item (i.e., "I apologize when I am wrong").

The 32-item RCCU (Gilbertson et al., 1998) measures behaviors specific to partners' interactional hiatus using three subscales: Prospective, used before separation, 8 items (α = .76; e.g., "tell your partner what you will be doing during the time you are apart"); Introspective, used during separation, 13 items (α = .84; e.g., "display pictures of your partner"); and Retrospective, used after reunion, 9 items (α = .78; e.g., "kiss and/or hug your partner hello"). We asked participants to rate how frequently they engaged in each behavior, using a seven-point Likert-type scale. Higher scores indicate greater use of the RCCU. The introspective items seemed appropriate to LDRs, though meeting for lunch could occur while present together via web or phone. We deleted one item (i.e., "have sex") from the prospective and retrospective scales to maximize reliabilities.

In addition, we conducted exploratory factor analyses (EFAs) for the LDR (n = 294) and the GCR (n = 179) groups using the original and the expanded items (Gilbertson et al., 1998). For LDRs and GCRs, a 2-factor model was the best solution, with prospective and retrospective items loading as one "co-present" factor and introspective items loading as a second "non-co-present" factor. We included the items that loaded for both LDRs and GCRs, and used the resulting seven-item co-presence scale (α = .70) and nine-item non-co-presence scale (α = .81) to analyze H1, H2, and RQ1. The findings were quite similar; so we report the results for the three subscale framework.

Stress. The 14-item Perceived Stress Scale (PSS; Cohen et al., 1983) measures perceived global stress that accrues from life situations being "unpredictable, uncontrollable, and overloaded" (e.g., "In the last month, how often have you felt nervous and 'stressed'?"; Cohen & Williamson, 1988, p. 34).

The PSS is expected to measure global stress over a four to eight week time period, because stress is influenced by coping as well as by daily and major events. The PSS indicates that a person feels that life demands exceed or strain coping abilities. Each item is accompanied by a seven- (Group 1) or five-point (Group 2) Likert-type scale. Higher scores indicate greater stress. Reliability is $\alpha = .85$ (for Group 1, $\alpha = .81$; and for Group 2, $\alpha = .86$). All PSS scores were converted to *z*-scores for analyses.

Results

Preliminary analyses

Means, standard deviations, and correlations among variables are presented in Table 1. The RQ attachment groups were unequal in size: secure = 210 (44.4%), dismissing = 59 (12.5%), preoccupied = 59 (12.5%), and fearful = 132 (27.9%). The attachment style and LDR/GCR association was non-significant, indicating a similar proportion of secure, anxious, and avoidant attachments in LDRs and in GCRs. Men ($M = 40.98$; $SD = 10.08$) were significantly lower on perceived stress than women ($M = 45.42$; $SD = 10.13$), $F(1, 463) = 16.79$, $p < .001$, $\eta^2 = .04$. Positivity was slightly higher for Group 2, $F(1, 405) = 5.09$, $p < .05$, $\eta^2 = .01$; introspective and retrospective behaviors were lower for Group 2, $F(1, 405) = 7.06$, $p < .01$, $\eta^2 = .02$ and $F(1, 405) = 7.60$, $p < .01$, $\eta^2 = .02$, respectively. Stress was higher for Group 1, $F(1, 405) = 268.76$, $p < .001$, $\eta^2 = .40$ (Group 1, $M = 52.50$; $SD = 8.78$; Group 2, $M = 39.27$; $SD = 7.40$). Finally, the preoccupied group reported greater stress than secures and dismissives.

Attachment and LDR/GCR differences

To analyze H1 and H2 about attachment and LDR/GCR differences for MBs and RCCUs, we conducted a MANOVA, using the RQ attachment categories and LDR/GCR as the independent variables, with the MB subscales and the RCCU subscales as dependent variables. MANOVA takes into account unequal cell sizes and the relatedness of the dependent variables (Tabachnick & Fidell, 2007). Because variables with a correlation above .60 are not recommended, we did not use openness or retrospective in the analysis. Most dependent variables were skewed, so we deleted extreme outliers before the analysis, leaving a sample size of 427. Because transformation interferes with interpretation of the results and because MANVOA is robust against these violated assumptions (especially with large samples), we used the scale scores in analyzing the hypotheses.

