Can’t get you off my mind: Relationship reflection creates cognitive load for more anxiously attached individuals

Sarah C.E. Stanton
Lorne Campbell
University of Western Ontario, Canada

Abstract
Attachment anxiety is characterized by rumination about romantic relationships, particularly when the attachment system is activated. Two studies investigated the hypothesis that more anxiously attached individuals would experience cognitive load when attachment concerns were activated (vs. not activated). Study 1 found that more anxious persons encountering relationship threat (vs. no threat) demonstrated greater holistic processing on a shape categorization task, a type of processing reflective of cognitive load. Study 2 found that more anxious persons encountering relationship threat (vs. no threat or academic threat) exhibited slower reaction times on a Stroop task, a pattern also reflective of cognitive load. This research lends novel insight into how attachment system activation and relationship reflection pose a cognitive vulnerability for more anxious individuals.

Keywords
Attachment, attention, cognitive load, holistic processing, romantic relationships

In romantic relationships, intimates may experience conflicting thoughts and feelings regarding their partners and the future of their relationships. At one moment they may worry about losing their partner’s affection, whereas at another moment they find they...
cannot stop thinking of how much they love and want to be with their partner. Experiencing relatively rapid transitions between these states of apprehension and cheerful optimism about one’s romantic relationship are particularly common for more anxiously attached individuals (i.e., people higher in attachment anxiety). More anxious persons tend to be consumed by thoughts of their partner and relationship, simultaneously harboring concerns of rejection and abandonment as well as aspirations of being loved and cared for (i.e., relational ambivalence; Mikulincer, Shaver, Bar-On, & Ein-Dor, 2010). Additionally, these individuals continually evaluate their partner for signs of love or rejection and become emotionally and cognitively overwhelmed when they perceive such signs to be present (e.g., Campbell, Simpson, Boldry, & Kashy, 2005; Main, 1991; Mikulincer, 1998; Stanton & Campbell, 2013). For more anxious individuals, then, the hyperactivation of relationship concerns when the attachment system is activated should therefore occupy cognitive resources that could be used in other tasks, representing a cognitive vulnerability in the form of cognitive load. The present research tests this hypothesis.

**Attachment theory**

According to Bowlby (1973, 1980, 1982), early interactions with significant caregivers (also called attachment figures) help generate internal working models of the self and significant others that guide behavior across the life span and influence perceptions about what relationships should be like (see Baldwin, 1992; Baldwin, Fehr, Keedian, Seidel, & Thomson, 1993). Over the years, as scholars have used attachment theory to understand and explain adult romantic relationship processes, a general consensus has emerged that two relatively orthogonal dimensions tap individual differences in self-report measures of adult attachment (Brennan, Clark, & Shaver, 1998; Simpson, Rholes, & Phillips, 1996). The *avoidance* dimension reflects the degree to which individuals feel uncomfortable with closeness and emotional intimacy in relationships. Those who score higher on attachment avoidance tend to be less invested in their relationships and try to remain emotionally independent of their partners (Hazan & Shaver, 1994). The *anxiety* dimension, on the other hand, reflects the degree to which individuals worry and ruminate about being rejected or abandoned by their romantic partners. Those who score higher on attachment anxiety tend to crave affection from their partners while simultaneously distrusting their partners’ love (Collins, 1996). Less avoidant and less anxious individuals are secure in their relationships; they are comfortable with intimacy and do not obsess about rejection from their partners.

Mikulincer and Shaver (2003, 2007) introduced a model that details the activation and operation of the adult attachment system. According to this model, the primary strategy of the attachment system involves seeking proximity to attachment figures during times of need. Secure attachment tends to develop when attachment figures are available and responsive to an individual’s needs. On the other hand, when attachment figures are consistently unavailable or unresponsive, this results in the use of secondary attachment strategies to deal with the resulting sense of insecurity. These strategies involve deactivation or hyperactivation of the attachment system. *Deactivating* strategies involve the
inhibition of proximity seeking when an attachment figure is unavailable and are typically employed by those who score higher on attachment avoidance.

