



# Attachment and emotion regulation: A person-centred examination and relations with coping with rejection, friendship closeness, and emotional adjustment

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Guided by attachment theory of emotion regulation (ER), the current study utilized a person-centred approach to identify clusters of individuals that differed in their attachment representations and ER, and further examined individual differences in socio-emotional functioning based on these profiles. Participants included 658 emerging adults ( $M = 19.9$ ,  $SD = 2.7$ , 65.5% female) who completed surveys measuring responses to rejection, friendship closeness, and emotional maladjustment. Five clusters were identified: secure regulated (19%), disorganized unregulated (21%), anxious unregulated (16%), emotive (21%), and avoidant suppressor (22%). Each group displayed unique patterns, with the secure regulated group reporting significantly less withdrawal, retribution, rumination, and emotional maladjustment, and the disorganized unregulated group reporting the poorest functioning across all indicators. Significant cluster  $\times$  sex effects were also found for friendship closeness. These findings suggest the importance of considering attachment and ER, and implications for attachment theory and development are discussed.

## Statement of contribution

### What is already known on this subject?

- Insecure attachment representations are a significant risk factor for poorer outcomes across development.
- Hyperactivating and deactivating strategies are maladaptive responses to coping with emotional threat.
- These strategies are an extension of the internal working model and positive correlates of poorer functioning.

### What does this study add?

- Previous studies have over-relied on variable-centred approaches to replicate findings of attachment theory.
- A person-centred approach allowing for the joint consideration of patterns of both attachment and ER strategies.
- The identification of five novel profiles revealing unique differences in three important domains of functioning.

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Classic attachment theory indicates that internal working models, which develop out of a history of caregiver responses to emotional needs during childhood, are a key emotional resource that is needed to recreate a sense of felt security when experiencing interpersonal stress (Allen & Miga, 2010; Bowlby, 1969, 1980; Cassidy, 2008; Chow, Ruhl, & Buhrmester, 2016; Maysless & Scharf, 2007). Interactions in early childhood with attachment figures who are available, sensitive, and responsive during times of need, facilitate the development of a secure attachment relationship and more felt security in the future (Bowlby, 1969, 1980). During childhood and across later development, youth who have a history of a secure attachment relationship are likely to have a more positive sense of self and have greater trust that others will be available during times of need (Allen & Miga, 2010; Cassidy, 2008). However, the experience of caregiver absence, rejection, or unavailability makes it more likely that an insecure attachment relationship and felt insecurity will occur. For these youth, they are more likely to perceive themselves as relatively less worthy of care and support, and perceive others as being unreliable, unsupportive, and un-responsive during times of need (Bowlby, 1969, 1980; Cassidy, 2008; Mikulincer, & Shaver, 2019; Mikulincer, Shaver & Pereg, 2003).

These internalized negative models of self and others associated with felt attachment insecurity have two dimensions, namely, attachment anxiety and attachment avoidance (Mikulincer & Shaver, 2019). For those who are higher on the attachment anxiety dimension, they are more likely to overly worry about the availability and responsiveness of others during times of need, whereas those who are higher on the attachment avoidance dimension are more likely to distrust the availability of others, and instead prefer self-reliance, independence, and creating distance during times of need (Bowlby, 1969, 1980; Cassidy, 2008; Mikulincer, & Shaver, 2019). Additionally, in some studies, felt attachment security has been indicated by low attachment anxiety and avoidance (Mikulincer *et al.*, 2003). Finally, some individuals are found to be high in both attachment anxiety and avoidance. Individuals who fall into this category are often labelled as disorganized, and often experience the greatest maladjustment, because they alternate between both forms of insecurity and have greater difficulty with self-soothing when experiencing threat (Cassidy, 2008; Zimmer-Gembeck *et al.*, 2017).

