

Exploring the Cognitive-Emotional Pathways between Adult Attachment and Ego-Resiliency

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ABSTRACT - Adult attachment-related anxiety and avoidance are associated with maladaptive social functioning. We investigated the cognitive-emotional patterns associated with these adult attachment dimensions and their relations to a flexible and resilient approach to life. A sample of adults ($N = 388$) completed questionnaires regarding adult attachment, emotional expression and regulation, and ego-resiliency. Structural equation modeling showed that attachment anxiety, together with rumination, contributed to elevated negative affect, decreased mood repair, and in turn, lower ego-resiliency. In contrast, attachment-related avoidance, together with emotional suppression, was associated with diminished clarity and repair of moods, which together predicted lower ego-resiliency. Total indirect effects were significant in each model, but specific mediating pathways involving rumination and suppression were significant for women, but not for men. These results reaffirm that attachment insecurities are associated with suboptimal socioemotional functioning, but suggest distinct pathways depending on the form of insecurity and its related emotional dynamics.

Human development is profoundly influenced by social relationships. Throughout the lifespan, experiences in close relationships help to shape developmental processes, including ones that determine socioemotional functioning. Attachment theory (Bowlby, 1982/1969) has been an exceptionally productive approach to the study of close relationships, both parent-child relationships and adult couple relationships. Social psychologists have found that attachment insecurities can be reliably assessed by self-report measures in terms of two orthogonal dimensions; attachment-related anxiety and avoidance, with attachment security indicated by low scores on both dimensions (e.g., Mikulincer & Shaver, 2007).

There is considerable evidence that attachment *security* is associated with many cognitive, emotional, and social benefits (Cassidy & Shaver, 2008). One way that attachment security may contribute to positive adjustment is by fostering an open, flexible, and optimistic approach to life's diverse and often unpredictable challenges. The development of such a flexible and adaptive stance, operationalized here as ego-resiliency (Block & Block, 1980), may occur as repeated experiences in secure attachment relationships organize and optimize emotion-regulation strategies and cognitive representations of self and others.

The regulation of affect is central to attachment theory. Repeated experiences with sensitive and responsive attachment figures increase a person's general sense of safety and security and encourage the use of security-based strategies of affect regulation. These strategies are aimed at alleviating distress and maintaining comfortable, supportive intimate relationships, and they generally contribute positively to personal adjustment. They include optimistic beliefs about distress management, beliefs about others' trustworthiness and goodwill, and a sense of self-efficacy about dealing with threats (Shaver & Hazan, 1993). Security-based strategies effectively integrate cognitive and affective processes so that emotions can be openly acknowledged and clearly understood, while at the same time, metabolized and expressed without one's becoming excessively distressed or disorganized. These tendencies are characteristic of individuals (called secure with respect to attachment) who score low on measures of attachment anxiety and avoidance.

Experiences with attachment figures perceived as inconsistently or rarely available can result in energetic, insistent attempts to attain proximity, support, and love. These secondary attachment strategies are called hyperactivating (Cassidy & Kobak, 1988) because they involve up-regulating the attachment system, in part by remaining hyper-vigilant to possible threats and being frequently concerned about the availability of attachment figures. Hyperactivation of the attachment system has been related to rumination on threat-related concerns and increased negative reactions to perceived and experienced threats (Mikulincer & Florian, 1998). Rumination has also been associated with the maintenance or exacerbation of negative mood states (Nolen-Hoeksema & Morrow, 1993), increased number and severity of major depressive episodes (Kuehner & Weber, 1999), and maladaptive problem solving and emotion regulation (Lyubomirsky & Nolen-Hoeksema, 1995). It is noteworthy that women appear more likely than men to engage in rumination when distressed (Nolen-Hoeksema, Larson, & Grayson, 1999).

