

# Attachment Anxiety Uniquely Predicts Regret Proneness in Close Relationship Contexts

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## Abstract

Although regret plays a central role in decision making, few studies have explored the nature of regret in close relationships. The authors hypothesized that anxiously attached individuals, who are hypersensitive to relationship threat and prone to ambivalence in close relationships, would be particularly likely to experience regret over relationship-related decisions. Study 1 examined the relative abilities of attachment anxiety and neuroticism to predict regret proneness. Entered as simultaneous predictors, neuroticism was the only significant predictor of general regret proneness, but attachment anxiety was the only significant predictor of interpersonal regret proneness. In Study 2, participants were randomly assigned to read regrettable relational versus nonrelational scenarios. Once again, neuroticism predicted regret in the nonrelational conditions, whereas attachment anxiety predicted regret in the relational conditions. Not only may these findings help explain anxiously attached individuals' uncertain relational decision-making patterns, but they also highlight an important distinction between attachment anxiety and neuroticism.

## Keywords

attachment anxiety, regret, close relationships

Regret is an unpleasant, counterfactual, self-focused emotion that results from having made an unfavorable choice. It involves both lamenting over the outcome that could have been, and blaming the self for failing to make a better decision (Connolly & Zeelenberg, 2002). Regret over past decisions plays an important role in future decision making (Zeelenberg & Pieters, 2007). Thus, individual variability in the tendency to experience regret has important implications for variability in decision-making tendencies. However, research on regret has primarily examined nonsocial decisions, such as consumer choices. Less is known about the experience of regret over more social decisions, and even less is known about decisions made in the context of close relationships. In the present research, we will present evidence suggesting that social and nonsocial regrets can be differentially predicted by individual differences. We will show that whereas the personality trait of neuroticism predicts a general proneness to regret across domains, attachment anxiety predicts regret proneness in the interpersonal domain specifically.

## Regret and Decision Making

Regret is beneficial for decision making under many circumstances. In a recent review, Epstude and Roese (2008) delineated ways in which the sting of regret over a poor choice can motivate better choices in the future. However, there is also evidence suggesting that chronic or excessive regret can be

problematic. For example, the chronic tendency to experience regret after making decisions is consistently correlated with lower subjective happiness and more depression (Schwartz et al., 2002). There is also evidence suggesting that excessive anticipated regret can interfere with learning and decision-making processes (Reb & Connolly, 2009). Furthermore, van Herreveld, van der Pligt, and de Liver (2009) argue that regret plays an important role in the experience of ambivalence: One of the reasons why one might feel ambivalent about a decision is because of the possibility of regretting one's decision. Indeed, regret proneness is associated with indecisiveness (Spunt, Rassin, & Epstein, 2009).

Although regret in noninterpersonal contexts has received much empirical attention, little is understood about the role of regret in close relationships. In particular, most of the extant research on regret in social contexts has looked at regret between strangers or acquaintances (e.g., Van Kleef, De Dreu, & Manstead, 2006); there is little research on regret over decisions involving close others. The existing literature suggests that relationship decisions are particularly potent sources of

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regret. For example, in a recent, representative American survey, Morrison & Roese (2011) found love relationships (romance and family) to be the most common source of life regrets. Because regret has important implications for decision-making processes, a better understanding of regret in this domain may help us to understand how people make important choices about their close relationships. Thus, given that relationships are such a crucial contributor to health and well-being (Hawley & Cacioppo, 2010), an understanding of predictors of relational regret appears needed. In particular, we hypothesized that individual differences associated with poor regulation of relational affect such as anxious attachment would be useful for understanding the dynamics of interpersonal regret.

### *Attachment Anxiety and Regret*

Attachment security and insecurity arises from an adaptive, biologically based system that first evolved to promote bonding between infants and caregivers (Bowlby, 1982). In adulthood, this system regulates relational behavior, such as that directed at close friends and romantic partners (Hazan & Shaver, 1987). As in infancy, the attachment system motivates adults to seek proximity with close others, particularly in times of distress. Much of adult attachment research (see Mikulincer & Shaver, 2007 for review) has focused on individual differences in how people regulate their attachment systems to form close emotional bonds, differences that are reflected in two attachment dimensions: attachment anxiety and attachment avoidance.

Individuals high in attachment anxiety (colloquially described as “clingy” or “needy”) chronically doubt their own self-worth as well as the availability of close others (Collins & Read, 1990; Feeney & Noller, 1990). As a result of their chronic distress, anxiously attached individuals experience attachment system hyperactivation (e.g., Mikulincer, Gillath, & Shaver, 2002) leading to excessive demands for reassurance from close others (Shaver, Schachner, & Mikulincer, 2005) and anxious vigilance for signs of disapproval or rejection (e.g., Fraley, Niedenthal, Marks, Brumbaugh, & Vicary, 2006). Individuals high in attachment avoidance are uncomfortable with closeness and intimacy, and prefer not to rely on others (e.g., Collins & Feeney, 2000).