Building on classic theory, working models of attachment, and attachment anxiety and avoidance, have been described as closely associated with the development of emotional responding and regulation (Allen & Miga, 2010; Brenning & Braet, 2013; Mikulincer, & Shaver, 2019; Mikulincer *et al.*, 2003; Zimmer-Gembeck *et al.*, 2017). More specifically, individuals are more likely to demonstrate specific patterns of responding and regulating emotional threat, depending on the working model of attachment (i.e., secure, anxious, avoidant, or disorganized) that is most endorsed. For those more secure in their attachment orientation, they are more likely to seek closeness and support from others in their environment or have more comforting internalized attachment figures available to them (Mikulincer & Shaver, 2019; Mikulincer *et al.*, 2003; Zimmermann, 1999). Those who are more anxious in their attachment orientation can come to overly rely on hyperactivating strategies, whereby they report being overwhelmed by the emotions they experience and endorse increasingly energetic attempts to maintain or develop greater closeness to others (Brenning & Braet, 2013; Clear, Gardner, Webb, & Zimmer-Gembeck, 2019; Mikulincer & Shaver, 2019). Individuals who are more avoidant report more reliance on deactivating strategies whereby they endorse attempts to minimize their emotions, avoid closeness and interdependence, and prefer self-reliance (Besser & Priel, 2009; Brenning & Braet, 2013; Mikulincer, & Shaver, 2019; Mikulincer *et al.*, 2003). In other words, the attachment working model becomes closely tied to emotionality and

emotion regulation (ER) by adolescence and adulthood (Allen & Miga, 2010; Dawson, Allen, Marston, Hafen & Schad, 2014; Zimmermann, 1999).

Indeed, much of the conceptual literature has identified that an individual's capacity to regulate emotions is a natural extension of the attachment system (Allen & Miga, 2010; Cassidy, 2008; Mikulincer & Shaver, 2019; Zimmer-Gembeck *et al.*, 2017). Moreover, there is empirical evidence supporting the attachment model of ER and its associations with overall adjustment (Brenning & Braet, 2013; Clear *et al.*, 2019; Zimmer-Gembeck *et al.*, 2017). Yet, empirical investigations have only examined attachment in relation to ER, rather than considering within-person interactions or patterns across these inter-related constructs using a person-centred methodology (Bergman, Von Eye, & Magnusson, 2006; Bergman & Wangby, 2014). Despite the individuality of processes like adult attachment orientation and self-regulation, there are still predictable relationships between such processes that occur *within* the individual that have not been typically accounted for by previous investigations using variable-centred approaches. Using a person-centred approach allowed for a consideration of complex patterns whereby some individuals may exhibit insecurity in multiple forms and report difficulties with both dysregulation and suppression, whereas others may show other profiles more marked by avoidance or anxiety or ER deficits. Therefore, we aimed to fill this gap in the extant literature by acknowledging the coalescing of attachment and ER and utilizing a person-centred approach to identify patterns (or clusters) of individuals who differed in their attachment anxiety, attachment avoidance, dysregulated emotional expression, and suppression of emotion.

### **Person-centred approaches to attachment and emotion regulation**

While we could locate no previous study that has relied on a person-centred approach to examining attachment and ER, we did locate three studies (Brewer *et al.*, 2016; Turpyn *et al.*, 2015; Zalewski *et al.*, 2011) that used a person-centred approach to identify clusters of individuals with differing ER profiles. More specifically, consistent across these studies was a 4-cluster solution including a high dysregulation profile, a suppressed or under-reactive profile, a mixed but responsive profile and a well-regulated (or adaptive ER) profile. Thus, when anxious and avoidant attachment and ER strategies of dysregulation and suppression are simultaneously considered, a 4-cluster profile pattern may also sufficiently capture the diversity found among emerging adults. Consistent with past research, we expected that individuals with an anxiously or an avoidantly attached profile would tend to have an ER pattern that is more maladaptive relative to individuals low in both attachment anxiety and avoidance (Dawson *et al.*, 2014; Mikulincer, & Shaver, 2019). We therefore hypothesized that two clusters would emerge that clearly demarcate insecurity and dysregulation from security and regulation, including one cluster high in anxiety, avoidance, emotion dysregulation, and suppression, and a second cluster low in all measures (see Table 1). These two clusters would be consistent with attachment theory and research in identifying a profile of individuals who are disorganized in their attachment representation and ER deficits, and those who are secure and regulated in these domains, respectively. Further, we expected two other clusters to emerge, for a total of four clusters. The first would be distinguished by higher than average avoidant attachment and suppression, but low anxious attachment and dysregulation, given evidence of associations of avoidant attachment with deactivating strategies (Brenning & Braet, 2013; Mikulincer & Shaver, 2019). The second would be distinguished by

**Table 1.** Hypothesized clusters of attachment representation and ER-deficits

	Secure regulated	Anxious unregulated	Avoidant suppressor	Disorganized unregulated
Attachment avoidance	Low	Low	High	High
Attachment anxiety	Low	High	Low	High
Dysregulation	Low	High	Low	High
Suppression	Low	Low	High	High

higher than average anxious attachment and dysregulation but low avoidance and suppression, given evidence of associations of anxious attachment with hyperactivating strategies (Brenning & Braet, 2013; Clear & Zimmer-Gembeck, 2017; Mikulincer & Shaver, 2019).