There were significant main effects for attachment, Hotelling's Trace = .18, $F(24, 1232) = 3.15$, $p < .001$, $\eta^2 = .06$; and LDR/GCR, Wilks' Lambda = .91, $F(8, 412) = 5.01$, $p < .001$, $\eta^2 = .09$. The interaction effect was not significant. Univariate analyses indicated significant attachment differences for assurances, conflict management, positivity, advice, social networks, and introspective (Table 2). Bonferroni post hoc analyses revealed: (i) secure were higher than fearful on conflict management and positivity,

TABLE 1
Correlations between Variables (N = 472)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Assurance	50.22	6.47	–	.66**	.37**	.38**	.25**	.40**	.31**	.56**	.45**	.45**	–.06	–.57**	–.01
2 Openness	40.77	6.34		–	.52**	.38**	.31**	.42**	.34**	.40**	.36**	.40**	–.13**	–.70**	–.12**
3 Conflict Mgt	23.61	3.27			–	.51**	.49**	.26**	.37**	.39**	.31**	.38**	–.22**	–.44**	–.27**
4 Shared Tasks	29.70	4.21				–	.35**	.36**	.32**	.35**	.28**	.38**	–.13**	–.34**	–.14**
5 Positivity	11.80	1.69					–	.25**	.34**	.28**	.32**	.35**	–.28**	–.26**	–.20**
6 Advice	11.72	1.72						–	.25**	.38**	.28**	.30**	–.05	–.31**	–.06
7 Social Networks	10.91	2.41							–	.29**	.30**	.35**	–.18**	–.31**	–.18**
8 Prospective	50.94	4.70								–	.56**	.66**	–.04	–.39**	–.01
9 Introspective	66.28	12.51									–	.60**	.07	–.31**	.02
10 Retrospective	56.56	5.24										–	–.02	–.32**	–.09
11 Stress	44.29	10.27											–	.21**	.34**
12 Avoidance	45.40	15.99												–	.25**
13 Anxiety	65.00	20.53													–

Note. Stress was transformed to z-scores.
*$p < .05$; **$p < .01$.

TABLE 2
Attachment Means, Standard Deviations, *F* Ratios (*N* = 427)

	Attachment Style					
Variable	**Secure (*n* = 199)**	**Dismissing (*n* = 55)**	**Preocc (*n* = 54)**	**Fearful (*n* = 119)**	***F*(3, 419)**	**η^2**
MBs (RSMRS)						
Assurances	51.49_a	47.31_b	52.74_a	48.36_b	11.59***	.08
Conflict Mgt	24.36_a	23.20	23.37	22.77_b	7.19***	.05
Shared Tasks	30.25	29.51	29.69	29.02	2.19	.02
Positivity	11.96_a	11.78	12.00_a	11.24_b	5.45**	.04
Social Networks	11.42_a	10.31_b	10.81	10.44_b	6.20***	.04
RCCU						
Prospective	51.37	50.53	51.63	50.39	2.21	.02
Introspective	67.75_a	64.29	69.28_a	63.61_b	4.80**	.03

Note. Means with different subscripts differ significantly. *$p < .05$; **$p < .01$; ***$p < .001$.

(ii) secure were higher than dismissing and fearful on social networks, (iii) secure and preoccupied were higher than fearful on advice and introspective, and (iv) secure and preoccupied were higher than dismissing and fearful on assurances.