In contrast, appraising proximity seeking as unlikely to alleviate distress results in deliberate deactivation of the attachment system, inhibition of the quest for support, and a commitment to deal with threats alone. These strategies are called deactivating (Cassidy & Kobak, 1988) because they involve the diversion of attentional resources away from possible threats and the suppression of attachment-related thoughts, feelings, and wishes (Fraley, Garner, & Shaver, 2000). People who regularly suppress or deny negative emotions and feelings of vulnerability are left with a sense of inauthenticity (Gillath, Sesko, Shaver, & Chun, 2010) and a lack of clarity about the antecedents, qualities, and meaning of emotional states (Shaver & Mikulincer, 2007). Gender may also play a role in moderating the emotional dynamics of the avoidant style, with men, more so than women, showing less attention to and greater suppression of emotion (Gross & John, 2003).

Emotion regulation involves changes in emotional dynamics and consists of the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying the temporal and intensity aspects of emotional reactions (Thompson, 1990). The ability to modulate emotional reactions as they unfold over time has been described in terms of "mood repair," which involves reappraising or changing an emotion-laden situation in ways that favorably alter the emotional impact (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). For example, mood repair is positively correlated with attention to emotion

and clarity of emotional states (Mayer, Salovey, & Caruso, 2000). Research has also shown that mood repair is positively associated with the ability to perceive emotionally stressful situations as less threatening (Salovey, Stroud, Woolery, & Epel, 2002) and is inversely related to emotion-regulation strategies involving suppression (Gross & John, 2003) and rumination (Salovey et al., 2002). Thus, individuals who utilize mood repair tend to approach emotionally challenging situations optimistically by reinterpreting stressful circumstances in a goal-consistent manner while actively working to repair negative mood states or maintain positive ones.

As a means of conceptualizing personality constructs central to motivation, emotion, and behavior, Jack Block (1980, 2002) proposed “ego-resiliency” as the dynamic capacity to regulate one’s level of cognitive, emotional, and behavioral control in response to situational challenges and affordances. Across several different research methodologies, researchers have found that individuals higher in ego-resiliency are better able to recover from negative emotional experiences and flexibly adapt to the fluctuating demands of stressful experiences (e.g., Block & Block, 1980; Block & Kremen, 1996; Tugade & Fredrickson, 2004). On the other hand, individuals low in ego-resiliency tend to respond to stressful situations in a rigid and perseverative manner, or in a chaotic and unregulated fashion (Block & Kremen, 1996). Evidence also suggests that highly resilient individuals have a curious, non-defensive, and optimistic approach to life (Block & Kremen, 1996), as well as higher levels of self-confidence and better psychological adjustment (Klohn, 1996). Therefore, the construct of ego-resiliency captures an open, flexible, and adaptive approach to life, which we expect to be associated with greater self-awareness and more effective emotion regulation.

We hypothesized that attachment anxiety would correlate with the hyperactivating strategy of rumination and that attachment-related avoidance would correlate with the deactivating strategy of emotional suppression. Also, we anticipated that avoidant attachment and suppression would be associated with reduced emotional self-awareness, as indicated by negative correlations with attention to, and clarity of, emotional states. On the other hand, anxious attachment and rumination were expected to be related to affect dysregulation, as indicated by greater frequency and intensity of negative emotions. We predicted that after taking key variables into account simultaneously using structural equation modelling, pathways from attachment insecurity to lower levels of mood repair and ego-resiliency would be mediated by suppression and lack of emotional clarity in the case of avoidant attachment, and rumination and increased negative affect in the case of anxious attachment. While gender doesn’t significantly influence adult attachment orientations directly (Shaver & Hazan, 1993), as cited above, it may affect emotion regulation patterns, with women, compared to men, being more likely to rely on rumination and less likely to resort to emotional suppression. Therefore, in a final step, we conducted analyses to determine whether the mediating pathways dealing with emotion regulation were moderated by gender.

Material and Methods

Participants and Procedures

A total of 388 participants, 199 students (51% of the sample) and 189 associates of theirs who agreed to participate (49% of the sample), completed packets of

questionnaires in exchange for credit in a university course about emotions. Of the 388 participants, 271 (70%) were female, 113 (29%) were male, and 4 (1%) did not disclose their gender. The participants' ages ranged from 17 to 54, with a mean of 22.07 ($SD = 4.48$). The sample's ethnic make-up was representative of the student body at the university and included 171 (44%) White/Caucasian, 158 (41%) Asians or Asian Americans, 43 (11%) Hispanic or Latino/a individuals, 4 (1%) Native Hawaiians or Other Pacific Islanders, 1 (<1%) American Indian, 2 (< 1%) Black/African Americans, 2 (< 1%) Other, and 7 (2%) undeclared.