### **Coping, friendship closeness, and symptoms as correlates of cluster profiles**

It was also hypothesized that cluster profiles would differ in socio-emotional functioning, given that the distinctiveness of the attachment representation would guide how individuals respond, either adaptively or maladaptively, to perceived threat. Furthermore, hyperactivating and deactivating strategies have been associated with poorer social adjustment or more negative interpersonal functioning (Mikulincer *et al.*, 2003) and poorer emotional adjustment (Brenning & Braet, 2013; Gardner & Zimmer-Gembeck, 2018). For example, some studies have found that securely attached individuals often report (or are observed to demonstrate) more adaptive and flexible coping and regulatory behaviours compared to those who are more insecure in their attachment (Dawson *et al.*, 2014; Seiffge-Krenke & Beyers, 2005; Zimmer-Gembeck *et al.*, 2017; Zimmermann, 1999). Additional studies have also found secure attachment to correlate with better socio-emotional adjustment, with the inverse relationship shown for insecure attachment (either anxious/preoccupied or avoidant/dismissive) (Besser & Priel, 2009; Brenning & Braet, 2013; Chow *et al.*, 2016; Maysless & Scharf, 2007; Özen *et al.*, 2010). Therefore, it appears that integrating the attachment system and ER regulatory processes would identify profiles that differ in their capacities to cope with stress, maintain close friendships, and experience distress, with the secure profile appearing more generally adaptive across these three domains.

### **The current study**

In summary, guided by theory of attachment and ER (Mikulincer & Shaver, 2019; Mikulincer *et al.*, 2003), the purpose of the study was to utilize a person-centred approach to identify profiles of attachment and ER among a sample of emerging adults. We hypothesized that a 4-cluster solution would represent the variety in person profiles, given attachment theory and the consistency of this pattern within the above-mentioned literature (Hypothesis 1). Furthermore, we aimed to identify differences in responses to interpersonal threat (i.e., social withdrawal, rumination, distraction, and retribution), as well as differences in emotional maladjustment (depression and anxiety symptoms) and perceived friendship closeness among these profiles. Here, we hypothesized that a 'secure regulated' cluster would report lower levels of maladaptive responses to rejection and fewer signs of emotional maladjustment, but greater friendship closeness relative to

all other classes (Hypothesis 2). We also believe that a cluster that is high in attachment anxiety and avoidance, and dysregulation and suppression, would report the poorest functioning compared to the other hypothesized clusters.

Finally, we considered sex differences, given that robust sex differences exist in young people's experience of interpersonal stress, and in their emotional reactions to such stress (Rudolph, 2002; Zimmer-Gembeck & Skinner, 2015). Here, we hypothesized that young women would report a greater likelihood of being in the more reactive profiles and would demonstrate higher levels of maladaptive responses and emotional maladjustment, but greater friendship closeness relative to young men (Hypothesis 3).

## Method

### *Participants and procedure*

The participants were 658 Australian university students aged 17–27 years ( $M = 19.9$ ,  $SD = 2.7$ , 65.5% female). Seventy-four per cent identified as Caucasian/white, while 10.7% identified as Asian, and 3.0% as Australian First Peoples or Pacific Islander. The remaining 12.3% identified as other (inclusive of African, Egyptian, Bosnian, etc.). Most participants identified as Australian citizens or permanent residents of Australia or New Zealand (69.9%), with 25.7% identifying as international students, and 3.4% from a study exchange programme. Additionally, 37.8% of the participants' mothers and 34.1% of the participants' fathers completed a university education; and 57.1% reported currently living with their parents, 7.1% reported living alone, and 2.3% reported living in a shared student accommodation. In total, 707 students began the survey, but 5% ( $n = 37$ ) were excluded because they completed very little of the survey (less than 5–10%). A further 2% ( $n = 12$ ) of participants were excluded because they were missing more than 20% of data on at least one of the measures of interest, resulting in a final sample of 658.

