

Partners' attachment insecurity predicts greater physiological threat in anticipation of attachment-relevant interactions

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Abstract

This study examined whether anticipating interacting with a partner higher in attachment insecurity predicted greater physiological threat in an emotion regulation context. Eighty-eight couples watched an emotionally negative film clip, prepared to discuss the video with their partner, and then engaged in a conversation. One dyad member (*regulator*) was randomly assigned to express versus suppress affective displays while his/ her partner (*target*) was given no additional instructions. Greater partner avoidance was associated with stronger physiological responses consistent with the experience of threat—sympathetic arousal coupled with increased vascular resistance—when regulators anticipated suppressing versus expressing affective displays. Greater partner anxiety was associated with greater physiological threat responses regardless of the emotion regulation context. Threat responses also manifested during the conversation: Regulators and targets with highly avoidant partners exhibited greater threat responses when suppressing versus expressing affective displays. Additionally, more insecure partners found the conversation more difficult. These data are the first to show that *anticipating* attachment-relevant interactions with more insecure partners elicit cardiovascular responses diagnostic of threat.

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Adult attachment insecurity is one of the most studied and understood individual difference factors that affect adult romantic relationships (see Mikulincer & Shaver, 2003). However, relationships involve two partners: Individuals are both impacted by, and can impact, the insecure responses of their partners (Overall & Simpson, 2015). The principal focus of prior dyad-centered research has been on how security can be bolstered or negative emotions downregulated in more insecure partners *during* difficult interactions (Lemay & Dudley, 2011; Simpson & Overall, 2014). Less is known about the ramifications for the individuals grappling with more insecure partners, particularly *prior* to difficult relationship interactions. The current research examined how individuals with more insecure partners anticipate the strain of their partners' insecurities using in vivo physiological responses to index the experience of threat in anticipation of and during an attachment-relevant discussion.

Attachment insecurity and destructive responses in relationship interactions

Adult attachment insecurity undermines relationship quality and stability because individuals high in insecurity respond in more destructive ways during difficult relationship interactions (Mikulincer & Shaver, 2003; Simpson & Rholes, 2012). People high in *attachment anxiety* strongly desire closeness and intimacy but worry about their partners' depth of commitment (Mikulincer & Shaver, 2003). These rejection concerns result in more anxious individuals experiencing intense distress when their partners are upset or desire less closeness (Rholes, Simpson, & Oriña, 1999; Simpson, Rholes, & Phillips, 1996), which triggers attempts to gain reassurance of their partners' commitment (Alexander, Feeney, Hohaas, & Noller, 2001; Overall, Girme, Lemay, & Hammond, 2014). In contrast, people high in *attachment avoidance* harbor deep-seated distrust of others and strive to avoid dependence and closeness (Mikulincer & Shaver, 2003). Consequently, highly avoidant individuals tend to suppress their attachment needs and become angry and withdrawn during emotional, intimate, or otherwise difficult relationship interactions (Overall, Simpson, & Struthers, 2013; Rholes et al., 1999; Simpson, Rholes, & Nelligan, 1992; Simpson et al., 1996).

Until recently, the attachment literature has tended to take an individual-centered perspective by focusing on how *individuals'* attachment insecurity impact relationships (actor effects). However, there is growing evidence that the way in which intimates respond to their *partners'* insecurities is important for containing the damage of attachment insecurity (partner effects; Lemay & Dudley, 2011; Overall & Simpson, 2015; Simpson & Overall, 2014). For example, when individuals detect attachment anxiety, they cautiously disguise negative feelings and exaggerate affection, which can help highly anxious partners feel more accepted (Lemay & Dudley, 2011; also see Tran & Simpson, 2009). Similarly, individuals who soften threatening communications and convey high levels of validation can reduce highly avoidant partners' anger and

withdrawal and bolster their trust and commitment (Farrell, Simpson, Overall, & Shallcross, 2016; Overall et al., 2013).

Although prior research has shown that intimates can behave in ways that down-regulate the destructive reactions of insecure partners, little is known about whether people enter interactions with insecure partners anticipating that these difficulties will ensue. Lemay and Dudley (2011) argued that individuals with highly anxious partners anticipate their partners' rejection sensitivity and therefore strategically preempt insecure reactions by concealing negativity and providing high levels of reassurance. Individuals who have highly avoidant partners should also anticipate their partners' tendency to respond in attachment-relevant situations with defensiveness and withdrawal because their prior interactions with their partner should create explicit or implicit expectations that they will face (and have to manage) the destructive reactions of their highly avoidant partners. The demands associated with anticipating the difficulties that could arise when interacting with partners higher in either attachment avoidance or anxiety, and the difficulties involved with navigating their insecure responses within interactions, should elicit stress responses.

An important way to assess stress responses created by partners' attachment insecurity is to assess physiological signs of stress before and during attachment-relevant interactions (Beck, Pietromonaco, DeBuse, Powers, & Sayer, 2013). Physiological measures circumvent demand characteristics associated with self-reporting perceptions of relationship partners, and they also reveal how partners' insecurity can impact stress responses that are associated with health and disease (Beck et al., 2013; Pietromonaco & Beck, 2015; Pietromonaco, Uchino, & Schetter, 2013). Moreover, particular physiological measures of stress responses can isolate responses indicative of threat states—when appraisals of demands outweigh resources to cope (Blascovich & Mendes, 2010). In the current research, we use these physiological measures to examine whether anticipating interacting with partners high in attachment avoidance or anxiety elicits physiological responses indicative of psychological threat.

Anticipatory threat prior to dyadic interactions

The biopsychosocial (BPS) model of challenge and threat provides a theoretical framework to understand how difficulties associated with anticipating and managing partners' attachment insecurity might manifest physiologically (Jamieson, Hangen, Lee, & Yeager, 2018). A fundamental principle of challenge and threat theory is that appraisals of demands (e.g., perceptions of required effort, uncertainty, and danger) and resources (e.g., perceptions of social support, familiarity, and skills/ability) interact to elicit responses in acute stress contexts (Jamieson et al., 2018). Threat manifests when demands are appraised as exceeding resources. Alternatively, individuals experience challenge when coping resources are appraised as exceeding perceived demands. Threat and challenge, however, are not dichotomous states, but rather are better conceptualized as anchors along a continuum of possible stress responses. Thus, individuals within stressful relationship contexts, such as during attachment-relevant situations, may experience more threat than challenge when perceived demands exceed coping resources.