Measures

The Experiences in Close Relationships Inventory (ECR). The ECR (Brennan, Clark, & Shaver, 1998) is a 36-item measure that assesses attachment anxiety (with 18 items, such as "I worry about being abandoned") and avoidance (with 18 items, such as "I prefer not to show a partner how I feel deep down"). Items were rated on a 7-point Likert scale ranging from 1 (disagree strongly) to 7 (agree strongly). The anxiety and avoidance subscales were internally consistent in the present sample (Cronbach's alpha was .91 for anxiety and .90 for avoidance).

The Emotion Regulation Questionnaire (ERQ). The ERQ (Gross & John, 2003) contains 10 items; 4 measuring Suppression (e.g., "I control my emotions by not expressing them") and 6 measuring Reappraisal (not used in the current analysis). Each item was rated on a 7-point Likert scale ranging from 1 (disagree strongly) to 7 (agree strongly). Similar to the original studies conducted by the scale's authors (Gross & John, 2003), the Suppression subscale in this study had an alpha coefficient of .73.

The Positive Affect and Negative Affect Scale (PANAS). The PANAS-X (Watson & Clark, 1994) is a 60-item checklist of positive and negative emotions designed to represent the affective lexicon in English. Each emotion was rated on a scale ranging from 1 (slightly or not at all) to 5 (very much) based on the degree to which it had been experienced "in the last few weeks." For purposes of this study, scores were computed for "basic positive emotions" (e.g., happy, cheerful, confident, alert) and "basic negative emotions" (e.g., scared, angry, ashamed, sad, lonely). The alpha coefficients were .93 for the Positive Affect subscale and .92 for the Negative Affect subscale.

The Rumination-Reflection Questionnaire (RRQ). The RRQ (Trapnell & Campbell, 1999) is a 24-item measure containing two 12-item subscales; Rumination and Self-Reflection (the latter not used in the current analysis). Items were rated on a 7-point Likert scale ranging from 1 (disagree strongly) to 7 (agree strongly). The Rumination subscale assesses a participant's tendency to engage in negative cycles of self-rumination (e.g., "I spend a great deal of time thinking back over my embarrassing or disappointing moments"). The Rumination subscale had an alpha coefficient of .92 in this study.

The Trait Meta-Mood Scale (TMMS). The TMMS (Salovey et al., 1995) is a 30-item measure of three aspects of "emotional intelligence": attention to emotions (with 13 items such as "I don't pay much attention to my feelings," reverse-scored); clarity of emotions (with 11 items such as "I almost always know exactly how I am feeling"); and mood repair (with 6 items, such as "No matter how bad I feel, I try to think about pleasant things"). Each item was rated on a 7-point Likert scale ranging from 1 (disagree strongly)

to 7 (agree strongly). The alpha coefficients for the three subscales were as follows: Emotion Attention, .85; Emotion Clarity, .86; and Mood Repair, .77.

The Ego Resiliency Scale (ER). The ER Scale (Block & Block, 1980) is a 14-item measure of psychological resilience, the capacity to modify responses flexibly in response to changing situational demands, especially under emotionally challenging conditions. Some of the items are reasonably straightforward (e.g., “I quickly get over and recover from being startled”), while others are more subtle (e.g., “I like to take different paths to familiar places”). Items were rated on a 7-point Likert scale ranging from 1 (disagree strongly) to 7 (agree strongly). For this sample, the alpha coefficient was .79.

Results

Preliminary Analyses

The means, standard deviations, and two-tailed Pearson correlations among the study's main variables are presented in Table 1.