Approval for the conduct of this study was received from the university's Human Research Ethics Committee. Participants were recruited to participate using a convenience sampling technique during the orientation week of the first trimester of the school year. Students were approached by a researcher in common areas and asked to participate in the study ( $n = 544$ ). These participants received a chocolate bar or entered a prize draw for gift cards. The first-year psychology subject research pool was also accessed for recruitment of participants, whereby psychology students applied for participation in the study, and completed an online version of the survey ( $n = 163$ , 23%). Upon completion of the survey, these participants received partial psychology course credit (0.5% credit for the course). Independent-samples *t*-tests revealed no significant differences in any variable of interest based on recruitment strategy ( $p$ 's ranged from .06 to .99).

## Measures

### *Emotional maladjustment*

The 10-item Centre for Epidemiologic Studies for Depression Scale – Short form (Radloff, 1977) and the 20-item trait composite of the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970) were used to assess depressive (e.g., 'I felt lonely') and anxiety symptoms (e.g., 'I felt nervous and restless'), respectively. Participants rated each statement from 1 (rarely or none of the time – less than one day) to 4 (most or all of the time – 5 to 7 days). Averaging responses created composite scores, with higher scores

indicating greater depressive or anxiety symptoms. Cronbach's  $\alpha$ s were .83 and .92 for depressive and anxiety symptoms, respectively.

#### *Coping responses to interpersonal stress*

The Reactions to Implied Rejection Scale: University Student Version (Zimmer-Gembeck & Nesdale, 2013) measured participants' anticipated responses to interpersonal rejection. Participants are presented with three scenarios (e.g., 'You hear that someone you know is throwing a big birthday party on the beach. Most of your group of friends expect to go. You hear that some of your friends have received their invitations and are excited about the event. You still have not received your invitation and the party is not far off. How would you feel?'), which are then followed up by seven items assessing responses of social withdrawal, retribution, distraction, and rumination. Participants responded to items on a scale from 1 (strongly disagree) to 5 (strongly agree). Averaging the respective items across the three scenarios formed total scores for withdrawal, retribution, distraction, and rumination, with higher scores representing more agreement. Cronbach's  $\alpha$ s were .88, .85, .70, and .81 for withdrawal, retribution, distraction, and rumination, respectively.

#### *Friendship closeness*

Three subscales from the Network of Relationships Inventory: Behavioural Systems Version (Furman & Buhrmester, 2009) were used to assess the degree to which participants perceived closeness in their best friendship. Nine items assessed (1) seeking a safe haven (e.g., 'How much do you seek out this person when you're upset?'); (2) seeking a secure base (e.g., 'How much does this person show support for your activities?'); and (3) companionship (e.g., 'How much do you and this person spend free time together?'). Participants responded to each item on a 5-point scale from 1 (little or none) to 5 (the most), whereby a total closeness score was created by averaging items so that higher scores reflect greater perceived closeness. Cronbach's  $\alpha$  was .90.

#### *Attachment anxiety and avoidance*

The Experiences in Close Relationships – Revised General Short Form (Wilkinson, 2011) was used to assess general relationship attachment anxiety and avoidance orientations. Ten items tapped anxious attachment (e.g., 'My desire to be close sometimes scares people away'), and 10 items tapped avoidant attachment (e.g., 'I find it difficult to allow myself to depend on other people'). Participants responded to items from 1 (strongly disagree) to 5 (strongly agree), with scores averaged to create composite scores; higher scores reflected more attachment anxiety or avoidance. Cronbach's  $\alpha$ s were .89 and .95 for attachment anxiety and avoidance, respectively.

#### *Emotion regulation strategies*

The Emotion Regulation Inventory (Roth, Assor, Niemiec, Ryan, & Deci, 2009) was used to assess the dysregulation (e.g., 'Usually, if I get a feeling of sadness, it paralyses me') and suppression (e.g., 'Usually, I ignore my fears') of fearful and sad emotions. Participants responded on a 5-point scale from 1 (strongly disagree) to 5 (strongly agree); averaging items reflected more dysregulation or suppression. Cronbach's  $\alpha$ s were .87 and .91 for emotion dysregulation and suppression, respectively.