For differences between LDRs and GCRs, prospective was higher in LDRs, $F(1, 419) = 8.72$, $p < .01$, $\eta^2 = .02$ (LDRs, $M = 51.49$; $SD = 4.43$; GRCs, $M = 50.22$; $SD = 4.68$). Introspective was also higher in LDRs, $F(1, 419) = 13.68$, $p < .001$, $\eta^2 = .03$ (LDRs, $M = 68.20$; $SD = 12.25$; GCRs, $M = 63.19$; SD = 12.26). In contrast, shared tasks was higher in GCRs, $F(1, 419) = 5.72$, $p < .05$, $\eta^2 = .01$ (LDRs, $M = 29.45$; $SD = 4.23$; GRCs, $M = 30.23$; $SD = 3.80$). There was, therefore, support for H1 and H2.

Research Question 1 asked if attachment, MBs, and RCCUs contribute uniquely to stress in LDRs and in GCRs. To test this notion, we conducted two hierarchical multiple regressions. We did not include openness and retrospective due to correlations above .60 with other variables. We controlled for sex and data group by entering them in Step 1. We entered the ECR attachment avoidance and anxiety scores in Step 2, because attachment differences are related to coping and distress; then we entered the MBs and RCCUs in Step 3. To maximize power, we used mean substitution for nonsystematic missing data.

For LDRs ($n = 294$), the equation was significant for all three steps. For Step 1, the equation accounted for 40% of the variance, $F(2, 291) = 98.22$, $p < .001$, $R = .64$, $R^2 = .40$ (Adjusted $R^2 = .40$), with data group being a significant predictor (Table 3). Step 2 accounted for an additional 12% of the variance, $F(4, 289) = 77.87$, $p < .001$, $R = .72$, $R^2 = .52$ (Adjusted $R^2 = .51$), $\Delta R^2 = .12$, $\Delta F(2, 289) = 34.74$, $p < .001$. Avoidance and anxiety scores uniquely contributed to stress, after data group was controlled. Step 3 accounted for another 4% of the variance, $F(12, 281) = 29.41$, $p < .001$, $R = .75$, $R^2 = .56$ (Adjusted $R^2 = .54$), $\Delta R^2 = .04$, $\Delta F(8, 281) = 3.01$, $p < .01$. Positivity, advice,

TABLE 3
Multiple Regression of Attachment and Maintenance Behaviors on Stress

Variable	*B*	*SE B*	β	*sr*
		LDRs (*N* = 294)		
Step 1				
Sex	1.00	1.03	.05	.04
Data Group	–13.12	0.99	–.62***	–.60
Step 2				
Sex	0.58	0.94	.03	.03
Data Group	–12.83	0.90	–.61***	–.58
Avoidance	0.06	0.03	.08*	.08
Anxiety	0.16	0.02	.31***	.30
Step 3				
Sex	0.75	0.93	.03	.03
Data Group	–11.97	0.91	–.57***	–.52
Avoidance	0.05	0.04	.07	.52
Anxiety	0.14	0.02	.27***	.24
Assurances	–0.05	0.09	–.03	–.02
Conflict Mgt	–0.20	0.18	–.06	–.04
Shared Tasks	–0.01	0.13	–.00	–.00
Positivity	–0.97	0.31	–.15*	–.13
Advice	0.57	0.28	.09*	.08
Social Network	–0.20	0.19	–.05	–.04
Prospective	–0.00	0.12	–.00	–.00
Introspective	0.12	0.04	.14**	.11
		GCRs (*N* = 179)		
Step 1				
Sex	1.26	1.65	.04	.04
Data Group	–13.54	1.19	–.65***	–.65
Step 2				
Sex	1.13	1.52	.04	.04
Data Group	–13.51	1.09	–.65***	–.64
Avoidance	0.11	0.03	.18**	.17
Anxiety	0.11	0.03	.21***	.20
Step 3				
Sex	0.43	1.58	.02	.02
Data Group	–13.53	1.25	–.65***	–.63
Avoidance	0.08	0.04	.13	.09
Anxiety	0.10	0.03	.20**	.18
Assurances	–0.16	0.12	–.10	–.07
Conflict Mgt	–0.22	0.21	–.07	–.05
Shared Tasks	0.12	0.16	.04	.04
Positivity	–0.65	0.37	–.11	–.09
Advice	0.21	0.35	.04	.03
Social Network	0.13	0.29	.03	.03
Prospective	0.13	0.15	.06	.04
Introspective	0.01	0.06	.01	.01