In contrast to deactivating strategies, hyperactivating strategies aim to make an unresponsive attachment figure pay attention to the individual and provide care and support and are typically employed by those who score higher on attachment anxiety. Thus, more anxiously attached persons make strong attempts to maintain proximity to attachment figures and monitor their relationship partners closely for signs of deficient or waning physical or emotional intimacy (Mikulincer & Shaver, 2007). Indeed, research suggests that attachment-related thoughts and concerns are chronically salient for more anxious individuals, even when objective threats are low (Mikulincer, Birnbaum, Woddis, & Nachmias, 2000; Mikulincer, Gillath, & Shaver, 2002). Additionally, more anxious individuals have a lower threshold for perceiving partner behaviors as potentially threatening to the stability of the relationship and remain concerned even when their partners express love or act positively toward them (e.g., Campbell et al., 2005; Collins, 1996).

The tendency for more anxiously attached persons to harbor doubts regarding their partner’s love and acceptance when the attachment system is activated also seems to foster relationship cognitions that are negatively biased. For instance, more anxious individuals are more likely to assign negative attributions to their partner’s behavior as well as fail to attend to information that may be beneficial for the relationship (Collins & Allard, 2001; Collins & Feeney, 2004). Moreover, the negative emotions, particularly anger, experienced in the presence of a perceived relationship threat can overwhelm more anxiously attached individuals and interfere with their ability to utilize resources that can help them contain those negative feelings (Mikulincer, 1998; see also Main, 1991; Stanton & Campbell, 2013).

For these reasons, the chronic relationship worries harbored by more anxiously attached individuals should pose a cognitive vulnerability such that when attachment concerns are activated (vs. when they are not), they may get “carried away” by their relationship-focused thoughts. In other words, attachment system activation that triggers more anxious persons’ concerns should occupy cognitive resources, undermining their ability to devote these cognitive resources to other tasks. Prior studies of the cognitive consequences of attachment system activation, however, are limited in at least two ways. First, the nature of how activation of the attachment system may yield a cognitive vulnerability for more anxious individuals is largely speculative (e.g., Collins & Allard, 2001). Exactly how the activation of attachment concerns translates into cognitive impairment, then, has yet to be systematically investigated. Second, not all prior experimental studies of attachment include appropriate control conditions (see Campbell & Marshall, 2011), thus limiting the ability to test, for example, the particular contexts that should be more likely to result in cognitive load for more anxious individuals. That is, although attachment-related thoughts are chronically accessible for more anxious persons (e.g., Mikulincer et al., 2002), it is likely that any cognitive vulnerability they experience occurs specifically in response to situations in which the attachment system is activated (e.g., situations that trigger their tendency to worry about their relationships), as opposed to situations in which the attachment system is not activated.
The primary objective of the present research, therefore, was to provide a concrete demonstration of how attachment system activation (compared to baseline) should result in cognitive vulnerability for more anxiously attached individuals. Specifically, we propose that the activation of more anxious individuals’ attachment systems (e.g., via relationship threat) results in cognitive load. We tested this first hypothesis in Studies 1 and 2. Our secondary objective was to demonstrate that the cognitive load effects exhibited by more anxious individuals occur when the attachment system has been activated by relationship stimuli in particular. We tested this second hypothesis in Study 2. We explored the cognitive load effects associated with attachment anxiety following relationship threat using well-validated and diverse measures of cognitive load; in particular, holistic versus analytic shape categorization (Study 1) and Stroop color-naming task response latencies (Study 2).

Study 1

Study 1 employed an established categorization task adapted from Smith and Shapiro (1989) that asked participants to indicate similarity between a target shape and two other shapes; one shared a similar total area with the target shape and the other shared a specific feature with a target shape. In this paradigm, the selection of the more similar shape represents holistic processing, whereas the selection of the shape that shares a particular feature with target shape represents analytic processing. Compared to analytic processing, holistic processing appears when individuals cease deliberating thoroughly and instead rely on nonstrategic, fundamental cognitive processes (Kemler Nelson & Smith, 1989). This task has previously been linked to cognitive load processes; specifically, Smith and Shapiro (1989) demonstrated that participants categorize objects in a more holistic manner when under cognitive load (e.g., when trying to remember a long string of digits) compared to participants not under cognitive load. In light of these studies, then, cognitive load thus seems to occupy cognitive resources and therefore directs individuals to a “fallback” mode of holistic categorization (see also Smith, Tracy, & Murray, 1993).