Threat and challenge are associated with specific physiological response patterns derived from activation of the sympathetic–adrenal–medullary (SAM) and hypothalamic–pituitary–adrenal (HPA) axes (see Mendes & Park, 2014, for a biologically oriented review). Both challenge and threat are accompanied by SAM activation, but threat also strongly activates the HPA axis, which stimulates the release of cortisol. Acute activation of the SAM axis resulting from challenge appraisals leads to catecholamine production, which increases ventricular contractility and decreases vascular resistance (Brownley, Hurwitz, & Schneiderman, 2000). HPA axis activation resulting from threat appraisals, however, tempers SAM effects and results in increased peripheral resistance (see Seery, 2011, for a review). Thus, a core difference between challenge and threat patterns of reactivity is a decrease in total peripheral resistance (TPR) in challenge states, but an increase in TPR in threat states (e.g., Jamieson, Nock, & Mendes, 2012). When situations are appraised as threatening, like we predict will occur when anticipating or having to manage the difficulties associated with partners' attachment insecurity, individuals exhibit increased TPR (relative to baseline) to prepare for damage and defeat.

The utility of assessing anticipatory threat using TPR has been established in recent work examining the physiological threat associated with different emotion regulation strategies. For example, Peters and Jamieson (2016) and Peters, Overall, and Jamieson (2014) instructed participants to either engage in expressive suppression (i.e., inhibit displays of affect) or express affective displays during an emotional discussion, and physiological responses were measured. Participants *expecting* to suppress (vs. express) affective displays before the discussion exhibited greater TPR reactivity indicative of threat. These anticipatory effects are consistent with the difficulty and damage associated with expressive suppression *during* conversations, including both partners exhibiting greater physiological responses indicative of threat and experiencing reduced rapport (Ben-Naim, Hirschberger, Ein-Dor, & Mikulincer, 2013; Butler et al., 2003; Peters & Jamieson, 2016; Peters, Overall, & Jamieson, 2014; Srivastava, Tamir, McGonigal, John, & Gross, 2009). However, anticipatory effects also reveal that the physiological threat responses resulting from suppressing affective displays can be driven by people *anticipating* that enacting expressive suppression will be difficult and have negative interpersonal consequences.

A similar physiological pattern diagnostic of threat should also occur when people enter emotionally relevant interactions with insecure partners who tend to respond destructively in emotional situations. We tested this prediction in the current study by using the established emotion regulation paradigm described above because (a) the paradigm has been shown to reliably induce physiological responses indicative of threat and (b) the task is inherently attachment relevant. Having to discuss one's thoughts and feelings about a film provides a standardized emotion-based context that can activate the attachment system and the attachment concerns and responses associated with anxiety and avoidance (Mikulincer & Shaver, 2003; Simpson & Rholes, 2012). Thus, if individuals with more insecure partners expect difficulties will arise in attachment-relevant interactions, they should exhibit physiological responses indicative of threat in anticipation of emotional-based discussions with their partners. We predicted that individuals with *partners* higher in attachment anxiety or avoidance would experience physiological

responses diagnostic of threat as they prepared to discuss an emotionally evocative film with their partner.

The established emotion regulation paradigm also allows an examination of the contexts in which the anticipatory threat associated with partners' attachment insecurity should be magnified. Indeed, the effects of attachment insecurity emerge more strongly as the relevant difficulties and threat occur more strongly in attachment-relevant situations (Mikulincer & Shaver, 2003; Simpson & Rholes, 2012). Prior research has demonstrated that instructing participants to suppress (vs. express) affective displays increases the threatening nature of relationship interactions, and thus, this manipulation should exacerbate the threat responses associated with anticipating interacting with more insecure partners. In particular, anticipating engaging in expressive suppression (vs. expression) elicits threat responses because participants anticipate the difficulty and reduced rapport associated with suppression (Peters & Jamieson, 2016). These negative consequences should be particularly problematic for individuals with partners high in attachment insecurity because engaging in expressive suppression (relative to expression) signals low desire for affiliation and may also signal dissatisfaction and unresponsiveness. Therefore, engaging in expressive suppression restricts individuals' compensatory buffering behaviors that help counteract the destructive effects of attachment insecurity. We predicted that any anticipatory threat associated with partners' insecurity would be exacerbated for individuals instructed to engage in expressive suppression.

Current research

The current research investigated whether individuals with partners high in attachment avoidance or anxiety enter difficult interactions anticipating the destructive reactions of insecure partners by assessing physiological responses just before an attachment-relevant discussion. We used an established dyadic emotion regulation paradigm (Ben-Naim et al., 2013; Butler et al., 2003; Peters & Jamieson, 2016; Peters et al., 2014) for examining anticipatory threat because it (a) offers a standardized attachment-relevant context involving discussing emotions with partners and (b) effectively manipulates the relative threat of attachment-relevant interactions by instructing individuals to engage in specific emotion regulation strategies (expressive suppression vs. expression) that have been shown to consistently vary in levels of threat (Peters & Jamieson, 2016; Peters et al., 2014).

Both members of an established romantic dyad first watched a negatively valenced film with the expectation that they would subsequently discuss their "deepest thoughts and feelings" about the film with their partners. Before the conversation, one member of the dyad (i.e., the *regulator* of emotion regulation) was randomly instructed to suppress or express outward displays of affect during the discussion, whereas the other member of the dyad (i.e., the *target* of emotion regulation) was simply told to have a conversation. Physiological responses diagnostic of threat (i.e., TPR) were measured in *anticipation of* and *during* the conversation.

We hypothesized that individuals with partners higher (vs. lower) in attachment anxiety or avoidance would exhibit greater physiological responses indicative of threat

in anticipation of these emotion-based attachment-relevant discussions. Additionally, we hypothesized that anticipatory threat would be most pronounced when the difficulties of the upcoming interaction were increased by instructing individuals to suppress vs. express affective displays.