A number of lines of research suggest that attachment anxiety should be related to higher levels of regret over relationship-related decisions. First, anxiously attached individuals have been shown to experience higher levels of a variety of negative emotions, especially within interpersonal contexts (Mikulincer & Shaver, 2005, 2007). Second, a key element of regret is personal responsibility or blaming oneself for making a mistake (Connolly & Zeelenberg, 2002). Anxiously attached individuals have characteristically negative views of the self and tend to focus on their own perceived inadequacies (e.g., Mikulincer, 1998). Thus, they may be particularly prone to blaming the self for negative outcomes, leading to increased feelings of regret over their choices.

Finally, the experience of regret is associated with ambivalence or a hesitancy to commit to new choices (Spunt et al., 2009; van Herreveld et al., 2009). There is growing evidence that anxiously attached individuals are prone to experiencing ambivalence over their relationship decisions. For example, anxiously attached individuals have conflicting approach and avoidance motives regarding their romantic partners (Mikulincer, Shaver, Bar-On, & Ein-Dor, 2010). Similarly, anxiously attached individuals appear to be ambivalent about whether to commit to their romantic partners (Joel, MacDonald, & Shimotomai, 2011). Furthermore, there is evidence to suggest that anxiously attached individuals are particularly prone to on-again/off-again relationships, repeatedly breaking up and renewing their relationship with the same romantic partner (Kirkpatrick & Hazan, 1994). A tendency to experience regret over relationship decisions would help illuminate these confusing relationship patterns. Specifically, anxiously attached individuals' tendency to oscillate between relationship options may be motivated, in part, by a concern that any decision is likely to cause regret. Because regret may stem both from the pain that relationships can bring *and* from missed romantic opportunities, virtually any relationship decision may leave anxious individuals choosing between two potentially regretful options.

### *Attachment Anxiety Versus Neuroticism*

Attachment anxiety shares important associations with other, more general personality traits. In particular, attachment anxiety has been found to correlate moderately but consistently with the Big Five personality trait of neuroticism across study designs, populations, and instruments (see Nofle & Shaver, 2006 for review). This correlation likely emerges because both traits are associated with a tendency to experience negativity. Indeed, the central, defining feature of neuroticism is a tendency to experience negative affect (Costa & McCrae, 1980, 1987). Furthermore, recent research has found that neuroticism is associated with the negative experience of regret proneness specifically (Purvis, Howell, & Iyer, 2011). It is thus important to distinguish between the effects of neuroticism and attachment anxiety in the present research. In particular, we were interested in identifying a unique association between attachment anxiety and regret, above and beyond any general tendency to worry.

We hypothesized that neuroticism and attachment anxiety would be meaningfully distinguishable in terms of their levels of domain specificity. Critically, neuroticism represents a proneness to negative affect *across domains*. For example, in a recent review, Ozer and Benet-Martinez (2006) delineated the implications of neuroticism for life domains as disparate as health, life satisfaction, career success, and criminality. In contrast, attachment style is specifically interpersonal in nature (Mikulincer & Shaver, 2007). Although neuroticism is a robust predictor of romantic relationship outcomes (e.g., Karney & Bradbury, 1995), Shaver and Brennan (1992) and Nofle and Shaver (2006) found that individual differences in attachment style outperform neuroticism, as well as the other Big Five traits, in predicting relationship outcomes. Furthermore, in a

**Table 1.** Study 1 Correlations

	Neuroticism	Attachment Anxiety	Attachment Avoidance	General Regret Proneness
Attachment anxiety	.30*			
Attachment avoidance	.16	.51*		
General regret proneness	.45*	.19	.17	
Interpersonal regret proneness	.30*	.61*	.34*	.25*

\* $p < .05$ .

recent study on genetics and personality, it was found that much of the overlap between neuroticism and attachment was explained by genetics, whereas the unique variance in attachment anxiety was associated with environmental influences (Donnellan, Burt, Levendosky, & Klump, 2008). For these reasons, the strongest test of attachment theory predictions regarding attachment anxiety involves controlling for individual differences in neuroticism. Overall, we expected neuroticism to uniquely predict regret over nonsocial choices, but we expected regret over social or interpersonal choices to be uniquely predicted by attachment anxiety.