## Results

### **Descriptive information**

Descriptive statistics for all unstandardized measures and correlations between measures are reported in Table 2. These findings were in the expected directions and consistent with findings of previous studies (Brenning & Braet, 2013; Clear *et al.*, 2019; Gardner & Zimmer-Gembeck, 2018). More specifically, the correlations showed that attachment avoidance and anxiety were positively inter-related and associated with higher emotion dysregulation, suppression, withdrawal, rumination, depressive, and anxious symptoms, but lower friendship closeness. Attachment avoidance was also negatively related to distraction, and attachment anxiety was positively related to retribution. Emotion dysregulation and suppression were associated with higher social withdrawal, depressive, and anxious symptoms. Dysregulation was also positively associated with rumination and retribution, and suppression was negatively associated with distraction. Finally, higher withdrawal, rumination, and retribution, but lower distraction and friendship closeness, were associated with higher depressive and anxious symptoms.

### **Cluster analysis**

Attachment and emotion regulation scores were subjected to cluster analysis, using recommendations for best practice in cluster analysis (Gore, 2000). Prior to using a 2-step clustering procedure, the data file was ordered randomly. Standardized *z*-scores were computed for the measures of attachment and ER strategies and were entered into the data-driven cluster analysis. The first step was to conduct a hierarchical cluster analysis using Ward's method of squared Euclidian distances. Evaluation of Schwarz's Bayesian criterion (BIC) indicated a 7-group cluster as the best fit (BIC for 6 clusters = 1,294.86, for 7 clusters = 1,286.01, and for 8 clusters = 1,294.93). Yet, the BIC change was small after 5 clusters. Thus, in the second step, we conducted an iterative *k*-means clustering procedure specifying 5, 6, or 7 clusters. These cluster groups were compared for theoretical meaningfulness, parsimony, and explanatory power (Milligan & Cooper, 1985). A 5-cluster solution was accepted, as the 6-cluster and 7-cluster solutions, although producing good-sized clusters (~80 to 100 in each), generated additional clusters with only slight variations on a similar cluster.

### **Cluster groups and their differences**

Generally consistent with Hypothesis 1, the five clusters are graphically shown in Figure 1. Also, the five clusters were compared on attachment and ER measures using one-way ANOVAs with pairwise comparisons (see Table 3). As seen in Figure 1, the *secure regulated* group ( $n = 127$ ) had below-average scores on both attachment dimensions and ER strategies. At the opposite end was a *disorganized unregulated* group ( $n = 140$ ) who was high in attachment avoidance, and above average in attachment anxiety, dysregulation, and suppression. These groups differed on all clustering measures (see Table 3).

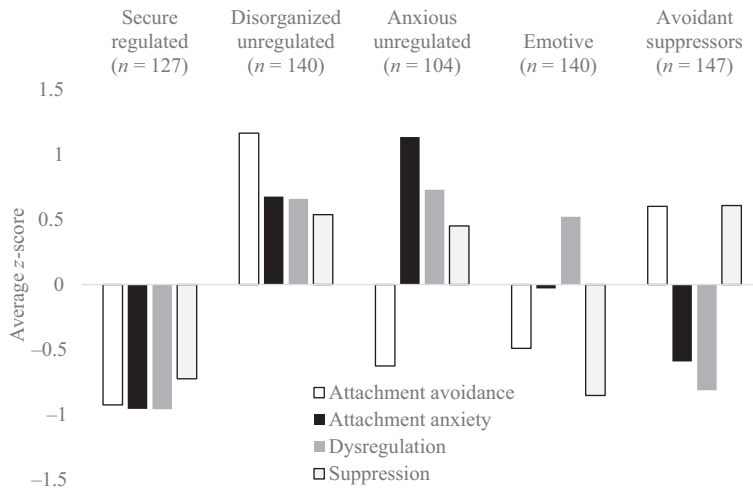
Three other clusters were also found (see Figure 1 and Table 3). The first of these was labelled *anxious unregulated* ( $n = 104$ ). Individuals in this cluster reported a significantly higher average level attachment anxiety relative to other groups, were highly dysregulated and suppressing of emotion, but were below average in attachment