Note. Criterion variable is Perceived Global Stress.
*$p < .05$; **$p < .01$; ***$p < .001$.

and introspective behaviors emerged as significant, unique contributors to stress. In the full model, accounting for 56% of the variance in stress scores, data group (with Group 1 higher), attachment anxiety, advice, and introspective were positively related to stress; positivity was negatively related to stress.

For GCRs (n = 179), the equation was significant for all steps. Step 1 accounted for 43% of the variance, $F(2, 176) = 67.41$, $p < .001$, $R = .66$, $R^2 = .43$ (Adjusted $R^2 = .43$). Data group was a significant predictor. Step 2 accounted for an additional 10% of the variance, $F(4, 174) = 48.96$, $p < .001$, $R = .73$, $R^2 = .53$ (Adjusted $R^2 = .52$), $\Delta R^2 = .10$, $\Delta F(2, 174) = 17.71$, $p < .001$. Avoidance and anxiety uniquely contributed to perceived stress. Adding the MB and RCCU variables in Step 3 did not contribute additional significant variance, $\Delta F(8, 166) = 1.02$, ns. In the final model, accounting for 55% of the variance, βs revealed that data group (with Group 1 scoring higher) and attachment anxiety were positively associated with stress.

Discussion

The present results are generally consistent with the hypotheses and indicated that attachment, MBs, and RCCUs contribute uniquely to perceived stress in LDRs and GCRs. There were attachment differences on MB of assurances, conflict management, positivity, advice, social networks, and the RCCU of introspective behavior. Use of prospective and introspective RCCUs were more frequent in LDRs while in GCRs, participants performed more shared tasks. In predicting stress in LDRs, being in data Group 1, having greater attachment anxiety, lower use of positivity, higher use of advice, and higher use of introspective behavior contributed uniquely to higher perceived stress. For GCRs, being in data Group 1 and higher attachment anxiety contributed uniquely to higher stress.

Attachment and maintenance behaviors

Generally, as expected, the secure, when compared with the avoidant, reported more frequent use of most maintenance behaviors. There were, however, no significant attachment findings for shared tasks or prospective RCCUs. Except for advice, this result is consistent with secure attachment (Mikulincer & Shaver, 2007), high use of some MBs (Dainton & Aylor, 2002; Stafford & Canary, 1991), and high use of prospective RCCUs (Gilbertson et al., 1998) all being associated with relationship satisfaction. The preoccupied were higher than the dismissing and fearful on use of assurances, higher than the fearful on introspective RCCUs, and, unexpectedly, higher than the fearful on advice.

More specifically, secure individuals reported more frequent use of conflict management and positivity than did the fearful. These differences likely stem from these groups having opposing views of the self and partner. Secure individuals likely have confidence in both their own and their partner's motivation and ability to manage conflict. The fearful may use fewer conflict management MBs because they question their own self-worth and believe

that their partner will be rejecting rather than motivated to resolve conflict. Along similar lines, positivity, that is, being cheerful around the partner, may reflect confidence in, versus negative beliefs about, both the self and the partner.

Both the secure and preoccupied were higher than the fearful on advice and introspective. There are several potential reasons why the secure may be more likely to use advice to maintain relationships. It may be that they are confident in their maintenance abilities, because they provide comfort as a secure base for the partner, or because their partners frequently seek advice (Mikulincer & Shaver, 2007). The preoccupied may use advice to keep the partner proximal and accessible. In contrast, the fearful may be less likely to use advice because they doubt their own ability to give, or their partner's worthiness to receive, advice. The fearful, unlike the dismissing, may worry that their advice, and hence the self, will be rejected. Moreover, introspective RCCUs might reflect comfort with proximity maintenance for the secure and, for the preoccupied, may be an attempt to gain proximity and attachment security. For the fearful, lower use of introspective RCCUs may reflect a relationship devaluation as a means of maintaining distance proximity as a form of attachment security.