In Study 1, we predicted that activation of attachment concerns for more anxiously attached persons should create cognitive load, leading these individuals to demonstrate greater holistic processing compared to more anxious persons in a control condition (i.e., compared to baseline levels of categorization by more anxious persons). No differences in the proportion of holistic categorization were expected for less anxious individuals across experimental conditions regardless of the presence or absence of relationship threat, as less anxious individuals are better able to cope with negative relationship events (see Campbell et al., 2005). We also did not predict any differences to emerge for more avoidantly attached individuals, as these individuals deactivate their attachment system following threat and do not obsessively worry or ruminate about negative relationship events (Mikulincer & Shaver, 2007).
Method

Participants

The sample comprised 69 individuals (51 women and 18 men) who participated in the study in exchange for partial course credit. Participants were between 17 and 31 years of age ($M = 19.36, SD = 2.65$) and were currently involved in relationships lasting between 3 and 156 months ($M = 19.35, SD = 20.89$).

Procedure

Participants arrived at the lab and first completed a battery of questionnaires. Individual differences in attachment orientations were assessed with the Experiences in Close Relationships Scale (Brennan et al., 1998), a 36-item questionnaire consisting of 18 items that measure attachment anxiety (e.g., “I worry about being abandoned”) and 18 items that measure attachment avoidance (e.g., “I prefer not to be too close to romantic partners”) rated on a 7-point scale ($1 = strongly disagree$ and $7 = strongly agree$). Anxiety and avoidance scores were created by averaging responses across the 18 items for their respective dimensions, with higher scores indicating greater attachment anxiety and avoidance, $\alpha = .89$ (anxiety) and $\alpha = .92$ (avoidance).

Next, participants were randomly assigned to one of two experimental conditions. Individuals in the relationship threat condition were asked to imagine two scenarios in which their partners behaved in a distant and potentially rejecting manner toward them (e.g., their partner did not respond when they tried to cuddle; Collins, 1996). Specifically, they were asked to reflect on each of these partner behaviors one at a time and to briefly write about how they would feel if their partner behaved this way toward them as well as how they might respond. Individuals in the no threat condition proceeded directly to the next task.

Following the experimental manipulation, participants completed a 7-item measure of negative affect (Collins, 1996) in which they rated how angry, hurt, disappointed, unappreciated, sad, jealous, and unloved they currently felt on a 7-point scale ($1 = not at all$ and $7 = very$), $\alpha = .92$. This measure was included to rule out the possibility that negative affect accounted for the predicted effects given in prior research, suggesting that affect can influence cognitive processing (e.g., Gasper & Clore, 2002).

Finally, participants completed a shape categorization task, assessing holistic and analytic processing created by the current authors (materials available upon request). The task consisted of a 30-page booklet in which each page contained three rectangular shapes, one at the top and two at the bottom. Individuals were asked to indicate which of the two bottom shapes they felt most closely resembled the top shape. Shapes were constructed by calculating specific dimensions, following the suggestions of Smith and Shapiro (1989; see also Gasper & Clore, 2002). Holistic options were constructed to have a closer total area to the top shape, whereas analytic options were designed to have at least one dimension (length or width) exactly in common with the top shape. Thus, holistic options required individuals to examine only the overall resemblance of the two shapes, whereas analytic options required individuals to examine the similarity of specific dimensions between the two shapes. The booklet contained 20 critical trials with holistic
and analytic options and 10 filler trials. The primary dependent measure was the proportion of holistic processing (i.e., the number of trials out of 20 that participants selected the holistic shape option). Holistic and analytic options were counterbalanced as to whether they appeared in the bottom right or bottom left of the page and whether they were larger or smaller than the top shape. Pages were presented in a random order across participants. After completing the categorization task, participants were debriefed and dismissed.