**Table 2.** Means, SDs, and zero-order correlations between all measures (N = 658)

Measure	M (SD)	1	2	3	4	5	6	7	8	9	10	11
1. Attachment avoidance	3.11 (0.94)	—										
2. Attachment anxiety	2.82 (0.85)	.18**	—									
3. Emotion dysregulation	2.96 (0.94)	.11**	.57**	—								
4. Emotion suppression	3.73 (1.05)	.43**	.19**	.02	—							
5. Social withdrawal	2.93 (0.85)	.22**	.41**	.34**	.13**	—						
6. Rumination	3.33 (1.03)	.10*	.44**	.35**	.04	.51**	—					
7. Distraction	3.13 (0.90)	-.20**	-.02	-.08	-.09*	-.23**	-.09*	—				
8. Retribution	2.13 (0.77)	.05	.23**	.14**	.04	.26**	.29**	.09*	—			
9. Friendship closeness	3.36 (0.87)	-.17**	-.09*	-.03	-.08	-.15**	.04	.25**	.02	—		
10. Depressive symptoms	1.97 (0.59)	.26**	.52**	.48**	.17**	.34**	.30**	-.09*	.16**	-.09*	—	
11. Anxiety symptoms	2.10 (0.58)	.29**	.57**	.53**	.16**	.39**	.38**	-.16**	.14**	-.10*	.85**	—

Note. \*p < .05.; \*\*p < .01.





**Figure 1.** Cluster profiles of avoidant and anxious attachment, and emotion regulation ( $N = 658$ ).

avoidance. This cluster generally conformed to the hypothesized hyperactivating profile (Hypothesis 1), but the cluster was higher in suppression than anticipated. A fourth cluster, labelled *emotive* ( $n = 140$ ), was well below average in attachment anxiety and avoidance but still reported high emotion dysregulation and below-average suppression. Finally, the fifth cluster was labelled *avoidant suppressors* ( $n = 147$ ), which included individuals who reported the second highest level of avoidant attachment and high suppression; yet, was below average in attachment anxiety and emotion dysregulation. This cluster was consistent with the deactivating profile that was hypothesized.

### Sex, age, and other demographics within and between clusters

Overall, 17% ( $n = 74$ ) of women were secure regulated, whereas 24% ( $n = 103$ ) were disorganized unregulated, 16% ( $n = 67$ ) were anxious unregulated, 25% ( $n = 108$ ) were emotive, and 18% ( $n = 79$ ) were avoidant suppressors. For men, 23% ( $n = 53$ ) were secure regulated, 16% ( $n = 37$ ) were disorganized unregulated, 16% ( $n = 37$ ) were anxious unregulated, 14% ( $n = 32$ ) were emotive, and 30% ( $n = 68$ ) were avoidant suppressors. As hypothesized (Hypothesis 3), these sex distributions significantly differed across the clusters,  $\chi^2(4, N = 658) = 24.42, p < .001$ . A higher percentage of young women fell into the disorganized unregulated and emotive clusters (24% and 25% of women, respectively), whereas young men were more likely to fall into the secure regulated and avoidant suppressors clusters (23% and 30% of men, respectively).

Of note, age slightly differed between clusters,  $F(4, 653) = 3.80, p < .01$ . In particular, participants in the anxious unregulated ( $M = 19.3, SD = 2.5$ ) cluster were slightly younger than those in the secure regulated ( $M = 20.4$  years,  $SD = 2.7$ ) cluster, whereas the disorganized unregulated ( $M = 19.6$  years,  $SD = 2.6$ ), avoidant suppressor ( $M = 19.8$  years,  $SD = 2.9$ ), and emotive ( $M = 20.2$  years,  $SD = 2.6$ ) clusters fell in-between but did not differ from either extremes. There were no cluster differences in ethnic composition (white vs. other),  $\chi^2(4, N = 658) = 3.94, p = .414$ , or in student status (Aus/NZ vs. other),  $\chi^2(4, N = 658) = 1.70, p = .790$ .