### The Present Research

We tested our hypotheses with two complementary studies. In Study 1, participants rated their tendency to experience regret in general (trait regret proneness; Schwartz et al., 2002), as well as their tendency to experience regret over interpersonal choices. We expected neuroticism to uniquely predict general regret proneness, whereas we expected attachment anxiety to uniquely predict interpersonal regret proneness. In Study 2, we presented participants with hypothetical scenarios, in which we manipulated the domain of the event (interpersonal vs. non-interpersonal) and the outcome of the event (positive vs. negative). We hypothesized that neuroticism would uniquely predict participants' level of regret over the negative noninterpersonal scenarios. In contrast, we hypothesized that attachment anxiety would uniquely predict regret over the negative interpersonal scenarios.

## Study 1

### Method

#### Participants and Procedure

Participants were recruited online with advertisements on sites such as craigslist.org and kijiji.ca. The initial sample consisted of 108 participants (78 women, 30 men) who completed the questionnaire on surveymonkey.com in exchange for entry into a draw for a \$50 gift card to Amazon.com. Five participants

were excluded from analyses because they admitted to answering the survey carelessly, and one participant was excluded for not being at least 18 years of age. The final sample consisted of 102 participants (76 women) recruited online, with an average age of 29.46 (range = 18–63). Measures were counterbalanced.<sup>1</sup>

### Materials

**Neuroticism.** Trait neuroticism was measured as part of the Big Five Inventory (John, Donahue, & Kentle, 1991).<sup>2</sup> Participants were presented with the sentence stem “I am someone who . . .” followed by eight phrases (e.g., “can be moody”), Cronbach's  $\alpha = .81$ . Participants indicated the extent to which they agreed with the description of themselves on a 5-point scale (1 = *Disagree strongly* to 5 = *Agree strongly*).

**Experiences in close relationships—revised (ECR-R).** The ECR-R (Fraley, Waller, & Brennan, 2000) includes an 18-item measure of attachment anxiety (e.g., “I worry that romantic partners won't care about me as much as I care about them”), Cronbach's  $\alpha = .94$ , and an 18-item measure of attachment avoidance (e.g., “I am nervous when partners get too close to me”), Cronbach's  $\alpha = .94$ . Responses were given on a 7-point scale (1 = *Completely disagree* to 7 = *Completely agree*).

**Regret scales.** General regret proneness was measured with a 5-item scale (Schwartz et al., 2002) with items such as, “Once I make a decision, I don't look back” (Cronbach's  $\alpha = .78$ ). Responses were given on a 7-point scale (1 = *Completely disagree* to 7 = *Completely agree*). To capture interpersonal regret proneness, we adapted this scale to be about close relationships (e.g., “Once I make a decision about a relationship, I don't look back;” Cronbach's  $\alpha = .83$ ). See Supplemental Appendix found online at <http://spp.sagepub.com/supplemental>.

## Results and Discussion

Correlations can be seen in Table 1. Attachment anxiety was significantly correlated with neuroticism ( $r = .29, p = .006$ ) as well as with attachment avoidance ( $r = .51, p < .001$ ). Therefore, we conducted multiple regression analyses to examine the unique associations of attachment anxiety, attachment avoidance, and neuroticism with regret. For general regret proneness, neuroticism was a significant predictor,  $\beta = .42, p < .001$ , whereas attachment anxiety was not,  $\beta = .001, ns$ , nor was avoidance,  $\beta = .10, ns$ . For interpersonal regret proneness, attachment anxiety was a significant predictor,  $\beta = .54, p < .001$ , whereas neuroticism was not,  $\beta = .13, p = .15$ , nor was avoidance,  $\beta = .07, ns$ .

These results suggest that anxiously attached individuals are prone to regret specifically in interpersonal contexts. Although attachment anxiety was unrelated to a tendency to regret decisions in general, it was strongly associated with regret over relationship choices even controlling for both neuroticism and attachment avoidance. In other words, the association between attachment anxiety and interpersonal regret proneness cannot

be attributed to more general tendencies, such as an overall predisposition toward negative affect, or the possession of an insecure attachment style more generally. Rather, it appears to be anxiety over relationships specifically that predicts the tendency to regret interpersonal decisions.

## Study 2

Whereas Study 1 involved self-reports of regret proneness in response to general, abstract statements, Study 2 experimentally manipulated regret using specific, regret-eliciting scenarios. We hypothesized that whereas neuroticism would uniquely predict regret over negative noninterpersonal scenarios, attachment anxiety would uniquely predict regret over negative interpersonal scenarios. Furthermore, to test the generalizability of our effects, we examined whether these effects would occur for two types of decisions—active versus inaction—which have been empirically linked with different degrees of short-term regret (Gilovich, Medvec, & Chen, 1995; Leach & Plaks, 2009).