We then measured responses during the conversation. Similar to the anticipatory phase, we expected individuals with partners higher (vs. lower) in attachment insecurity to exhibit physiological threat responses during the conversation, especially when expressive suppression intensified the difficulty of the interaction. Post-conversation ratings of difficulty were also assessed to provide additional support that individuals higher in attachment insecurity experienced greater difficulties during the discussion.

Our primary aims and predictions focused on *partner* effects, which examine individuals' physiological threat responses as a function of their partners' levels of attachment insecurity. However, we also examined actor effects—links between individuals' own attachment insecurity and their own physiological responses. Prior research has found that highly avoidant individuals exhibit attenuated physiological responses within emotionally relevant contexts, which is consistent with their tendencies to create and maintain psychological and emotional distance, but prior work has found no association between physiological responses and attachment anxiety (Ben-Naim et al., 2013). Here, we sought to replicate and extend actor effects by demonstrating the effects of *partners'* attachment insecurity.

Method

Participants

Eighty-eight (88) dyads (total $N = 176$; 83 heterosexual dyads) who had been involved in a romantic relationship for at least 3 months ($M_{\text{length}} = 15$ months, $SD = 13.5$) were recruited to participate through an online study pool system (SONA) and flyers posted in the area ($M_{\text{age}} = 20.63$ years, $SD = 2.56$; 86 White, 57 Asian, 13 Hispanic, 8 Black, 12 mixed/other). Participants were compensated with 2 credit hours or \$10.¹

Measures and procedure

Upon arrival, dyad members were separated into private testing rooms where participants completed the Experiences in Close Relationships–Revised (ECR-R) Scale (Fraley, Waller, & Brennan, 2000), which assesses attachment avoidance ($M = 2.57$, $SD = .96$; Cronbach's $\alpha = .74$) and attachment anxiety ($M = 3.25$, $SD = 1.19$, Cronbach's $\alpha = .89$). The experimenter then affixed physiological sensors, and participants relaxed for a 5-min baseline recording. After baseline, participants watched an 11-min clip from a documentary about World War II that originally aired on the BBC titled, "Hiroshima: BBC History of World War II" (from minutes 46:54 to 57:54). Similar videos have been used previously to elicit negative affect in prior emotion regulation research (see Butler et al., 2003; Peters & Jamieson, 2016; Peters et al., 2014).

Participants were then told they would discuss their emotional reactions to the video with their partner. One person from the dyad (the regulator of emotion regulation) was

randomly assigned to receive additional emotion regulation instructions (counter-balanced across dyads). In the *expressive suppression* condition, regulators were told to discuss their feelings regarding the video but to not convey these emotions outwardly using facial expressions or gestures.

During the conversation, behave in such a way that your partner does not know you are feeling any emotions at all. That is, try not to express your emotions outwardly. Keep stoic even when speaking about your feelings regarding the video . . . talk about your emotions and thoughts related to the content of the video clip, but keep your face and body emotionless. For example, you can talk about your initial feelings upon seeing some of the images or how you feel emotionally about the topic in general, but make every effort you can not to use facial expressions, inflections in your voice, or body gestures to convey those emotions or feelings. For example, try not to even smile back at your partner at any point during the conversation and try to remain still and stoic. The primary task is for you to discuss your most basic thoughts and emotions, but to do so without showing any emotions outwardly.

In the *emotion expression* condition, regulators were instructed to discuss and emphasize their feelings using gestures and facial expressions.

During the conversation, behave in such a way that the emotions you are feeling are clear to your partner. That is, try to express your emotions outwardly. Use expressive gestures and facial expression to convey your feelings regarding the video . . . talk about your emotions and thoughts related to the content of the video clip, and emphasize these feelings with gestures/expressions. For example, you can talk about your initial feelings upon seeing some of the images or how you feel emotionally about the topic in general. Make every effort you can to use inflections in your voice or body gestures to convey those emotions or feelings. For example, try to use nonverbal signals and facial expressions to convey your specific emotional state to your partner during the conversation and use facial cues like nods or smiles to let your partner know you understand what they're saying. The primary task is for you to reflect on your most basic thoughts and emotions and to convey these feelings to your partner.²

Dyad members randomly assigned to be the *target* of regulators' expression or suppression were simply instructed to discuss and share their feelings regarding the video. Thus, targets served as a control condition that helped to clarify how individuals with more insecure partners typically respond when anticipating attachment-relevant conversations.

After receiving interaction instructions, regulators and targets remained in their private testing rooms for an anticipatory period during which they were given 3 minutes to "gather their thoughts" and prepare for the upcoming conversation while physiological measures were recorded. Following the anticipation period, couples were brought together for a 5-min conversation during which physiological measures were recorded.

Physiological measures

Electrocardiography (ECG), impedance cardiography (ICG), and blood pressure (BP) signals were collected at baseline, during anticipation of the conversation, and throughout

the conversation. Signals were sampled at 1,000 Hz and integrated using Biopac MP150 hardware (BIOPAC Systems Inc, Goleta, CA). ECG and ICG signals were scored offline by trained personnel. Signals were visually examined, and the ensemble averages were analyzed using Mindware software (MindWare Technologies LTD, Gahanna, OH). As is standard in laboratory paradigms examining cardiovascular responses to stressful social situations, physiological reactivity scores were computed by subtracting scores taken during the final minute of baseline (i.e., the most relaxed period) from those collected during the anticipatory and conversation periods (see Llabre, Spitzer, Saab, Ironson, & Schneiderman, 1991, for psychometric justification on the use of change scores in psychophysiology; see Blascovich, Mendes, Hunter, & Salomon, 1999; Jamieson, Koslov, Nock, & Mendes, 2013, e.g., from studies informed by the BPS model of challenge and threat).