The secure also reported more frequent use of assurances and social networks than the dismissing and the fearful, with the preoccupied also higher on use of assurances than the avoidant. Both the dismissing and the fearful prefer distance, are not socially adept, and do not enjoy social interaction (Mikulincer & Shaver, 2007). Avoidant attachment is, then, consistent with less use of social interaction as a maintenance strategy. In addition, avoidant attachment is associated with lower levels of commitment and love (Mikulincer & Shaver, 2007), which may reflect less frequent use of assurances. The preoccupied may use more assurances than the avoidant in order to elicit a similar response from the partner, to create proximity and accessibility.

LDRs/GCRs and maintenance behaviors

Except for shared tasks, LDR and GCR partners use most MBs with similar frequency. Such a result is consistent with research finding no differences in the quality of LDRs and GCRs (Dellmann-Jenkins et al., 1994; Guldner & Swensen, 1995). Shared tasks may be used more frequently in GCRs, because of their routine nature (Dainton & Aylor, 2002). In LDRs, shared tasks likely require additional planning (e.g., LDR partners might arrange to communicate via phone or webcam while doing laundry). Doing so, however, they may focus on their conversation (e.g., assurances or mundane discussion). When LDR partners are physically together, shared tasks may be performed only after engaging in higher-quality activities. In both cases, shared tasks may lack strong meaning, thereby reducing partners' awareness and memory of the tasks.

Persons in LDRs (vs. GCRs) reported more use of prospective and introspective RCCUs. GCR daily separations (e.g., for work or school) are typically much shorter than those experienced in LDRs (e.g., hours instead of weeks and months) and are less likely to activate attachment concerns.

Sahlstein (2004) concluded that LDR partners' "time together creates a 'longing' or 'pining' for their partner that occurs right after they have spent time together" (p. 699). In addition, Guldner (1996) viewed LDR partners' feeling blue as an "ubiquitous response to … separation" (p. 293). It is possible that prospective and introspective behaviors function to address attachment themes created by separation and serve a proximity maintenance function. In short, LDR partners may use RCCUs to address attachment issues and maintain or improve the relationship.

Predicting stress in LDRs and GCRs

How attachment, MBs, and RCCUs predict general stress was similar across LDRs and GCRs. Being in the first data collection group as well as high levels of both avoidance and anxiety were positively associated with perceived global stress. Individuals with high attachment avoidance avoid stressors, rather than engage in problem solving, and expend energy suppressing stress (Mikulincer & Shaver, 2007). The defense can, however, weaken (Edelstein & Shaver, 2004). Thus, perceived global stress likely increases because stressors are ignored and energy is required to maintain an unsuccessful defense. In contrast, the anxiously attached likely increase their stress through the continual monitoring of the partner and through obsessing on worries. This emotional style diminishes problem solving and exacerbates stress.

When maintenance and RCCUs were added to the regression equation, anxiety, but not avoidance, remained a unique predictor of stress in both LDRs and GCRs. The highly avoidant may alleviate some stress by using MBs and RCCUs. For example, an assurances or positivity behavior may function to create or maintain proximity and provide a safe haven or secure base. That is, some MBs and RCCUs may be a covert indirect way of gaining proximity and security, which, in turn, may attenuate stress. On the other hand, the highly anxious may exacerbate stress. In seeking proximity indirectly (Mikulincer & Shaver, 2007), they may use MBs and RCCUs to elicit stress-related support, but the message may be garbled by the intense emotion. Partners may not respond because they view the need for help as exaggerated or misinterpret the cue. This, of course, would itself be stressful for the anxious.