Results and discussion

To test our primary hypothesis, a general linear model, specifically an analysis of covariance, was run with the proportion of holistic processing as the outcome variable and centered continuous scores on attachment anxiety and attachment avoidance, threat condition (no threat vs. relationship threat), and all relevant interactions entered as predictors. In Table 1, we present the solution to the normal equations (i.e., unstandardized regression coefficients). Consistent with the hypotheses, the interaction between experimental condition and attachment anxiety was significant. Testing our primary hypothesis, simple effects analyses found that more anxiously attached individuals in the threat condition engaged in significantly more holistic processing compared to more anxious individuals in the no threat, or baseline, condition, \(b = .06, F(1, 63) = 4.81, p = .03, \eta^2 = .07\). Less anxiously attached persons, however, did not differ across experimental conditions, \(b = -.02, F(1, 63) < 1.00, p = .45, \eta^2 = .01\) (see Figure 1). No effects emerged for attachment avoidance, and when negative affect was entered in the model, the reported effects of attachment anxiety remained robust and no interactions with negative affect emerged.

These results provide evidence that activation of the attachment system through relationship threat can create cognitive load for more anxiously attached persons, leading them to process stimuli more holistically (i.e., categorization based on overall resemblance rather than exact features) compared to more anxious persons whose attachment system has not been activated. Moreover, this greater holistic processing resulting from relationship threat scenarios perhaps suggests that when the attachment system is activated, more anxious individuals are less able to focus on the specific aspects of a

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Proportion of holistic categorization</th>
<th>Effect size ((\eta^2))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>.54</td>
<td></td>
</tr>
<tr>
<td>Attachment anxiety</td>
<td>-.16</td>
<td>.01</td>
</tr>
<tr>
<td>Attachment avoidance</td>
<td>.01</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Experimental condition</td>
<td>.02</td>
<td>.02</td>
</tr>
<tr>
<td>Anxiety (\times) Condition</td>
<td>.04*</td>
<td>.06</td>
</tr>
<tr>
<td>Avoidance (\times) Condition</td>
<td>.01</td>
<td>&lt;.01</td>
</tr>
</tbody>
</table>

*p < .05.
situation. These results also highlight the importance of attachment system activation in determining when more anxious persons are cognitively vulnerable. In other words, although relationship-related thoughts are easily accessible for more anxious persons, this may not lead them to be cognitively vulnerable at all times; rather, they seem to be vulnerable to cognitive impairment primarily following the activation of the attachment system.

Study 2

Study 2 sought to extend Study 1 in two main ways. First, we aimed to demonstrate cognitive load effects for more anxiously attached individuals using a different, more performance-based cognitive task. Second, we investigated whether cognitive load effects are specific to relationship-related threats compared to other sources of threat (e.g., academic threat). To assess cognitive load effects in Study 2, we used a Stroop color-naming task, hypothesizing that more anxiously attached individuals in a relationship threat condition would exhibit slower reaction times to all types of Stroop trials (congruent, control, and incongruent) compared to more anxious individuals in an academic threat or a no threat (i.e., baseline) condition.

Our rationale for this prediction is based on the distinction between cognitive load effects and resource depletion effects on tasks containing trials of varying difficulty. Specifically, resource depletion is the process by which part of an existing psychological resource is removed (see Baumeister, Bratslavsky, Muraven, & Tice, 1998). Cognitive load, however, is the process by which part of an existing psychological resource is occupied by something else (see Sweller, 1988). Prior work on resource depletion has
established that depletion influences responses to complex (e.g., difficult), but not simple (e.g., easy), tasks (Schmeichel, Vohs, & Baumeister, 2003). Thus, resource depletion processes impair performance on incongruent, but not congruent or control, Stroop trials (see Richeson & Shelton, 2003). In contrast, cognitive load influences responses to both complex and simple tasks, and thus cognitive load can impair performance on all types of Stroop trials (see Lattimore & Maxwell, 2004). Because we hypothesize that thinking about relationships creates cognitive load for more anxiously attached individuals (i.e., occupying their attentional resources rather than depleting them), more anxious individuals who encounter relationship threat should exhibit slower reaction times on all types of Stroop trials. In other words, we expected overall reaction times to vary as a function of threat condition and attachment anxiety.