Physiological analyses focused on TPR to index the psychological experience of threat in vivo in anticipation of and during conversations. In the context of the BPS model of challenge and threat, both challenge and threat type responses to social stress are accompanied by SAM axis activation, but threat also strongly activates the HPA axis. Thus, when individuals experience challenge, the production of catecholamines resulting from SAM activation elicits vasodilation (decreasing TPR). On the other hand, when individuals appraise threat, HPA axis activation tempers SAM effects, resulting in increased TPR (see Jamieson et al., 2018). TPR was calculated with the following validated formula: $TPR = (\text{mean arterial pressure} / [\text{heart rate} \times \text{stroke volume}]) \times 80$ (Sherwood et al., 1990).^{3,4}

Post-conversation ratings of discussion difficulty

After the conversation, participants were escorted back to private testing rooms where they reported the extent to which they experienced difficulty during the discussion (“*I felt uncomfortable during the conversation task*,” and “*It was difficult to discuss the video with the other person*,” –4 = *strongly disagree*, 0 = *neither agree nor disagree*; 4 = *strongly agree*; Cronbach’s $\alpha = .74$).

Results

Our primary predictions were that individuals with highly insecure partners would (1) exhibit greater TPR—a physiological response associated with the experience of threat—in anticipation of a conversation with their partner (a main effect of *partners’* attachment anxiety or avoidance) and that (2) being instructed to suppress nonverbal displays of affect would further exacerbate this threat response (an interaction effect between *partners’* attachment anxiety/avoidance, role, and emotion regulation condition). To test predictions, we followed guidelines suggested by Kenny, Kashy, and Cook (2006) and ran a series of Actor-Partner Independence Model (APIM) analyses using the MIXED procedure in SPSS 22. Individuals’ TPR scores were regressed on the following factors: (1) a contrast code that indexed experimental condition (–1 = *suppression*, 1 = *expression*), (2) a contrast code that indexed participants’ role in the conversation (–1 = *regulators who were instructed to suppress or express their emotions*, 1 = *targets who*

Table 1. Effects of partner's attachment insecurity, emotion regulation condition (suppression vs. expression) and role (regulator vs. target of regulation) on TPR during the anticipation and conversation phases.

	Anticipation of conversation				During conversation			
	B	SE	t	r	B	SE	t	r
Condition	-12.31	10.43	-1.18	.13	-24.08	12.21	-1.97[†]	.22
Role	-23.79	10.06	-2.37*	.26	9.30	10.17	0.91	.11
Condition × Role	18.36	10.06	1.83[†]	.20	1.50	10.17	0.15	.02
<i>Partner Effects</i>								
Partner Anxiety	19.49	8.97	2.17*	.17	6.76	9.78	0.69	.05
Partner Anxiety × Condition	-0.60	8.97	-0.07	.01	4.05	9.78	0.41	.03
Partner Anxiety × Role	4.35	8.97	0.49	.04	3.72	9.76	0.38	.03
Partner Anxiety × Condition × Role	-1.17	8.97	-0.13	.01	14.63	9.76	1.50	.12
Partner Avoidance	-3.14	11.19	-0.28	.02	12.69	12.39	1.02	.08
Partner Avoidance × Condition	-13.58	11.18	-1.21	.10	-23.20	12.39	-1.87[†]	.15
Partner Avoidance × Role	-4.17	11.25	-0.37	.03	7.13	12.72	0.56	.05
Partner Avoidance × Condition × Role	23.70	11.25	2.11*	.17	11.69	12.72	0.92	.08
<i>Actor Effects</i>								
Anxiety	3.70	8.86	0.42	.04	-0.09	9.77	-0.01	.00
Anxiety × Condition	-0.98	8.86	-0.11	.01	10.18	9.77	1.04	.09
Anxiety × Role	1.07	8.85	0.12	.01	-0.43	9.76	-0.04	.00
Anxiety × Condition × Role	-17.05	8.85	-1.93[†]	.16	-13.12	9.76	-1.35	.11
Avoidance	-9.78	11.14	-0.88	.07	-26.07	12.28	-2.12*	.17
Avoidance × Condition	-3.30	11.14	-0.30	.02	-17.41	12.28	-1.42	.12
Avoidance × Role	-8.75	11.20	-0.78	.06	3.80	12.62	0.30	.03
Avoidance × Condition × Role	6.25	11.20	0.56	.05	14.16	12.62	1.12	.10

Note. Role was contrast coded -1 = *regulator of regulation*, 1 = *target of regulation*. Condition was contrast coded -1 = *expressive suppression*, 1 = *emotional expression*. The pattern of results reported here did not change when anxiety and avoidance were modeled separately.

[†]p < .10; *p < .05; **p < .01.

did not receive emotion regulation instructions), (3) the Condition × Role interaction, (4) individuals' own grand-mean-centered scores of Attachment Avoidance and Anxiety, and associated interactions with Condition and Role (to assess actor effects), and (5) partners' grand-mean-centered scores of Attachment Avoidance and Anxiety, and associated interactions with Condition and Role (to assess partner effects).⁵

TPR during the anticipation phase

The Role, Condition, and Attachment effects predicting physiological threat during the anticipation phase are shown in Table 1 (see first column). We expected individuals with partners higher in attachment insecurity would exhibit greater TPR scores (indicative of

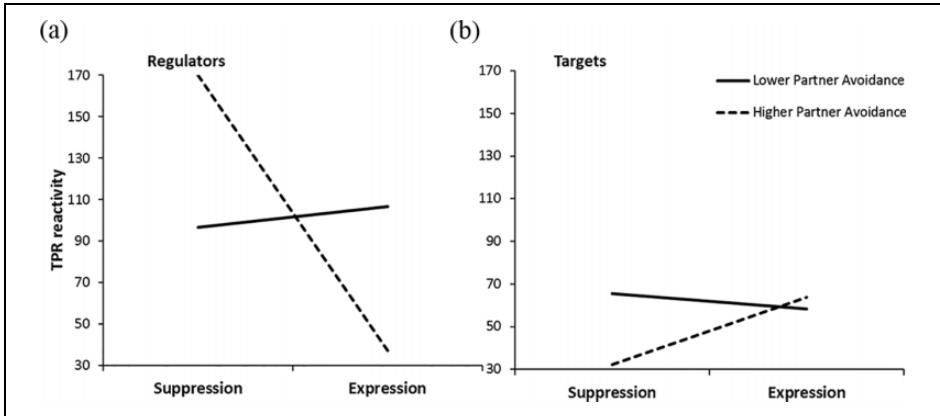


Figure 1. TPR reactivity for participants during the anticipatory phase by Role, Emotion Regulation Condition, and Partner Attachment Avoidance. *Note.* Partner Avoidance indexed at 1 SD above and 1 SD below the mean; TPR = total peripheral resistance.

threat) in anticipation of the conversation (*Partner Attachment effect*), and this threat response would be magnified when individuals with highly insecure partners were instructed to suppress (vs. express) their affective displays (i.e., regulators assigned to the expressive suppression condition). Thus, this prediction represents a *Partner Attachment* \times *Condition* \times *Role* effect.