**Table 3.** Descriptive statistics and comparisons of standardized scores of cluster groups ( $N = 658$ )

	Secure regulated, $n = 127$ (19%)	Disorganized unregulated, $n = 140$ (21%)	Anxious unregulated, $n = 104$ (16%)	Emotive, $n = 140$ (21%)	Avoidant suppressors, $n = 147$ (22%)	$F(4, 653)$	$\eta^2$
Attachment avoidance	-0.93 (0.58) <sup>d</sup>	1.16 (0.49) <sup>a</sup>	-0.63 (0.59) <sup>c</sup>	-0.49 (0.68) <sup>c</sup>	0.60 (0.60) <sup>b</sup>	302.45*	.66
Attachment anxiety	-0.96 (0.64) <sup>e</sup>	0.68 (0.74) <sup>b</sup>	1.14 (0.61) <sup>a</sup>	-0.03 (0.65) <sup>d</sup>	-0.59 (0.68) <sup>c</sup>	205.59*	.57
Dysregulation	-0.96 (0.62) <sup>b</sup>	0.66 (0.68) <sup>a</sup>	0.73 (0.77) <sup>a</sup>	0.52 (0.64) <sup>a</sup>	-0.81 (0.63) <sup>b</sup>	208.36*	.57
Suppression	-0.73 (0.87) <sup>b</sup>	0.54 (0.84) <sup>a</sup>	0.45 (0.72) <sup>a</sup>	-0.85 (0.62) <sup>b</sup>	0.61 (0.71) <sup>a</sup>	124.90*	.42

Note. Values with the same superscripts did not differ from each other. <sup>a</sup>Highest value across clusters, <sup>b</sup>Next highest, etc.

\* $p < .001$ .

### Cluster differences in coping, support, and symptoms

#### Coping

As can be seen in Table 4, ANOVAs with Bonferroni pairwise comparisons were used to compare anticipated ways of coping with interpersonal rejection between clusters and participant sex. These analyses revealed cluster differences in reported withdrawal, rumination, distraction, and retribution, and sex differences in withdrawal, rumination, and retribution. There were no significant cluster  $\times$  sex interactions.

For withdrawal, individuals in two clusters, disorganized unregulated and anxious unregulated, anticipated the most use of withdrawal and these groups did not differ from each other. In contrast, the secure cluster reported the least social withdrawal in response to rejection by others. The emotive and avoidant suppressor clusters fell in-between these two but were not significantly different from each other. Young women tended to report more withdrawal than young men. For rumination, the disorganized unregulated, anxious unregulated, and emotive clusters all reported more rumination than the secure regulated and avoidant suppressor groups, which did not differ from each other. Young women, relative to young men, reported they would use more rumination in response to rejection.

For distraction, the disorganized unregulated group used less distraction coping than all the other groups, which did not significantly differ from each other. Finally, the anxious unregulated cluster used the greatest use of retribution coping, but this was only significantly higher than that reported of the secure regulated and avoidant suppressor clusters. Those in the secure regulated cluster reported the least use of retribution when compared to all other clusters. Young men tended to report they would seek more retribution than young women.

#### Friendship closeness and symptoms

Table 5 reports the results of ANOVAs with Bonferroni pairwise comparisons used to compare friendship closeness and emotional maladjustment by cluster and sex. Significant cluster and sex effects, as well as a significant cluster  $\times$  sex interaction, were found for friendship closeness. As seen in Table 5, clusters differed in friendship closeness only for young women. Women in the disorganized unregulated cluster reported the least closeness, whereas the secure regulated, anxious unregulated, and emotive clusters

**Table 4.** Descriptive statistics and comparisons of coping between cluster groups (N = 658)

	Mean					ANOVA results			
	Secure regulated, n = 127 (19%)	Disorganized unregulated, n = 140 (21%)	Anxious unregulated, n = 104 (16%)	Emotive, n = 140 (21%)	Avoidant suppressors, n = 147 (22%)	Cluster, F(4, 648)	Sex, F(1, 648)	Cluster × sex, F(4, 648)	Cluster (sex) $\eta^2$
Withdrawal	2.53 (0.78) <sup>c</sup>	3.36 (0.79) <sup>a</sup>	3.24 (0.74) <sup>a</sup>	2.91 (0.85) <sup>b</sup>	2.67 (0.79) <sup>b</sup>				
Men	2.35 (0.74)	3.11 (0.71)	3.18 (0.73)	2.75 (0.68)	2.68 (0.84)	21.14**	7.65**	1.12	.13 (.01)
Women	2.65 (0.79)	3.45 (0.80)	3.27 (0.75)	2.96 (0.89)	2.66 (0.76)				
Rumination	2.91 (1.10) <sup>b</sup>	3.67 (0.90) <sup>a</sup>	3.67 (0.89) <sup>a</sup>	3.58 (0.84) <sup>a</sup>	2.90 (0.98) <sup>b</sup>				
Men	2.50 (1.03)	3.64 (0.94)	3.47 (0.74)	3.18 (0.92)	2.82 (0.95)	20.57**	19.06**	2.28	.12 (.03)
Women	3.20 (1.06)	3.71 (0.89)	3.78 (0.94)	3.69 (0.92)	2.97 (1.00)				
Distraction	3.27 (0.85) <sup>a</sup>	2.87 (0.93) <sup>b</sup>	3.29 (0.90) <sup>a</sup>	3.17 (0.82) <sup>a</sup>	3.10 (0.94) <sup>a</sup>	3.36*	1.34	0.66	.03 (.00)
Men	3.35 (0.82)	2.85 (0.96)	3.29 (0.93)	3.20 (0.85)	3.19 (0.98)				
Women	3.14 (0.89)	2.94 (0.85)	3.31 (0.85)	3.07 (0.70)	3.00 (0.87)				
Retribution	1.89 (0.67) <sup>c</sup>	2.18 (0.83) <sup>a,b</sup>	2.36 (0.75) <sup>a</sup>	2.16 (0.75) <sup>a,b</sup>	2.10 (0.78) <sup>b</sup>				
Men	1.97 (0.66)	2.61 (0.89)	2.65 (0.65)	2.48 (0.79)	2.36 (0.80)	8.64**	45.14**	1.63	.06 (.07)
Women	1.84 (0.67)	2.03 (0.75)	2.20 (0.75)	2.06 (0.71)	1.87 (0.68)				