### Participants, Procedure, and Materials

Participants were 287 introductory psychology students (196 women, 91 men) who participated in exchange for course credit. Of these participants, 43 were discarded because they answered the manipulation check question incorrectly.<sup>3</sup> The final sample consisted of 244 students (166 women, 78 men), with an average age of 19 (range = 17–37 years). Participants filled out the same individual difference measures used in Study 1. Participants were then randomly assigned to one of eight conditions, all of which involved reading a decision-making scenario.

Attachment anxiety, neuroticism, and attachment avoidance<sup>4</sup> were first measured using the same scales as were used in Study 1 (Cronbach's  $\alpha = .91, .82, \text{ and } .91$ , respectively).

To elicit the experience of regret over an interpersonal decision, participants read a scenario about trying to make plans for a romantic partner's birthday. In the scenario, participants read that they were trying to decide whether or not to throw a surprise party for their partner. Participants read that they either chose to throw the party, thinking that their partner would appreciate the effort (action condition), or they chose not to throw the party, thinking that their partner would not want the attention (inaction condition). Next, participants read that their partner was either happy with the choice (positive outcome condition) or upset about the choice (negative outcome condition).

Participants in the noninterpersonal conditions read that they were contestants on a game show and that they were being asked to choose between two briefcases: one containing \$300,000 and the other containing \$5 (Leach & Plaks, 2009). Participants either chose to switch their current briefcase for the other one (action condition) or they chose to keep their current briefcase (inaction condition). Then, they read that the briefcase they chose contained \$300,000 (positive outcome condition) or \$5 (negative outcome condition). The interpersonal and noninterpersonal scenarios possessed the same overall outcome structure: an action or inaction could produce positive

or negative results. Altogether, the study was a 2 (context: interpersonal vs. noninterpersonal)  $\times$  2 (decision: action vs. inaction)  $\times$  2 (outcome: positive vs. negative) between-participants design.

Regret over the decision made in the scenario was measured with 2 items: "How much did you regret your choice to/not to \_\_\_\_\_?" and "How much would you feel that you should have/shouldn't have \_\_\_\_\_?" Cronbach's  $\alpha = .76$ . These items were tailored to each condition. For example, participants in the interpersonal/inaction conditions read, "How much did you regret your choice not to throw the surprise party?" and "How much did you feel that you should have thrown the surprise party?"

Finally, a manipulation check was included to ensure that participants clearly understood the dilemma and the outcome. Participants in the interpersonal conditions were asked whether or not their partner was satisfied with the birthday plans, whereas participants in the noninterpersonal conditions were asked how much money was in their chosen briefcase.

## Results

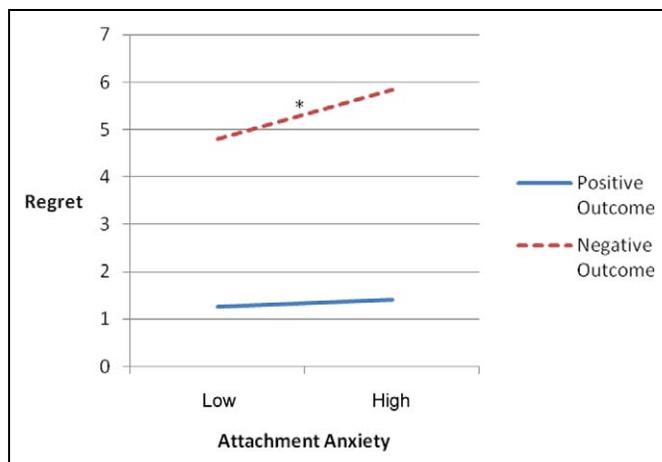
Because regret is typically elicited only by suboptimal outcomes, we hypothesized that any relevant individual differences would predict regret only in the scenarios that ended negatively. More relevant to our research question, we expected attachment anxiety and neuroticism to have separable, independent effects depending on the context of the regretful event. Specifically, we expected attachment anxiety to predict regret in the negative, interpersonal scenarios, and neuroticism to predict regret in the negative, noninterpersonal scenarios. To examine this set of hypotheses, we used hierarchical linear regression (Aiken & West, 1991) to test for two simultaneous three-variable interactions: one between anxiety, context, and outcome and another between neuroticism, context, and outcome.

Attachment anxiety and neuroticism were mean centered, and the manipulations were coded as indicator variables. In Step 1 of the regression equation, we entered decision (*inaction* = 0, *action* = 1),<sup>5</sup> context (*noninterpersonal* = 0, *interpersonal* = 1), and outcome (*negative* = 0, *positive* = 1) to examine the main effects of the manipulations. In Step 2, we entered attachment anxiety and neuroticism to examine the main effects of individual differences. All relevant two- and three-variable interactions were entered in Steps 3 and 4, respectively. Regret was entered as the dependent variable. The results of this analysis can be seen in Table 2.