Supporting predictions, a *Partner Avoidance* \times *Condition* \times *Role* interaction emerged. Regulators with partners higher in avoidance exhibited higher TPR reactivity (more threat) in the suppression (vs. expression) condition, $B = -66.37$, $SE = 20.62$, $t = -3.22$, $p = .002$, $r = .25$ (slope across conditions), whereas regulators with partners lower in avoidance did not, $B = -5.03$, $SE = 21.13$, $t = .24$, $p = .812$, $r = .11$ (see Figure 1, Panel A). Targets (who were ignorant of the emotional regulation condition and served as a control comparison group) did not show increased TPR according to greater partners' attachment avoidance.

A main effect of *Partner Anxiety* (see Table 1) revealed that anticipating having to interact with a highly anxious partner was associated with greater physiological responses diagnostic of threat regardless of condition (suppression vs. expression) or role (regulator vs. target).

Supporting that the anticipated difficulties associated with interacting with partners' attachment insecurity elicited greater threat responses, the effects of partners' attachment insecurity were also stronger than actor effects of attachment insecurity (see *Actor Effects* section in Table 1). Only one marginal *Actor anxiety* \times *Condition* \times *Role* interaction emerged ($p = .056$), suggesting that regulators lower ($B = -49.80$, $SE = 18.69$, $t = -2.66$, $p = .009$, $r = .22$), but not higher ($B = -11.54$, $SE = 22.17$, $t = -.52$, $p = .60$, $r = .05$), in attachment anxiety exhibited greater threat responses in the suppression versus expression condition. This suggests highly anxious individuals' exhibited greater threat responses across conditions, including higher levels in the

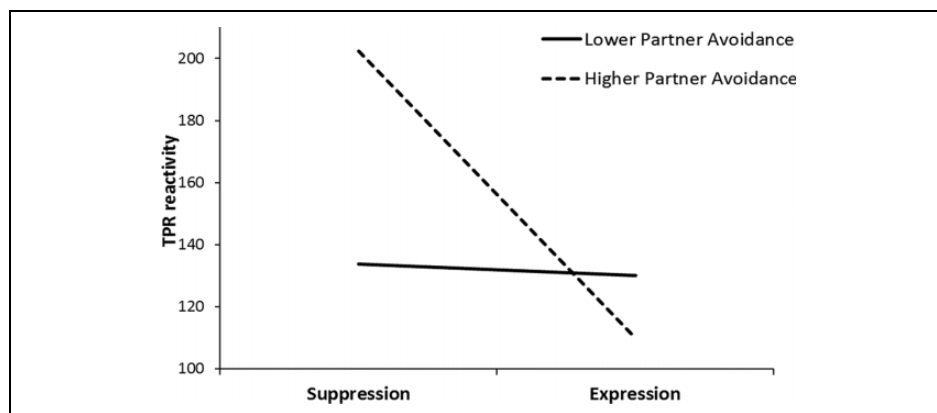


Figure 2. TPR reactivity for participants during the conversation by Emotion Regulation Condition and Partner Attachment Avoidance. Note. Partner avoidance indexed at 1 SD above and 1 SD below the mean; TPR = total peripheral resistance.

expression condition, which aligns with the consistent threat response across conditions that individuals with highly anxious partners exhibited.

TPR during the conversation

We next examined TPR responses during the conversation to test whether the anticipatory threat associated with partners' attachment insecurity also manifested during the conversation (see second column in Table 1). Given expressive suppression has been shown to impact both interaction partners (e.g., Peters & Jamieson, 2016; Peters et al., 2014), regulators and targets of expressive suppression were expected to respond with increased TPR. Consistent with this idea, individuals in the expressive suppression condition, regardless of role, exhibited marginally higher TPR scores compared to the expression condition (main effect, $p = .052$).

Moreover, consistent with the threat responses exhibited by regulators of highly avoidant partners during the anticipation phase, a marginal *Partner Avoidance* \times *Condition* interaction emerged during the conversation ($p = .063$). Individuals with partners higher in avoidance exhibited greater TPR reactivity scores in the expressive suppression versus expression condition, $B = -46.30$, $SE = 16.76$, $t = -2.76$, $p = .007$, $r = .25$, whereas individuals with partners lower in avoidance did not, $B = -1.86$, $SE = 17.29$, $t = -.11$, $p = .915$, $r = .08$ (see Figure 2). This pattern suggests that interacting with a more avoidant partner is threatening when instructed to suppress (regulator role) or when facing a highly avoidant partner who has been instructed to suppress affective displays (target role).

A main effect of *Actor* avoidance also emerged, and it suggests that participants higher in attachment avoidance exhibited lower TPR reactivity scores (less threat) overall. This effect is consistent with prior research that has shown highly avoidant individuals exhibit attenuated physiological responses within emotionally relevant

Table 2. Effects of emotion regulation condition (suppression vs. expression), role (regulator vs. target of regulation), and actor's and partner's attachment insecurity on conversation difficulty.