When MBs and RCCUs were added, results differed across LDRs and GCRs. This suggests that MBs and RCCUs are differentially related to stress in LDRs and GCRs. In GCRs, MBs and RCCUs did not contribute uniquely to perceived stress. Future research, however, could examine if they are relevant to relationship-specific stress. In LDRs, using less positivity, more advice, and more introspective RCCUs, contributed to higher perceived global stress. Using less positivity is consistent with the anxiously attached who exhibit more distress in conversations, and are perceived as enjoying them less (Mikulincer & Shaver, 2007). In LDRs, when stressed, the anxious may obsess about the partner's physical absence, thereby increasing their negativity. This might cause them to become increasingly demanding, thereby lowering any positivity behaviors. In addition, positivity is often used routinely, rather than strategically (cf. Stafford et al., 2000) and is

related to high relational satisfaction (Dainton & Aylor, 2002), though its effects degrade without consistent use (Canary et al., 2002). Less use of positivity in LDRs suggests that they may be unsatisfying during times of stress. Further, use of advice may reflect a misguided attempt to engage in problem solving, as if the person gives help when needing help with stress.

Finally, for LDRs, greater use of introspective RCCUs was associated with high perceived global stress. Introspective RCCUs are used less frequently than prospective and retrospective behaviors (Gilbertson et al., 1998), possibly because the behavior (e.g., emailing while apart) may interrupt the partner's routine. Although LDR partners may interpret introspective behaviors as disruptive, they may see the behaviors as a means to alleviate stress due to the separation. Introspective behaviors could reflect stress-related support seeking. This might be more salient to the highly anxious due to their over-reliance on the partner. Indeed, use of introspective behavior may be particularly characteristic of the highly anxious. It may also be that frequent use of introspective behaviors is unsuccessful at gaining needed support, instead pushing the partner away when the intent is to bring the partner closer. In addition, the partner may be unable to marshal a supportive, stress-attenuating response that simultaneously conveys accessibility and proximity. These results suggest a challenge for LDR partners, especially the highly anxious. During high stress, they may have difficulty obtaining sufficient proximity or the kind of partner support that reduces stress.

Limitations

The study's limitations should be considered in interpreting the results. First, measures developed for GCRs may have different meanings in LDRs. Instruments did generally produce results consistent with past theory and previous research. In addition, we used the expanded version of the RCCUs (as suggested by Gilbertson et al., 1998); however, we found lower reliability than in previous investigations. This may be because we used different instructions, and individuals rather than couples. The attachment measures were presented first and might have influenced participants' responses to the RCCU items.

Second, we have no explanation about why stress scores were higher in Group 1. Both Group 1 and Group 2 data were collected across an academic year, but Group 1 data was collected within two years of the 9/11 US terrorist attacks. Our perceived global stress finding may be related to societal phenomena (e.g., color-coded terrorist threat advisory and protective procedures). In addition, the research design does not permit causal inferences. Further, the data are subject to biases inherent in self-report research. This bias may extend to participants' self-defining as in an LDR or GCR. Finally, the sample was relatively homogeneous and young. People in various cultures or life phases may manage relationships and stress differently.

Implications and conclusion

This study's results may be useful to researchers and clinicians. Research should examine issues such as the extent to which, and under what conditions, maintenance behaviors address attachment themes. For example, do

assurances fulfill the safe haven function; does advice fulfill the secure base function; and do introspective RCCUs fulfill the proximity function? In addition, research should investigate whether maintenance scale items have similar meaning for LDR and GCR partners and should further investigate the factor structure of MB or RCCU scales, particularly for LDRs. The RCCU concept is particularly intriguing for LDRs, specifically the attachment separation–reunion cycle. Finally, research on the links among attachment, MBs, RCCUs, relational satisfaction, and commitment, over high and low stress periods, in LDRs and GCRs would be interesting. It would be useful, also, to examine the link of person and partner responses (cf. Ramirez, 2008).