Eight participants were excluded because their regret scores were more than three standard deviations from the mean. In Step 1, there was a main effect for decision, such that actions were regretted more than inactions,  $\beta = .06, p = .02$ . There was also a main effect for context, such that the game show context elicited more regret than the romantic partner context,  $\beta = -.11, p < .001$ . Finally, there was a main effect for outcome,  $\beta = -.90, p < .001$ , such that the scenarios with negative outcomes elicited more regret than the scenarios with positive outcomes. Step 2 revealed a marginal main effect of attachment

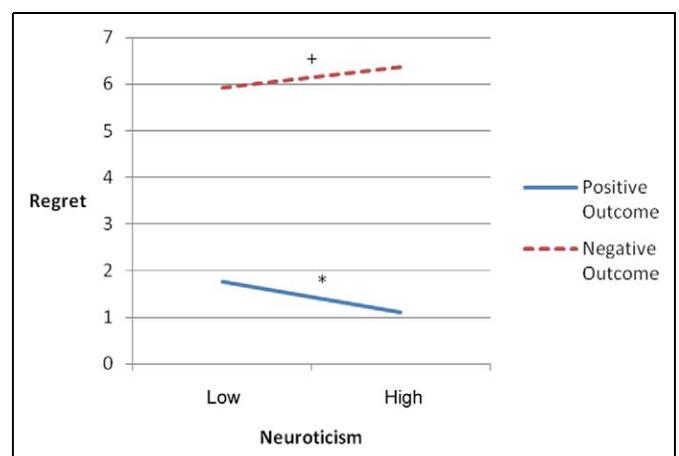
**Table 2.** Study 2 Regression Analysis

Step	Predictor	B	SE	$\beta$	p	$\Delta R^2$	F change	F Change p
Step 1	Decision	0.303	.128	0.062	.019	0.84	400.424	<.001
	Context	-0.509	.19	-0.105	<.001			
	Outcome	-4.366	.129	-0.899	<.001			
Step 2	Attachment anxiety	0.12	.072	0.049	.097	0.003	2.19	.114
	Neuroticism	0.026	.072	0.011	.716			
Step 3	Anxiety $\times$ Context	0.244	.147	0.074	.084	0.01	3.15	.009
	Anxiety $\times$ Outcome	-0.117	.146	-0.032	.426			
	Neuroticism $\times$ Context	0.037	.148	0.011	.803			
	Neuroticism $\times$ Outcome	-0.233	.148	-0.069	.117			
	Context $\times$ Outcome	0.693	.259	0.126	.008			
Step 4	Anxiety $\times$ Context $\times$ Outcome	-0.695	.29	-0.148	.017	0.004	3.41	.035
	Neuroticism $\times$ Context $\times$ Outcome	0.603	.293	0.14	.041			

**Figure 1.** Attachment anxiety predicting regret over the social scenarios.

anxiety,  $\beta = .05$ ,  $p = .10$ , and there was no significant main effect of neuroticism,  $\beta = .01$ ,  $ns$ .

All two-variable interactions found in Step 3 were qualified in Step 4. Specifically, Step 4 revealed the predicted significant three-variable interaction between attachment anxiety, context, and outcome,  $\beta = -.15$ ,  $p = .02$  (see Figure 1), as well as the predicted significant interaction between neuroticism, context, and outcome,  $\beta = .14$ ,  $p = .04$  (see Figure 2). We deconstructed these significant three-variable interactions via simple effects analyses. As predicted, attachment anxiety was significantly, positively related to regret in the interpersonal scenarios with a negative outcome,  $t(225) = 3.39$ ,  $p < .001$ . Attachment anxiety was not significantly related to regret in any of the other scenarios (all  $ps > .26$ ). In contrast, neuroticism was marginally, positively related to regret in the noninterpersonal scenarios with a negative outcome,  $t(225) = 1.66$ ,  $p = .10$ . Neuroticism was also significantly, negatively related to regret in the noninterpersonal scenarios with a positive outcome,  $t(225) = -2.04$ ,  $p = .04$ . Neuroticism did not predict regret in any of the interpersonal scenarios (all  $ps > .80$ ). The results of Study 2 support our hypotheses. Attachment anxiety uniquely predicted regret for participants who read about an

**Figure 2.** Neuroticism predicting regret over the nonsocial scenarios.

interpersonal event with a negative outcome. In contrast, neuroticism uniquely predicted regret for participants who read about a noninterpersonal scenario. Neuroticism was related not only to more regret from a noninterpersonal outcome, but unexpectedly, also to less regret from a noninterpersonal, positive outcome. It is possible that a tendency for highly neurotic individuals to anticipate regret more strongly led them to experience more relief when the negative outcome did not occur. However, measures of regret are difficult to interpret in positive contexts.