	<i>B</i>	<i>SE</i>	<i>t</i>	<i>r</i>
Condition	−.13	.18	−0.75	.08
Role	.01	.15	0.09	.01
Condition × Role	.07	.15	0.45	.05
<i>Partner Effects</i>				
Partner Anxiety	.02	.14	0.14	.01
Partner Anxiety × Condition	.06	.14	0.42	.03
Partner Anxiety × Role	.00	.14	0.02	.00
Partner Anxiety × Condition × Role	.24	.14	1.68	.14
Partner Avoidance	−.00	.17	−0.02	.00
Partner Avoidance × Condition	.13	.17	0.72	.06
Partner Avoidance × Role	−.33	.18	−1.86 [†]	.16
Partner Avoidance × Condition × Role	−.10	.18	−0.54	.05
<i>Actor Effects</i>				
Anxiety	.35	.14	2.49*	.20
Anxiety × Condition	−.01	.14	−0.04	.00
Anxiety × Role	.02	.14	0.16	.01
Anxiety × Condition × Role	−.19	.14	−1.37	.11
Avoidance	.08	.17	0.45	.03
Avoidance × Condition	.03	.17	0.18	.01
Avoidance × Role	.49	.18	2.71**	.22
Avoidance × Condition × Role	−.55	.18	−3.08**	.25

Note. Role was contrast coded −1 = *regulator of regulation*, 1 = *target of regulation*. Condition was contrast coded −1 = *expressive suppression*, 1 = *emotional expression*. The pattern of results reported here did not change when anxiety and avoidance were modeled separately.

[†] $p < .10$; * $p < .05$; ** $p < .01$.

contexts (Ben-Naim et al., 2013). These blunted physiological responses have been interpreted as a physiological signal of avoidant tendencies to maintain psychological and emotional distance, and hence, individuals with more avoidant partners experience threat in anticipation of and during relationship interactions.

Post-conversation ratings of difficulty

Finally, we examined whether regulators' and targets' post-conversation ratings of discussion difficulty supported that the anticipatory threat experienced by individuals with partners higher in attachment insecurity arises because of warranted expectations that their partners will experience and create interpersonal difficulties in the conversation. Results from analyses examining post-conversation reports of discussion difficulty are shown in Table 2.

An *Actor* Avoidance × Condition × Role interaction emerged. Regulators lower in avoidance found the expressive suppression condition more difficult than the expression condition, $B = -.76$, $SE = .34$, $t = -2.21$, $p = .029$, $r = .18$, whereas regulators higher in attachment avoidance did not, $B = .36$, $SE = .34$, $t = 1.07$, $p = .285$, $r = .09$.

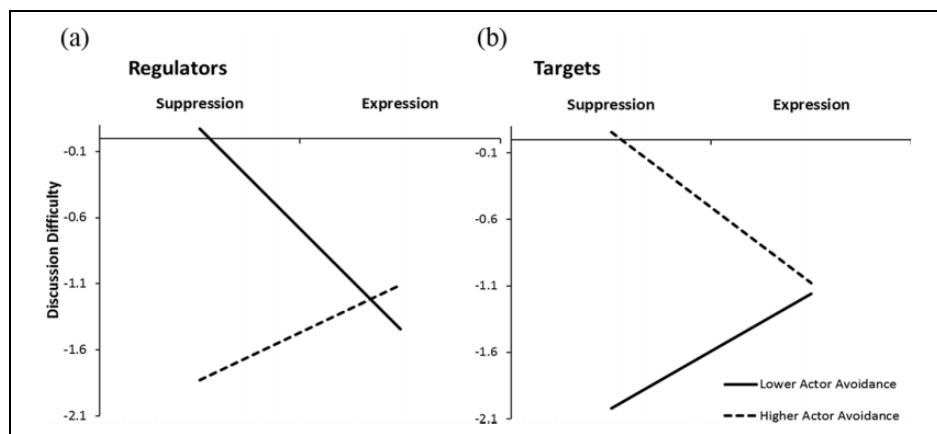


Figure 3. Participants' post-conversation ratings of conversation difficulty by Role, Emotion Regulation Condition, and Actor Attachment Avoidance. Note. Actor Avoidance indexed at 1 SD above and 1 SD below the mean.

(see Figure 3, Panel A). Thus, people higher in avoidance were more comfortable suppressing affective displays, whereas those lower in avoidance reported the difficulty of suppression suggested by prior research.

The effect of avoidance when considering *targets'* responses provides support of the threat regulators of expressive suppression experienced with targeted partners higher in avoidance before and during the discussion (Figure 3, Panel B). In particular, although the difficulty experienced by targets higher in avoidance was only marginally greater than the difficulty they reported in the expression condition, $B = -.57$, $SE = .32$, $t = -1.76$, $p = .080$, $r = .14$, highly avoidant targets reported significantly greater difficulty in the expressive suppression condition compared to targets lower in avoidance, $B = 1.09$, $SE = .37$, $t = 2.97$, $p = .004$, $r = .24$. Thus, highly avoidant *targets* found the most difficult conversation to be the one in which their partners (regulators of expressive suppression) had to suppress their affective displays and were exhibiting the greatest physiological responses indicative of threat.

Finally, a main effect of *Actor* anxiety revealed that those higher in attachment anxiety appraised the conversation as being more difficult. This main effect provides support that the threat shown when individuals were anticipating interacting with partners higher in attachment anxiety was warranted because those anxious partners did report the conversation as more difficult.

Discussion

Extant research on attachment-relevant interpersonal interactions has focused primarily on what occurs *during* and *after* difficult interactions. The current research examined whether individuals with insecure partners enter difficult interactions anticipating the destructive reactions of their insecure partners by assessing physiological responses diagnostic of threat in anticipation of attachment-relevant discussions. To do so, we

utilized a controlled experimental paradigm from the dyadic emotion regulation literature known to elicit anticipatory threat (Peters & Jamieson, 2016; Peters et al., 2014). As predicted, greater *partner attachment avoidance* was associated with stronger threat responses when anticipating an upcoming interaction that was manipulated to be more difficult because individuals were instructed to suppress (vs. express) affective displays. Individuals with partners higher in avoidance also exhibited exacerbated threat responses during conversations when one partner was instructed to suppress affective displays. Greater *partner attachment anxiety* was associated with stronger threat responses prior to interactions regardless of the emotion regulation context. Ratings of difficulty by insecure partners after the conversation also suggested that such anticipatory threat was warranted.

These results provide the first evidence that individuals exhibit greater physiological responses indicative of threat when they are preparing to interact with more insecure partners in emotionally relevant contexts. These findings have important implications for health; greater physiological threat responses have been linked to negative health processes, such as greater risk-taking behavior, accelerated cognitive decline with age, and greater risk of future cardiovascular disease (e.g., Jamieson & Mendes, 2016; Jefferson et al., 2010; Matthews, Gump, Block, & Allen, 1997). Moreover, the current study integrated models of adult attachment with emotion regulation methods and theory. This integration provided a basis for our predictions, and our findings advance both domains, which we describe next.