**Method**

**Participants**

The sample comprised 102 individuals (80 women and 22 men) who participated in the study in exchange for partial course credit. We excluded the data of five participants because they failed to follow instructions during the study (e.g., during the experimental manipulation) or had major problems with the Stroop task (e.g., more than 10% of trials had extremely long response latencies), leaving a final sample of 97 (76 women and 21 men). Participants were between 17 and 30 years of age ($M = 19.48$, $SD = 2.70$) and were currently involved in relationships lasting between 3 and 110 months ($M = 24.08$, $SD = 22.20$).

**Procedure**

Participants arrived at the lab and first completed a battery of questionnaires, including the same measure of attachment used in Study 1 ($\alpha = .90$ for the anxiety dimension and $\alpha = .89$ for the avoidance dimension). Participants were then randomly assigned to one of three experimental conditions. Individuals in the relationship threat condition were asked to reflect on times when they were concerned about their partner (e.g., when they felt rejected or felt worried that their partner was pulling away) or the future of their relationship and to write about how they felt during those times. Individuals in the academic threat condition were asked to reflect on times when they were concerned about school (e.g., not doing well) or uncertain about their academic future and to write about how they felt during those times. Individuals in the no threat condition proceeded directly to the next task.

Following the experimental manipulation, participants completed a 3-item measure of negative affect (Crowe & Higgins, 1997) in which they rated how discouraged, sad, and disappointed they currently felt on a 7-point scale ($1 = \text{not at all}$ and $7 = \text{very much}$), $\alpha = .77$. As in Study 1, this measure was included to rule out the possibility that negative affect accounted for the predicted effects.

Finally, participants completed a Stroop task to assess cognitive load effects. The task consisted of 12 practice trials followed by three blocks of 12 trials each, for a total of 36
experimental trials. On each trial, the word “yellow,” “red,” “green,” or “blue” appeared on the screen in one of the four colors. On congruent trials, the color of the word was consistent with the semantic meaning of the word (e.g., “blue” displayed in blue), on control trials, the color of the word was irrelevant to the semantic meaning of the word (e.g., “xxxx” displayed in blue), and on incongruent trials, the color of the word was inconsistent with the semantic meaning of the word (e.g., “green” displayed in blue). Each stimulus word appeared for 2000 ms, preceded by a fixation cross (+). Participants were instructed to press one of four color-coded keys on a computer keyboard to indicate the color in which a stimulus word appeared on the computer screen as quickly and accurately as they could. The primary dependent measure was the reaction time (in milliseconds) to the three types of Stroop trials. After completing the Stroop task, participants were debriefed and dismissed.

Results and discussion

Prior to the main analyses, Stroop trials with extremely short (i.e., less than 300 ms) or extremely long (i.e., greater than 2000 ms) response latencies were removed (see Fazio, 1990; Lackenbauer & Campbell, 2012). Our reaction time data demonstrated significant positive skew despite this initial constraint, however, and thus response latencies were then subjected to a natural log transformation to better approximate normality. (For ease of presentation nontransformed response latencies are displayed in the figure and main text.) Latencies were then averaged according to the type of trial (i.e., congruent, control, and incongruent).

To test hypotheses, a mixed-design analysis of variance was conducted with reaction times for each type of Stroop trial (congruent vs. control vs. incongruent) as a repeated measures outcome variable and centered continuous scores on attachment anxiety and attachment avoidance, threat condition (no threat vs. academic threat vs. relationship threat), and all relevant interactions entered as predictors. As in Study 1, no effects emerged for attachment avoidance and including negative affect in the model did not generate any effects nor did it remove the effects reported for attachment anxiety.

As expected, the three-way interaction between threat condition, attachment anxiety, and Stroop trial type was not significant, $F(2, 181) = 0.18, p = .84, \eta^2 = .001$, suggesting that reaction times to easy (i.e., congruent and control) and difficult (i.e., incongruent) Stroop trials did not differ as a function of threat condition and attachment anxiety. Also consistent with hypotheses, a significant interaction between threat condition and attachment anxiety emerged, $F(1, 91) = 6.44, p = .01, \eta^2 = .08$, suggesting that overall reaction times varied as a function of scores on anxious attachment and threat condition (see Figure 2).