Notably, all of the effects in Study 2 were found above and beyond the type of decision (action vs. inaction) that led to the regretful outcome, and decision type did not moderate the effects. This speaks to the generalizability of regret proneness for individuals high on neuroticism and attachment anxiety: They experienced high levels of regret regardless of whether their mistakes were the result of an action or a failure to act.

## General Discussion

The results from this pair of studies support our hypotheses. In both studies, attachment anxiety was related to the experience of regret uniquely in the interpersonal domain. This is in

contrast with neuroticism which predicted a tendency to experience regret in nonspecified or noninterpersonal domains. In Study 1, neuroticism was a unique predictor of general regret proneness. Attachment anxiety, on the other hand, was a unique predictor of regret over close relationship choices. In Study 2, participants were presented with scenarios about interpersonal versus noninterpersonal decisions. Once again, whereas neuroticism uniquely predicted regret for noninterpersonal decisions that went awry, attachment anxiety uniquely predicted regret for interpersonal decisions that went awry.

Overall, it appears that anxiously attached individuals are particularly regretful about the interpersonal choices that they make. This association between attachment anxiety and regret appears to be specific to the interpersonal domain, reflecting anxiously attached individuals' localized concerns over gaining support and approval from close others. Neuroticism, on the other hand, predicted regret above and beyond attachment anxiety only in noninterpersonal contexts. Not only does this finding replicate recent research demonstrating an association between neuroticism and regret (Purvis et al., 2011) but it also reflects the broad, overarching nature of neuroticism, as compared to more specific relational concerns of anxious attachment.

### *Implications and Future Directions*

The finding that anxiously attached individuals are particularly likely to regret their relationship mistakes has important implications for the process by which anxiously attached individuals might make such decisions. For example, higher levels of trait regret proneness are associated with the tendency to engage in the less adaptive decision-making strategy of maximizing, or excessively comparing and contrasting one's options in an attempt to obtain the best possible outcome (Schwartz et al., 2002; Zeelenberg & Pieters, 2007). One implication of our current findings is that when faced with a decision that involves close relationships, anxiously attached individuals might excessively oscillate between possible options in search of a decision that will be *optimal* for the relationship in question, in an attempt to minimize further regret. This would be in keeping with anxiously attached individuals' general tendency to excessively process information (especially negative information) relating to their close relationships (e.g., Mikulincer, Dolev, & Shaver, 2004). Furthermore, these associations between attachment anxiety and regret would help explain why anxiously attached individuals have been found to experience greater levels of ambivalence over their romantic relationships (Joel et al., 2011; Mikulincer et al., 2010). Overall, the finding that attachment anxiety is related to higher levels of interpersonal regret proneness suggests that anxiously attached individuals should have greater difficulty in making relationship choices, and may ultimately make less effective choices, compared to more securely attached individuals. Given that there is virtually no research on the specific processes by which people make choices about their relationships in general, let alone how

such choices are moderated by individual differences, this suggests an interesting new avenue for future research.

One limitation to the present studies is that they do not illuminate the mechanisms behind anxiously attached individuals' heightened regret. Specifically, researchers such as Connolly and Zeelenberg (2002) have proposed that regret has two core components: upward counterfactual thinking, which involves comparing one's outcome with a more positive alternative, and self-blame, or a feeling of responsibility for the decision. Future research should examine whether anxiously attached individuals are prone to heightened levels of relational regret because they judge their relational outcomes more harshly, because they feel more responsible for those outcomes, or some combination of those factors.

Another limitation to the current research is that it does not distinguish between *postdecisional* regret (i.e., regret that follows a decision) and *anticipated* regret (i.e., expectations of regret before a decision). Indeed, the reason why postdecisional regret is so important for future decision making is because it motivates people to anticipate and avoid further regret (Zeelenberg & Pieters, 2007). Thus, for regret to have a notable influence on anxiously attached individuals' relationship decisions, anxiously attached individuals would have to be prone not only to the experience of postdecisional regret but also to anticipated regret as a consequence of new choices. The present research provides indirect evidence that, in relationship contexts, anxiously attached individuals may be prone to both. The structure of the items in Study 1 (e.g., "Once I make a choice about a close relationship, I don't look back") prompted participants to think back to instances of downward counterfactual thinking or postdecision regret. In Study 2, however, the dependent measure involves predictions of regret in response to a particular situation. The fact that an association between attachment anxiety and interpersonal regret replicated across both studies suggests that anxiously attached individuals are prone to both postdecisional and anticipated regret. However, future research should examine both forms of regret in more explicit terms, using more conventional decision-making methodologies. For example, one could directly investigate anxiously attached individuals' tendency to consider counterfactuals while they are attempting to make a relational decision.