Table 1
Means, Standard Deviations, and Correlations Among Study Variables

Measure	1	2	3	4	5	6	7	8	9	10
1. Attachment Anxiety	-	.14**	.60**	.04	.49**	-.17**	.07	-.34**	-.31**	-.24**
2. Avoidance		-	.19**	.62**	.23**	-.21**	-.41**	-.44**	-.31**	-.29**
3. Rumination			-	.14**	.46**	-.23**	.11*	-.31**	-.30**	-.22**
4. Suppression				-	.21**	-.19**	-.41**	-.34**	-.28**	-.21**
5. Negative Affect					-	-.28**	-.02	-.32**	-.48**	-.25**
6. Positive Affect						-	.15**	.32**	.39**	.45**
7. Emotion Attention							-	.29**	.32**	.30**
8. Emotion Clarity								-	.35**	.35**
9. Mood Repair									-	.49**
10. Ego-Resiliency										-
<i>M</i>	3.69	3.10	4.50	3.41	1.89	3.05	5.16	4.67	4.88	5.02
<i>SD</i>	1.10	0.97	1.24	1.18	0.67	0.72	0.85	0.97	1.09	0.75

Note. * $p < .05$ ** $p < .01$

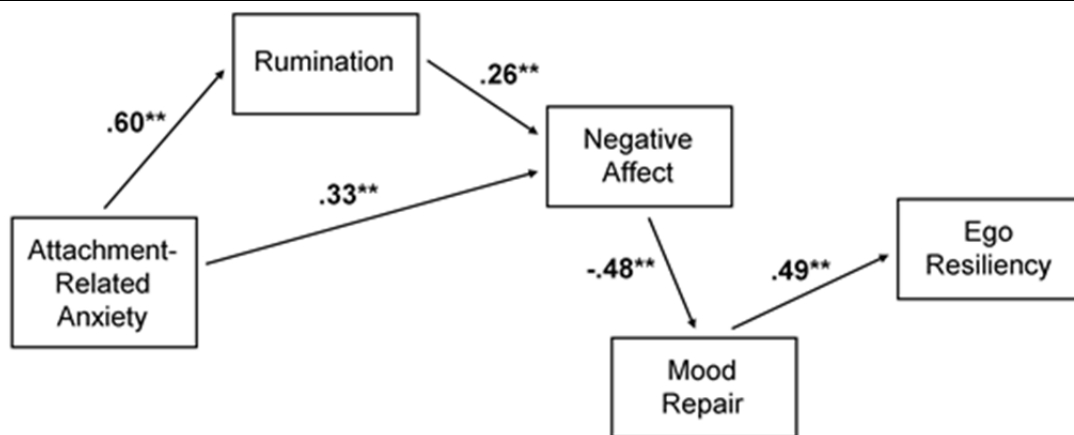
As predicted, unique patterns of attachment-related emotional dynamics emerged, with attachment anxiety correlating robustly with rumination, but showing no significant relation to suppression. The opposite was true for attachment-related avoidance, which was strongly correlated with suppression, moderately and negatively correlated with attention to emotion, and only weakly associated with rumination. Attachment-related anxiety and avoidance, along with their associated emotional dynamics (rumination/negative affect and emotional suppression/unclarity, respectively) were all correlated with mood repair and ego-resiliency in the expected directions.

Structural Equation Modeling

Utilizing Mplus statistical software (Muthen & Muthen, 2007), structural equation modeling with observed variables was used to assess the magnitude of direct and indirect

pathways. Separate structural equation models for attachment anxiety and avoidance were constructed based on the conceptual and empirical findings reviewed above. Figure 1 shows the final model for attachment anxiety with its corresponding observed variables and standardized path coefficients. The model exhibited a good fit with the data (Hu & Bentler, 1999), as indicated by the following indices: $\chi^2(5) = 10.20$, $p = .07$, CFI = .99, NFI = .98, TLI = .98, RMSEA = .052, and 90% CI for RMSEA = .000 to .097, and the model as a whole accounted for 24% of the variance in ego-resiliency. Figure 2 shows that the avoidance model fit the data well too; $\chi^2(3) = 6.83$, $p = .08$, CFI = .99, NFI = .99, TLI = .97, RMSEA = .057, and 90% CI for RMSEA = .000 to .116, and the model explained 28% of the variance in ego-resiliency.