Decomposing this interaction on the overall reaction times (i.e., combined response latencies to congruent, control, and incongruent trials) to test our specific hypotheses, simple slope analyses using general linear models were used, as in Study 1. For these models, two dummy codes were created to represent each condition (Aiken & West, 1991), and interaction terms between the dummy codes with both anxious and avoidant attachment scores were entered as predictors. To compare those high in attachment anxiety across conditions, as well as those low in attachment anxiety across conditions,
in one model, the partner threat condition served as the comparison group for the academic threat and control conditions, and in a second model, the control group served as the comparison group for the other two conditions. Results revealed that more anxiously attached individuals in the relationship threat condition exhibited significantly slower reaction times compared to more anxious individuals in the no threat (or baseline) and academic threat conditions, $b = .08, F(1, 90) = 9.25, p = .003, \eta^2 = .09$ and $b = .08, F(1, 90) = 8.52, p = .004, \eta^2 = .08$, respectively. No differences in response latencies emerged for more anxious persons in the no threat condition compared to more anxious persons in the academic threat condition, $b = .001, F(1, 90) < 1.00, p = .73, \eta^2 < .001$. Less anxiously attached persons did not differ across any of the experimental conditions, $Fs < 1.00, ps > .32$.

Study 2 provides further evidence for cognitive load created through attachment system activation for more anxiously attached individuals. Thinking about relationship threat, compared to baseline or thinking about academic threat, led individuals higher in attachment anxiety to respond more slowly to easy and difficult Stroop trials. These findings also distinguish that the cognitive vulnerability resulting from attachment system activation represents cognitive load rather than resource depletion, as resource depletion effects should influence performance only on difficult tasks (Richeson & Shelton, 2003; Schmeichel et al., 2003), but cognitive load can influence performance on easy and difficult tasks (Lattimore & Maxwell, 2004). Lastly, this study demonstrates that cognitive load effects emerge in response to relationship stimuli specifically, suggesting that more anxious persons are not cognitively overwhelmed by any source of distress but only by relationship-relevant distress.

**Figure 2.** Study 2: Interaction of experimental condition and attachment anxiety predicting overall Stroop reaction times (combined congruent, control, and incongruent trials).
General discussion

In two studies, we found support for the notion that activation of the attachment system via relationship threat creates cognitive load for more anxiously attached individuals, influencing subsequent cognitive processing and performance. Prior research has found that individuals under cognitive load categorize objects more holistically (Smith & Shapiro, 1989). In Study 1, more anxious persons who encountered relationship threat demonstrated greater holistic processing on a shape categorization task. Prior studies have also demonstrated that individuals under cognitive load respond more slowly to all types of trials (congruent, control, and incongruent) in a Stroop color-naming task (Lattimore & Maxwell, 2004). In Study 2, more anxious persons who encountered relationship threat exhibited slower response latencies to all trials, both easy and difficult, on a Stroop task. It seems, therefore, that the relationship threat manipulations utilized in the present research created cognitive load for more anxious individuals. Importantly, more anxious individuals experienced these cognitive load effects only when thinking about relationship threat, as opposed to general distress such as academic concerns (Study 2), which highlights the importance of relationship events in influencing those higher in attachment anxiety. An additional strength of the present research is that cognitive load effects were found for both controlled (Study 1) and self-generated (Study 2) relationship threat scenarios.

These findings imply that once more anxiously attached individuals are prompted to think about their romantic relationships, they get carried away by their thoughts. Although scholars have demonstrated that attachment figures and relationship-relevant information are highly accessible to more anxiously attached individuals (e.g., Mikulincer et al., 2000, 2002), as well as speculated on the cognitive vulnerabilities these individuals may experience as a result of this accessible information (see Collins & Allard, 2001), the present experiments are the first to document an actual cognitive mechanism through which more anxiously attached individuals may worry and ruminate about their relationships. That is, activating the attachment system occupies the attentional resources of more anxious persons, creating cognitive load and undermining processing and performance on subsequent cognitive tasks.