Partners' attachment avoidance and physiological threat responses

Individuals with highly avoidant partners exhibited physiological threat responses both *prior to* and *during* an emotionally relevant conversation with their partner when they were instructed to engage in expressive suppression. When faced with a difficult, attachment-relevant interaction, individuals with highly avoidant partners are typically confronted with defensive withdrawal and distancing from their partner (Overall et al., 2013; Rholes et al., 1999; Simpson et al., 1992, 1996). To reduce such defensive distancing, individuals with highly avoidant partners may engage in high levels of validating and caring behavior (Overall et al., 2013). However, in the current study, the instructed emotion regulation strategy of suppressing affective displays should exacerbate the interpersonal distance often created by highly avoidant partners and thus elicit greater physiological threat in anticipation of emotionally relevant conversations with their partners. These partner effects advance recent work indicating that people may try to manage their highly avoidant partners' disengagement during emotionally relevant interactions by providing the first demonstration that partners enter such interactions anticipating to confront their highly avoidant partners' defenses.

Individuals with highly avoidant partners also exhibited threat responses during conversations in which either individual was instructed to suppress affective displays. This pattern demonstrates (as we expected) that expressive suppression compounds the difficulty of relationship interactions involving partners who tend to withdraw and create distance. For individuals with avoidant partners, instructions to suppress affective displays should interfere with their ability to manage the typical distancing of their partners,

and their avoidant partners' instructions to suppress should exacerbate the interpersonal distance and reduced closeness they need to manage.

Actor effects also supported our explanation of the experience of threat caused by partner avoidance. A main effect of *Actor* Avoidance revealed that participants higher in attachment avoidance exhibited lower TPR reactivity scores (i.e., less threatened). This finding is consistent with prior research that shows reduced physiological arousal in response to emotional situations (Ben-Naim et al., 2013), but extends it by showing a blunted physiological response associated with less psychological threat. When faced with an emotional situation or the potential for emotional connection, highly avoidant individuals' first line of defense is to distance themselves from an emotional response or experience (Mikulincer & Shaver, 2003). This distance may have minimized the threat associated with having an emotional discussion, leading to an attenuated physiological response. Indeed, it is precisely this distancing style that we think is responsible for the threat experienced by those whose partners were higher in avoidance.

Moreover, highly avoidant partners reported the discussion was most difficult when they were targets of expressive suppression. This pattern also demonstrates that expressive suppression compounds the difficulty of relationship interactions involving partners higher in attachment avoidance and provides supporting evidence that the physiological signs of threat exhibited by individuals anticipating or interacting with highly avoidant partners are connected to the difficulties those partners experience in these conversations.

In sum, the overall pattern of findings supported predictions that physiological threat responses in anticipation of and during emotionally relevant interactions would be strongest when individuals were instructed to suppress emotional expressions and when their partners were higher in avoidance. However, individuals with partners *lower* in avoidance did not show stronger physiological signs of threat in the suppression versus expressive condition, contrary to the effects observed previously in the emotion regulation literature (Peters & Jamieson, 2016; Peters et al., 2014). This lower reactivity to suppression for those with partners low in avoidance is consistent with research showing that individuals lower in avoidance are less likely to react defensively with withdrawal and disengagement to attachment-relevant situations and thus show a more stable pattern across contexts regardless of their partners' responses (Overall et al., 2013; Rholes et al., 1999; Simpson et al., 1992, 1996). The pattern of *partners'* low attachment avoidance in the current study reveals the same stability across contexts for *partners*. Thus, individuals with partners lower in avoidance were likely unaffected by the manipulation because their relationship experiences indicate that they can trust their partners will be engaged and responsive in emotionally relevant conversations regardless of the difficulty or threat of the situation.

Partners' attachment anxiety and physiological threat responses

Individuals with partners higher in attachment anxiety exhibited greater physiological threat than those with partners lower in anxiety. This finding suggests that people who repeatedly encounter the rejection sensitivity and need for reassurance associated with attachment anxiety brace themselves going into *any* interaction involving emotional disclosure (e.g., Alexander et al., 2001; Moreira et al., 2003; Overall, Fletcher, Simpson, & Fillo, 2015; Simpson et al., 1992). This is consistent with research showing that

individuals with highly anxious partners are aware of their partners' insecurities and "walk on eggshells" to avoid triggering insecure responses (Lemay & Dudley, 2011). The current research extends this work by demonstrating that individuals experience greater physiological threat in anticipation of interacting with their insecure partners, which may activate the buffering behaviors shown in prior studies.

Providing additional support of the anticipatory threat associated with partner anxiety, partners higher in attachment anxiety reported that the subsequent conversation was more difficult and uncomfortable. Again, however, this did not vary by emotion regulation condition suggesting that highly anxious participants found either suppressing or expressing affective displays as difficult. Indeed, partners higher in attachment anxiety did not reveal the typical pattern of greater physiological threat to expressive suppression (vs. expression) in anticipation of the conversation because they appeared to be threatened similarly in both conditions. This may be because emotional expression can be just as threatening as suppression for highly anxious partners because any emotionally relevant disclosures and conversations can activate their chronic concerns of rejection and craving for reassurance and closeness (Overall et al., 2014; also see Moreira et al., 2003; Rholes et al., 1999; Simpson et al., 1992).

However, the physiological threat associated with partner anxiety only manifested in anticipation of the conversations, and it was not evident during couples' interactions. This could indicate that, despite the difficulty anxious partners reported that they experienced during conversations, individuals with highly anxious partners may have been able to respond in ways that buffered anxious responding (Lemay & Dudley, 2011; also, see Overall & Simpson, 2015). Thus, as outlined by Lemay & Dudley (2011), individuals with highly anxious partners anticipate that their partners will experience difficulties that they have to manage, which prompts buffering behaviors. Accordingly, in the current study, individuals whose partners were high in anxiety experienced threat in anticipation of the conversation but may have been able to manage the difficulties within the conversation in ways that were able to reduce their own and their partners' physiological threat during the interaction.