### *Attachment Anxiety Versus Neuroticism*

Another noteworthy finding of this research was the clear difference between attachment anxiety and neuroticism in terms of their unique associations with regret proneness. Given the widespread acceptance of the five-factor model as a taxonomy of human personality, it is important to justify why additional personality constructs are not simply proxies for one or more of these five overarching factors. Indeed, given that attachment anxiety and neuroticism generally share a moderate to strong correlation (Nofle & Shaver, 2006), it could be called to question whether attachment anxiety is reducible to a general tendency to worry. Attachment theorists would respond to this proposition by highlighting the uniquely social quality of the

attachment system: Activation of the attachment system motivates proximity seeking to close others and is satisfied by responsive care from close others (Mikulincer & Shaver, 2007). Thus, attachment anxiety is defined as heightened emotional sensitivity specifically in the social domain, which is understood to stem from a chronic sense of uncertainty that close others are willing to provide care. The present research provides further evidence of attachment anxiety's unique predictive power in interpersonal contexts. In both of the present studies, we found that although neuroticism predicted regret over general, noninterpersonal decisions, attachment anxiety uniquely predicted regret over interpersonal decisions. This supports the position that attachment anxiety as a construct is not merely tapping into a general tendency to worry, but instead captures specific concerns over relationships with close others.

### Concluding Thoughts: Decision Making in the Close Relationship Domain

One final implication of the current work is that it provides support for relational decision making as a valuable, testable topic of research. The processes underlying social decisions are surprisingly underresearched compared to nonsocial choices, and research on decision-making processes about close relationships is virtually nonexistent. This seems to be a very peculiar gap in the literature, given that choices about close relationships are not only complex, but of great importance to people's lives. Future research should continue to make use of decision-making concepts and findings—traditionally applied to areas such as consumer choices—to better understand how people grapple with close relationship decisions.

### Notes

1. Questionnaire order did not interact with attachment anxiety or neuroticism to predict either type of regret proneness. Including order in the model did not affect the results.
2. The other Big Five traits were not predictive of either type of regret proneness above and beyond attachment anxiety and neuroticism. Including them in the model did not affect the results.
3. Including the excluded participants produced very similar results; hypothesized three-variable interactions remain significant.
4. Attachment avoidance did not predict regret in any of the conditions. Adding avoidance to the model did not change the pattern of results.
5. The complete, saturated model was also tested, which included two-, three-, four-, and five-variable interactions between “decision” and context, outcome, neuroticism, and attachment anxiety. Hypothesized three-variable interactions remained significant. None of the added terms were significant, all  $ps < .14$ . In particular, decision type (action vs. inaction) did not moderate the effects.

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### References

- Aiken, L., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Bowlby, J. (1982). *Attachment and loss: Vol. 1 Attachment*. (2nd ed.). New York, NY: Basic Books.
- Collins, N. L., & Feeney, B. C. (2000). A safe haven: An attachment theory perspective on support seeking and caregiving in intimate relationships. *Journal of Personality and Social Psychology, 78*, 1053-1070.
- Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology, 58*, 644-663.
- Connolly, T., & Zeelenberg, M. (2002). Regret in decision making. *Current Directions in Psychological Science, 11*, 212-216.
- Costa, P. T., & McCrae, R. P. (1980). Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy people. *Journal of Personality and Social Psychology, 38*, 668-678.
- Costa, P. T., & McCrae, R. P. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*, 81-90.
- Donnellan, M. B., Burt, S. A., Levendosky, A. A., & Klump, K. L. (2008). Genes, personality, and attachment in adults: A multivariate behavioral genetics analysis. *Personality and Social Psychology Bulletin, 34*, 3-16.
- Epstude, K., & Roese, N. J. (2008). The functional theory of counterfactual thinking. *Personality and Social Psychology Review, 12*, 168-192.
- Feeney, J. A., & Noller, P. (1990). Attachment style as a predictor of romantic relationships. *Journal of Personality and Social Psychology, 58*, 281-291.
- Fraley, R. C., Niedenthal, P. M., Marks, M., Brumbaugh, C., & Vicary, A. (2006). Adult attachment and the perception of emotional expressions: Probing the hyperactivating strategies underlying anxious attachment. *Journal of Personality, 74*, 1163-1190.
- Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology, 78*, 350-365.
- Gilovich, T., Medvec, V. H., & Chen, S. (1995). Commission, omission, and dissonance reduction: Coping with regret in the “Monty Hall” problem. *Personality and Social Psychology Bulletin, 21*, 182-190.
- Hawley, L. C., & Cacioppo, J. T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine, 40*, 218-227.
- Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*, 511-524.
- Joel, S., MacDonald, G., & Shimotomai, A. (2011). Conflicting pressures on romantic commitment for anxiously attached individuals. *Journal of Personality, 79*, 51-74.