Figure 1
Attachment-Related Anxiety Model



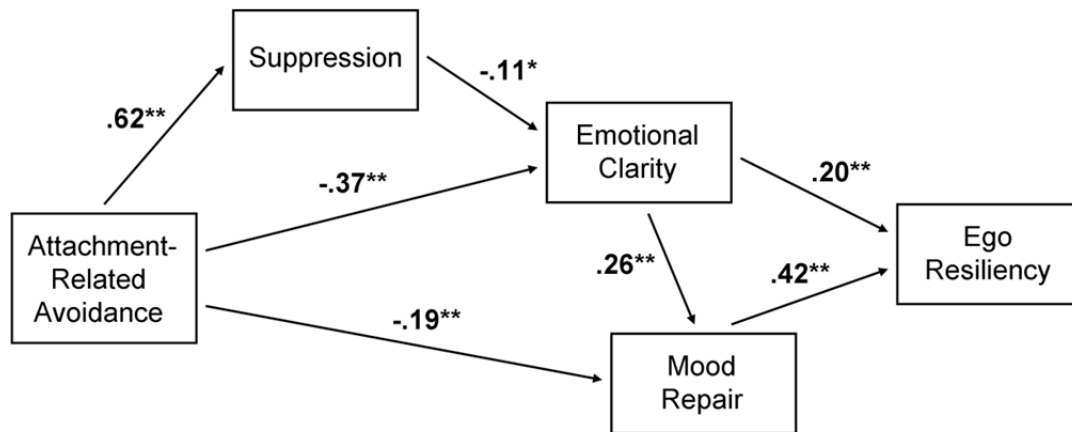
Note. Results of structural equation modeling with observed variables showing standardized path estimates from attachment-related anxiety to ego-resiliency. * $p < .05$ ** $p < .01$

Indirect Effects

The parameters of the models were estimated with maximum likelihood estimation and with bootstrapping, calculated with Mplus statistical software (Muthen & Muthen, 2007). A total of 2,000 bootstrap samples were generated for each model, yielding unstandardized estimates of specific and total indirect effects with bootstrapped *SE* and bias-corrected 95% confidence intervals. If the confidence interval excludes zero, the indirect effect is considered statistically significant at the .05 level (Shrout & Bolger, 2002).

In terms of the attachment anxiety model (Table 2a), all mediating pathways between attachment anxiety and the model's endogenous variables (i.e., negative affect, mood repair, and ego-resiliency) were significant. Likewise, the sum of all indirect effects from anxious attachment to ego-resiliency was significant. In the case of the model for avoidance (Table 2b), although the sum of all indirect effects between avoidance and ego-resiliency was significant, specific mediating pathways involving suppression were not significant.

Figure 2
Attachment-Related Avoidance Model



Note. Results of structural equation modeling with observed variables showing standardized path estimates from attachment-related avoidance to ego-resiliency. * $p < .05$. ** $p < .01$.

Table 2a
Model for Attachment Anxiety: Bootstrap Analysis Testing
Magnitude and Statistical Significance of Indirect Effects

Specific Indirect Pathways			Indirect Effect	Standard Error	Bias-Corrected 95% CI	
Anxiety →	Rumination →	Negative Affect	.096*	.021	.043	to .149
Anxiety →	Negative Affect →	Mood Repair	-.160*	.027	-.229	to -.090
Anxiety →	Rumination →	Negative Affect → Mood Repair	-.075*	.019	-.123	to -.027
Anxiety →	Negative Affect →	Mood Repair → Ego-Resiliency	-.054*	.011	-.082	to -.026
Anxiety →	Rumination →	Negative Affect → Mood Repair → Ego-Resiliency	-.025*	.007	-.043	to -.008
Sum of All Indirect Effects for Anxiety → Ego-Resiliency			-.079*	.013	-.112	to -.046

Note. Values are based on unstandardized estimates. CI = Confidence Interval. *Significant indirect effect (i.e., confidence interval does not include zero).