An additional contribution of the present research is that both studies included a control condition to better ascertain how responses may differ when the attachment system is activated (vs. at baseline). Indeed, these studies demonstrate that the behavior of more anxiously attached persons varies as a function of context, a distinction sometimes understudied by past research (see Campbell & Marshall, 2011). Attesting to the importance of attachment system activation in establishing when attachment anxiety can be linked to cognitive vulnerability, cognitive load effects emerged only under relationship threat conditions. The present research suggests, therefore, that these cognitive load effects depend on attachment system activation, and without this activation, the cognitive capabilities of more anxious individuals are not compromised.

Our findings suggest that the way more anxiously attached persons handle their relationships do not result solely from negative expectations of their partner (see Collins...
& Feeney, 2004); rather, activation of the attachment system seems to overload the cognitive capacity of more anxious persons, weakening their ability to focus on all elements of a situation. Thus, these studies may shed light on why, when the attachment system is activated, more anxious persons make negative attributions for their partner’s behavior (Collins & Feeney, 2004), have trouble containing negative emotions such as anger (Main, 1991; Mikulincer, 1998), and remain consistently upset during relationship conflict even when their partner behaves positively toward them (Campbell et al., 2005). In other words, once the attachment system is activated, more anxious individuals have fewer cognitive resources to devote to other interpersonal tasks, which may lend insight into their negative behavior.

The results of the present studies open the door to interesting new directions for research on attachment anxiety. For example, it may be that frequent activation of the attachment system that impairs cognitive functioning leads to long-term consequences (e.g., in goal pursuit). More anxiously attached individuals thus may suffer in other cognitive processing and performance areas (e.g., workplace efficiency and academic grades). Additionally, future studies may wish to explore possible psychological mechanisms that may translate into cognitive load. For instance, prior research has found that more anxious persons have a tendency to ruminate about relationship events (e.g., Mikulincer & Shaver, 2003); it seems reasonable to suggest that this obsessive relationship-centered reflection may be one mechanism through which the cognitive load effects demonstrated in the present research occur.

Other future research may consider investigating how positive relationship events may or may not induce cognitive load for more anxiously attached persons. For example, Bartz and Lydon (2006) found that highly anxious individuals performed worse on a cognitive task when they learned that an opposite sex stranger (a study confederate) expressed interest in interacting with them. The authors suggested that the positive overtures of the stranger served to arouse fears of being rejected or disliked, resulting in cognitive impairment. Other scholarly explorations of attachment have found that the relational ambivalence (i.e., harboring both positive hopes and discouraging doubts) experienced by more anxious persons leads them to feel a combination of optimism- and apprehension-related emotions in response to positive relationship events (see Mikulincer et al., 2010; Mikulincer & Shaver, 2005). Thus, given that the attachment system of more anxious individuals can be activated even by relatively weak threats (e.g., Mikulincer et al., 2000, 2002), it may be that positive relationship events are also sufficient to induce cognitive load.

In conclusion, the current research provides empirical evidence that more anxiously attached individuals experience the activation of attachment concerns as cognitive load, which creates a cognitive vulnerability by occupying their cognitive resources and limiting their ability to direct attention to other tasks. Importantly, the present two studies used existing and valid measures of cognitive load. Moreover, each study included control conditions, as suggested by Campbell and Marshall (2011), to better determine the contexts that lead more anxiously attached individuals to experience, or to not experience, cognitive load. Attachment system activation in response to relationship-related threat scenarios in particular, therefore, appears to have notable influence over the cognitive processes involved in attachment anxiety.
Acknowledgment

The authors thank Allie Gallinger, Aishi Jiang, Dana Kaner, and Valerie Murphy for their assistance in data collection.

Funding

This research was supported in part by a grant to L.C. from the Social Sciences and Humanities Research Council (SSHRC) of Canada.

Note

1. When decomposing the two-way interaction, significant effects emerged for each trial type separately as well as the combined overall trial variable.

References