- John, O. P., Donahue, E. M., & Kentle, R. L. (1991). *The Big Five Inventory—Versions 4a and 54*. Berkeley: University of California, Berkeley, Institute of Personality and Social Research.
- Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, methods, and research. *Psychological Bulletin, 118*, 3-34.
- Kirkpatrick, L. A., & Hazan, C. (1994). Attachment styles in close relationships: A four-year prospective study. *Personal Relationships, 1*, 123-142.
- Leach, F. R., & Plaks, J. E. (2009). Regret for errors of commission and omission in the distant term versus near term: The role of level of abstraction. *Personality and Social Psychology Bulletin, 35*, 221-229.
- Mikulincer, M. (1998). Adult attachment style and affect regulation: Strategic variations in self-appraisals. *Journal of Personality and Social Psychology, 75*, 420-435.
- Mikulincer, M., Dolev, T., & Shaver, P. R. (2004). Attachment-related strategies during thought suppression: Ironic rebounds and vulnerable self-representations. *Journal of Personality and Social Psychology, 87*, 940-956.
- Mikulincer, M., Gillath, O., & Shaver, P. R. (2002). Activation of the attachment system in adulthood: Threat-related primes increase the accessibility of mental representations of attachment figures. *Journal of Personality and Social Psychology, 83*, 881-895.
- Mikulincer, M., & Shaver, P. R. (2005). Attachment theory and emotions in close relationships: Exploring the attachment-related dynamics of emotional reactions to relational events. *Personal Relationships, 12*, 149-168.
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York, NY: Guilford.
- Mikulincer, M., Shaver, P. R., Bar-On, N., & Ein-Dor, T. (2010). The pushes and pulls of close relationships: Attachment insecurities and relational ambivalence. *Journal of Personality and Social Psychology, 98*, 450-468.
- Morrison, M., & Roese, N. J. (2011). Regrets of the typical American: Findings from a nationally representative sample. *Social Psychological and Personality Science*. Advance online publication. doi:10.1177/1948550611401756
- Noftle, E. E., & Shaver, P. R. (2006). Attachment dimensions and the Big Five personality traits: Associations and comparative ability to predict relationship quality. *Journal of Research in Personality, 40*, 179-208.
- Ozer, D. J., & Benet-Martinez, V. (2006). Personality and the prediction of consequential outcomes. *Annual Review of Psychology, 57*, 401-421.
- Purvis, A., Howell, R. T., & Iyer, R. (2011). Exploring the role of personality in the relationship between maximization and well-being. *Personality and Individual Differences, 50*, 370-375.
- Reb, J., & Connolly, T. (2009). Myopic regret avoidance: Feedback avoidance and learning in repeated decision making. *Organizational Behavior and Human Decision Processes, 109*, 182-189.
- Schwartz, B., Ward, A., Monterosso, J., Lyubomirsky, S., White, K., & Lehman, D. R. (2002). Maximizing versus satisficing: Happiness is a matter of choice. *Journal of Personality and Social Psychology, 83*, 1178-1197.
- Shaver, P. R., & Brennan, K. A. (1992). Attachment styles and the "Big Five" personality traits: Their connections to each other and with romantic relationship outcomes. *Personality and Social Psychology Bulletin, 18*, 536-545.
- Shaver, P. R., Schachner, D. A., & Mikulincer, M. (2005). Attachment style, excessive reassurance seeking, relationship processes, and depression. *Personality and Social Psychology Bulletin, 31*, 343-359.
- Spunt, R. P., Rassin, E., & Epstein, L. M. (2009). Aversive and avoidant indecisiveness: Roles for regret proneness, maximization, and BIS/BAS sensitivities. *Personality and Individual Differences, 47*, 256-261.
- van Herreveld, F., van der Pligt, J., & de Liver, Y. N. (2009). The agony of ambivalence and ways to resolve it: Introducing the MAID model. *Personality and Social Psychology Review, 13*, 45-61.
- Van Kleef, G. A., De Dreu, C. K. W., & Manstead, A. S. R. (2006). Supplication and appeasement in conflict and negotiation: The interpersonal effects of disappointment, worry, guilt, and regret. *Journal of Personality and Social Psychology, 91*, 124-142.
- Zeelenberg, M., & Pieters, R. (2007). A theory of regret regulation 1.0. *Journal of Consumer Psychology, 17*, 3-18.

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