Table 2b
Model for Attachment-Related Avoidance: Bootstrap Analysis Testing
Magnitude and Statistical Significance of Indirect Effects

Specific Indirect Pathways			Indirect Effect	Standard Error	Bias-Corrected 95% CI	
Avoidance →	Suppression →	Emotion Clarity	-.069	.041	-.174	to .036
Avoidance →	Emotion Clarity →	Mood Repair	-.107*	.033	-.191	to -.023
Avoidance →	Suppression →	Emotion Clarity → Mood Repair	-.020	.013	-.054	to .014
Avoidance →	Emotion Clarity →	Ego-Resiliency	-.056*	.018	-.102	to -.010
Avoidance →	Mood Repair →	Ego-Resiliency	-.063*	.022	-.118	to .007
Avoidance →	Emotion Clarity →	Mood Repair → Ego-Resiliency	-.031*	.010	-.057	to -.005
Avoidance →	Suppression →	Emotion Clarity → Ego-Resiliency	-.011	.007	-.029	to .008
Avoidance →	Suppression →	Emotion Clarity → Mood Repair → Ego-Resiliency	-.006	.004	-.016	to .004
Sum of All Indirect Effects for Avoidance → Ego-Resiliency			-.166*	.025	-.232	to -.100

Note. Values are based on unstandardized estimates. CI = Confidence Interval. *Significant indirect effect (i.e., confidence interval does not include zero).

Analyses were conducted to assess the possible moderating influence of gender on the indirect pathways in both models (i.e., a moderated mediation model; Preacher, Rucker, & Hayes, 2007). A two-group comparison using structural equation modeling with

bootstrapping showed that the sums of all indirect effects between attachment anxiety and ego-resiliency were significant for both women ($B = -.078$, $SE = .013$, $CI95 = -.112$ to $-.044$) and men ($B = -.090$, $SE = .033$, $CI95 = -.176$ to $-.004$). However, analysis of specific indirect pathways in the anxiety model showed that all of the mediating pathways involving rumination were moderated by gender. As an example, the indirect effect of attachment anxiety on negative affect through rumination was significant for women ($B = .112$, $SE = .028$, $CI95 = .039$ to $.185$), but not for men ($B = .062$, $SE = .031$, $CI95 = -.017$ to $.141$).

Likewise, the parallel analyses for the avoidance model indicated that the sums of all indirect effects between avoidance and ego-resiliency were significant for both women ($B = -.164$, $SE = .031$, $CI95 = -.245$ to $-.084$) and men ($B = -.154$, $SE = .051$, $CI95 = -.287$ to $-.022$). However, examination of specific indirect pathways in the avoidance model revealed that all mediating pathways involving suppression were moderated by gender. For example, the indirect effect of attachment-related avoidance on emotion clarity through suppression was significant for women ($B = -.124$, $SE = .047$, $CI95 = -.246$ to $-.001$), but not for men ($B = -.006$, $SE = .070$, $CI95 = -.186$ to $.173$).

Discussion

A large body of research has shown that adult attachment security is associated with a variety of positive outcomes. The present study corroborates and extends these general findings by identifying attachment-related cognitive and emotional factors that contribute to resiliency. As predicted, the two dimensions of adult attachment insecurity were related to distinct patterns of emotional expression and regulation. For example, the tendency to ruminate was strongly correlated with attachment anxiety, but was only weakly correlated with avoidance. Rumination may facilitate activation of the attachment system by amplifying vigilance to threat, intensifying cycles of distress, and accentuating a sense of helplessness and vulnerability. These strategies are thought to develop as a way of inducing inconsistently available attachment figures to pay more attention and provide more reliable protection.

Consistent with this view, we found that attachment anxiety and rumination both contributed significantly to individuals' experience of negative emotions, such as sadness, loneliness, shame, and anger. These results are consistent with findings regarding the role of rumination in accentuating negative emotions and impeding adaptive emotion regulation (Lyubomirsky & Nolen-Hoeksema, 1995; Nolen-Hoeksema & Morrow, 1993). Additionally, evidence suggests that both attachment anxiety (Caldwell, Shaver, Li, & Minzenberg, 2011; Shaver, Schachner, & Mikulincer, 2005) and rumination (Nolen-Hoeksema et al., 1999) are related to clinical symptoms of depression. Therefore, while hypervigilance and negative emotional states, sustained in part by rumination, may be goal-congruent for the attachment-anxious individual, these dynamics may also indicate limitations in emotion regulation and may undermine one's ability to respond flexibly and adaptively to life's challenges.