Contributions to emotion regulation research

In addition to advancing understanding regarding dyadic attachment processes, these novel results have implications for future emotion regulation research. Extant research on expressive suppression has typically focused on the regulator of emotions, revealing that suppression leads to a host of negative psychological, physiological, and cognitive consequences (Butler et al., 2003; Gross & John, 2003; Impett et al., 2012; John & Gross, 2004; Peters & Jamieson, 2016; Peters et al., 2014; Von Dras & Siegler, 1997). Notably, the attachment effects observed here suggest that effects of expressive suppression can be exacerbated/attenuated by attributes of interaction partners and that these partner effects can manifest even before interactions occur if there is a history between dyad members. Thus, the physiological threat responses observed here not only arose from *enacting* suppression but also from *expectations* associated with features of known interaction partners. Thus, anticipatory effects of expressive suppression may differ

greatly between dyads with an existing history (i.e., couples, friends, etc.) and stranger dyads who do not enter interactions with knowledge of their interaction partners.

Limitations and future research directions

Our predictions were based on prior work showing that individuals buffer insecure partners' threat-based reactions during relationship-relevant interactions (Lemay & Dudley, 2011; Overall & Simpson, 2015). However, we do not provide direct evidence for the mechanisms underlying the effects observed here. We speculated that individuals with avoidant partners were considering how expressive suppression would exacerbate the difficulties associated with the distance typically created by their avoidant partners (Overall & Simpson, 2015). For individuals with highly anxious partners, we argued the threat probably arose from repeated experiences with rejection-sensitive and reassurance-seeking partners (Lemay & Dudley, 2011). However, we did not measure chronic experiences or expectations in this study. Future research may seek to assess expectations of partners' attachment insecurities on important attachment-relevant situations and ambulatory physiological responses to test specific mechanisms. What our study does illustrate, however, is that examining anticipatory responses in dyadic interactions is illustrative for understanding how attachment insecurity can affect relationships and partners.

The experimental paradigm used in the current study allowed us to standardize the discussion context. As a comparison, research examining responses to relationship conflict often asks couples to discuss a topic of conflict which varies substantially in intensity, importance, and/or valence across couples (see Overall & McNulty, 2017). When assessing physiological responses, however, standardization is crucial given potentially powerful effects of intensity and self-relevance appraisals on physiological responses (Jamieson et al., 2018). The experimental paradigm used here manipulated affective displays and conversation role to test how partners' attachment insecurity influenced physiological responses. However, a potential limitation of this approach in the context of studying relationship processes is that conversations may not reflect a common attachment-relevant interaction that couples encounter and negotiate in their daily lives. Interactions involving more serious, relationship-relevant issues would likely exacerbate the threat responses observed in the current study, and thus, the current design represents a relatively conservative (and well-controlled) test.

Finally, the majority of the current sample included couples who had been dating for less than a year. It is possible that the threat experienced by individuals with highly insecure partners might be especially prominent in the context of younger relationships when relational uncertainty is high. However, attachment insecurity should be equally or even more intensely expressed when high levels of commitment and investment make the dependence concerns and fear of loss more salient and risky. The current study did not have the variability in relationship length nor power to properly test for the moderating role of length. Examining the role of relationship experiences in amplifying/attenuating threat responses is an interesting avenue for future research, particularly given that longer relationships are accompanied by longer histories to potentially inform anticipatory processes.

Conclusion

The current study demonstrates that people with more insecure partners experience greater physiological responses indicative of threat in anticipation of difficult attachment-relevant interactions. Individuals exhibited greater threat responses in anticipation of an emotionally based conversation with highly avoidant partners when the difficulty of that interaction was amplified by instructions to suppress their affective displays. Threat was also evident during conversations. By contrast, individuals exhibited greater threat responses in anticipation of interacting with their highly anxious partner regardless of emotion regulation instructions. These effects provide a novel and powerful illustration that individuals with insecure partners enter difficult interactions bracing for the destructive reactions that are typical of highly avoidant and anxious partners.

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Supplemental material

Supplemental material for this article is available online.

Notes

1. This sample has been used before but only to explore the main effect of the emotion regulation manipulation on physiological threat (Peters & Jamieson, 2016). The aims, hypotheses, measures, and results regarding how partners' *attachment insecurity* is associated with physiological threat, and whether that threat is magnified by the difficulties associated with expressive suppression, are completely novel and have not been reported before.
2. Post-task attributions from both the person instructed to regulate their emotions and their partners confirmed that regulators followed the emotion regulation instructions (see Peters & Jamieson, 2016, and the Online Supplementary Materials).
3. Compared to baseline, participants exhibited increased sympathetic arousal (measured via pre-ejection period) in anticipation of ($B = -2.71$, $SE = .46$, $t = -5.90$, $p < .001$, $r = .55$) and during the conversation ($B = -6.89$, $SE = .58$, $t = -11.44$, $p < .001$, $r = .79$). Participants also exhibited increased vascular resistance in anticipation of ($B = 78.75$, $SE = 10.43$, $t = 7.55$, $p < .001$, $r = .64$) and during the conversation ($B = 144.00$, $SE = 12.21$, $t = 75.70$, $p < .001$, $r = .80$).
4. We also conducted analyses with stroke volume (SV) as the dependent variable as decreases in SV can, but not always, index threat. Although some results were consistent with total peripheral resistance (TPR) findings, others did not have a clear theoretical interpretation given we did not have a corresponding interaction with TPR (see the Online Supplementary Materials).
5. Several additional analyses were conducted to rule out potential alternative explanations. First, following standard practice, we simultaneously modeled the effects of attachment anxiety and avoidance to account for their shared variance ($r = .15$, $p = .05$). Additional analyses that modeled anxiety and avoidance separately revealed comparable results to those shown here. Second, additional analyses revealed that entering in a main effect of relationship length did not

change the pattern of results and all the significant simple effects reported in Figures 1 and 2 remained. Third, in order to test for previously documented gender differences physiological responses (e.g., Glynn, Christenfeld, & Gerin, 1999), we also conducted additional analyses including the main effect and all interaction effects of gender. The pattern of results reported here did not change.

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