Clinicians need more information about LDRs and GCRs. They need to know how variables (e.g., MBs) may function in unique and similar ways in LDRs and GCRs. For instance, counselors with LDR clients may explicitly discuss stress management (Rhodes, 2002). Given the present results, counselors can coach LDR clients to think about MBs and RCCUs. This planning may inoculate the client, particularly those highly anxiously attached, to better cope with high perceived stress by consistent use of positivity and by not overusing advice or introspective RCCUs. When anxiously attached LDR clients feel high stress, counselors may engage the client in talking about how introspective behaviors could contribute to, rather than relieve, stress. Recognizing the behavior pattern may help the person to modify MBs that overwhelm the partner.

To conclude, relational knowledge is essential because stable, emotionally important relationships are a source of support and health (Cohen, 2004), and are the context of lifelong development (Reis, Collins, & Berscheid, 2000). This study contributes to the literature by finding attachment differences on relational maintenance behavior, LDR/GCR differences on introspective and prospective RCCUs, and an overall different pattern of attachment, MBs, and RCCUs contributing uniquely to high LDR and GCR perceived global stress.

REFERENCES

Arditti, J. A., & Kauffman, M. (2003). Staying close when apart: Intimacy and meaning in long-distance dating relationships. In M. Coleman & L. Ganong (Eds.), *Points and counterpoints: Controversial relationships and family issues in the 21st century (an anthology)* (pp. 51–55). Los Angeles: Roxbury.

Aylor, B. A. (2003). Maintaining long-distance relationships. In D. J. Canary & M. Dainton (Eds.), *Maintaining relationships through communication: Relational, contextual, and cultural variations* (pp. 127–139). Mahwah, NJ: Lawrence Erlbaum Associates.

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*, 226–244.

Bowlby, J. (1969). *Attachment and Loss: Vol. I: Attachment*. New York, Basic Books.

Bowlby, J. (1973). *Attachment and loss: Vol. II: Separation*. New York: Basic Books.

Bowlby, J. (1988). *A secure base*. New York: Basic.

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York: Guilford.

Bunker, B. B., Zubek, J. M., Vanderslice, V. J., & Rice, R. W. (1992). Quality of life in dual-career families: Commuting versus single-residence couples. *Journal of Marriage and the Family, 54*, 399–407.

Canary, D. J., & Dainton, M. (2006). Maintaining relationships. In A. L. Vangelisti & D. Perlman (Eds.), *The Cambridge handbook of personal relationships* (pp. 727–743). New York: Cambridge University Press.

Canary, D. J., Stafford, L., & Semic, B. A. (2002). A panel study of the associations between maintenance strategies and relational characteristics. *Journal of Marriage and the Family, 64*, 395–406.

Cohen, S. (1986). Contrasting the Hassles Scale and the Perceived Stress Scale: Who's really measuring stress. *American Psychologist, 41*, 716–718.

Cohen, S. (2004). Social relationships and health. *American Psychologist, 59*, 676–684.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*, 385–396.

Cohen, S., & Williamson, G. M. (1988). Perceived stress in a probability sample of the United States. In S. Spacapan & S. Oskamp (Eds.), *The social psychology of health* (pp. 31–67). Newbury Park, CA: Sage.

Dainton, M. (2000). Maintenance behaviors, expectations for maintenance, and satisfaction: Linking comparison levels to relational maintenance strategies. *Journal of Social and Personal Relationships, 17*, 827–842.

Dainton, M., & Aylor, B. (2001). A relational uncertainty analysis of jealousy, trust, and maintenance in long-distance versus geographically close relationships. *Communication Quarterly, 49*, 172–188.

Dainton, M., & Aylor, B. (2002). Routine and strategic maintenance efforts: Behavioral patterns, variations associated with relational length, and the prediction of relational characteristics. *Communication Monographs, 69*, 52–66.

Dellmann-Jenkins, M., Bernard-Paolucci, T. S., & Rushing, B. (1994). Does distance make the heart grow fonder? A comparison of college students in long-distance and geographically close dating relationships. *College Student Journal, 28*, 212–219.