In accordance with our hypotheses, attachment-related avoidance (but not attachment anxiety) was associated with reduced attention to emotions and more active suppression of emotions. These results are consistent with numerous studies showing that avoidant individuals often deny or suppress emotion-related thoughts and memories, divert

attention from emotion-related material, and inhibit verbal and non-verbal expressions of emotion (Mikulincer & Shaver, 2003). These general patterns of emotion regulation are thought to be a consequence of habitual deactivation of the attachment system as a means of avoiding or denying the emotional pain associated with unavailable or dismissive attachment figures.

Compared to attachment anxiety, avoidance was less strongly correlated with negative affect, but its inverse relation to emotional clarity was more robust than that of attachment anxiety. Indeed, structural equation modeling revealed that both avoidance and suppression of emotion significantly predicted the degree to which a participant felt unclear about the antecedents and nature of his or her own emotional experiences. Along these lines, attachment-related avoidance has been associated with decreased attention to emotional events (Fraley et al., 2000), alexithymia or impairments in labelling emotions (Wearden, Cook, & Vaughan-Jones, 2003), and perceptual biases when decoding facial expressions (Magai, Distel, & Liker, 1995; Niedenthal, Brauer, Robin, & Innes-Ker, 2002). Thus, for the avoidant individual, suppression of emotion may be an effective defensive strategy within the context of an insecure relationship, but when generalized it may cause diminished awareness and understanding of the causes and consequences of emotions.

Mood repair is considered a key component of emotional intelligence (Salovey & Mayer, 1990) and involves regulating moods by actively and optimistically reappraising or changing the emotional impact of a situation (Salovey et al., 1995). In the present study, adult attachment insecurity predicted lower levels of mood repair, but did so through distinct pathways; attachment anxiety's effect ran through rumination and negative affect, whereas the effects of avoidance involved emotional suppression and reduced clarity about emotions. Therefore, it follows that secure individuals may be more effective at regulating emotions because they can openly and clearly address emotional material, without becoming overwhelmed by perseverative cycles of negative affect.

The models tested here, predicting ego-resiliency from both attachment anxiety and avoidance through distinct cognitive-emotional pathways, fit our data well. Moreover, mediational analysis revealed that the sums of the intervening pathways in both models significantly accounted for the relation between attachment insecurity and lower levels of ego-resiliency. However, a more detailed analysis indicated that, although all of the indirect pathways in the attachment anxiety model were significant, in the avoidance model, mediating pathways involving suppression were not significant (other indirect pathways and the sum of all indirect effects were significant). This result was clarified by a moderated mediation analysis, which showed that indirect pathways involving suppression and rumination were significant for women but not for men. These findings are consistent with other research concerning the moderating influence of gender on suppression (Gross & John, 2003) and rumination (Nolen-Hoeksema et al., 1999), and they show how these variables might be especially salient mediators of diminished resiliency for insecure women.

We have argued elsewhere (e.g., Shaver & Mikulincer, 2002) that attachment security is associated with "broaden-and-build" cycles (Fredrickson, 1998, 2001), in which secure attachment experiences increase the capacity for a curious, optimistic, and positive approach to adversity, which in turn fosters resiliency by broadening one's cognitive-

emotional and behavioral repertoires (Shaver & Mikulincer, 2007). Along these lines, we found here that positive affect was inversely related to attachment anxiety and avoidance, but strongly and positively related to ego-resiliency. The present findings also suggest that the link between attachment security and positive emotion may be strengthened by lower levels of suppression and rumination, and greater emotional clarity and regulation. In this way, attachment security may facilitate adaptive, reciprocal interactions between positive emotions and broadened cognitive abilities, leading to appreciable increases in psychological resiliency and contributing to the natural processes of growth and self-actualization.

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