Dindia, K., & Emmers-Sommer, T. M. (2006). What partners do to maintain their close relationships. In P. Noller & J. A. Feeney (Eds.), *Close relationships: Functions, forms and processes* (pp. 305–324). New York: Psychology Press.

Edelstein, R. S., & Shaver, P. R. (2004). Avoidant attachment: Exploration of an oxymoron. In D. J. Mashek & A. Aron (Eds.), *Handbook of closeness and intimacy* (pp. 397–412). Mahwah, NJ: Lawrence Erlbaum.

Fraley, R. C., & Shaver, P. R. (1998). Airport separations: A naturalistic study of adult attachment dynamics in separating couples. *Journal of Personality and Social Psychology, 75*, 1198–1212.

Gilbertson, J., Dindia, K., & Allen, M. (1998). Relational continuity constructional units and the maintenance of relationships. *Journal of Social and Personal Relationships, 15*, 774–790.

Guldner, G. T. (1996). Long-distance romantic relationships: Prevalence and separation-related symptoms in college students. *Journal of College Student Development, 37*, 289–296.

Guldner, G. T., & Swensen, C. H. (1995). Time spent together and relationship quality: Long-distance relationships as a test case. *Journal of Social and Personal Relationships, 12*, 313–320.

Levy, K. N., Blatt, S. J., & Shaver, P. R. (1998). Attachment styles and parental representations. *Journal of Personality and Social Psychology, 74*, 407–419.

Mietzner, S., & Lin, L-W. (2005). Would you do it again? Relationship skills gained in a long-distance relationship. *College Student Journal, 39*(1), 192–200.

Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York: Guilford.

Ramirez, A., Jr. (2008). An examination of the tripartite approach to commitment: An Actor-Partner Interdependence Model Analysis of the effect of relational maintenance behavior. *Journal of Social and Personal Relationships, 25*, 943–965.

Reis, H. T., Collins, W. A., & Berscheid, E. (2000). The relationship context of human behavior and development. *Psychological Bulletin, 126*, 844–872.

Rhodes, A. R. (2002). Long-distance relationships in dual-career commuter couples: A review

of counseling issues. *The Family Journal: Counseling and Therapy for Couples and Families, 10*, 398–404.

Sahlstein, E. M. (2004). Relating at a distance: Negotiating being together and being apart in long-distance relationships. *Journal of Social and Personal Relationships, 21*, 689–710.

Sahlstein, E. M. (2006). Making plans: Praxis strategies for negotiating uncertainty-certainty in long-distance relationships. *Western Journal of Communication, 70*, 147–165.

Sigman, S. J. (1991). Handling the discontinuous aspects of continuous social relationships: Toward research on the persistence of social forms. *Communication Theory, 1*, 106–127.

Simon, E. P., & Baxter, L. A. (1993). Attachment-style differences in relationship maintenance strategies. *Western Journal of Communication*, 416–430.

Stafford, L. (2005). *Maintaining long-distance and cross residential relationships*. Mahwah, NJ: Lawrence Erlbaum Associates.

Stafford, L., & Canary, D. J. (1991). Maintenance strategies and romantic relationship type, gender and relational characteristics. *Journal of Social and Personal Relationships, 8*, 217–242.

Stafford, L., Dainton, M., & Haas, S. (2000). Measuring routine and strategic relational maintenance: Scale revision, sex versus gender roles, and prediction of relational characteristics. *Communication Monographs, 67*, 306–323.

Stafford, L., & Merolla, A. J. (2007). Idealization, reunions, and stability in long-distance dating relationships. *Journal of Social and Personal Relationships, 24*, 37–54.

Stafford, L., Merolla, A. J., & Castle, J. D. (2006). When long-distance dating partners become geographically close. *Journal of Social and Personal Relationships, 23*, 901–919.

Stafford, L., & Reske, J. R. (1990). Idealization and communication in long-distance premarital relationships. *Family Relations, 39*, 274–279.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson.

Westefeld, J. S., & Liddell, D. (1982). Coping with long-distance relationships. *Journal of College Student Personnel, 23*, 550–551.