Note. Values with the same superscripts did not differ from each other. <sup>a</sup>Highest value across clusters, <sup>b</sup>Next highest, etc.

\* $p < .05$ ; \*\* $p < .001$ .

**Table 5.** Descriptive statistics and comparisons of friendship closeness and symptoms between cluster groups (N = 658)

	Mean				ANOVA results				
	Secure regulated, n = 127 (19%)	Disorganized unregulated, n = 140 (21%)	Anxious unregulated, n = 104 (16%)	Emotive, n = 140 (21%)	Avoidant suppressors, n = 147 (22%)	Cluster, F(4, 648)	Sex, F(1, 648)	Cluster × sex, F(4, 648)	Cluster (sex) η <sup>2</sup>
Closeness	3.49 (0.81)	3.11 (0.93)	3.39 (0.90)	3.54 (0.82)	3.27 (0.84)				
Men	3.10 (0.81) <sup>a</sup>	3.14 (0.83) <sup>a</sup>	3.12 (0.93) <sup>a</sup>	3.13 (0.74) <sup>a</sup>	3.11 (0.68) <sup>a</sup>	2.51*	27.80**	3.03*	.02 (.04)
Women	3.78 (0.68) <sup>a</sup>	3.10 (0.97) <sup>b</sup>	3.53 (0.86) <sup>a</sup>	3.66 (0.81) <sup>a</sup>	3.40 (0.93) <sup>a,b</sup>				
Depression	1.58 (0.39) <sup>d</sup>	2.34 (0.62) <sup>a</sup>	2.22 (0.58) <sup>a</sup>	1.95 (0.53) <sup>b</sup>	1.79 (0.45) <sup>c</sup>				
Men	1.57 (0.36)	2.30 (0.64)	2.17 (0.56)	1.97 (0.58)	1.76 (0.47)	39.58**	0.64	0.20	.21 (.00)
Women	1.58 (0.41)	2.35 (0.61)	2.25 (0.59)	1.94 (0.51)	1.82 (0.43)				
Anxiety	1.67 (0.43) <sup>e</sup>	2.54 (0.56) <sup>a</sup>	2.35 (0.53) <sup>b</sup>	2.01 (0.49) <sup>c</sup>	1.90 (0.44) <sup>d</sup>				
Men	1.64 (0.42)	2.45 (0.51)	2.32 (0.45)	2.03 (0.48)	1.87 (0.47)	54.72**	2.45	0.14	.26 (.00)
Women	1.69 (0.44)	2.57 (0.57)	2.37 (0.57)	2.07 (0.50)	1.92 (0.42)				

Note. Values with the same superscripts did not differ from each other. <sup>a</sup>Highest value across clusters, <sup>b</sup>Next highest, etc. Pairwise differences were also indicated for men and women for peer support, given the significant cluster × sex interaction, η<sup>2</sup> = .02. \*p < .05.; \*\*p < .001.

reported the highest friendship closeness. Avoidant suppressors fell in-between, not differing from either the disorganized unregulated cluster or the three clusters highest in friendship closeness.

The disorganized unregulated and anxious unregulated clusters reported the most depressive symptoms. The secure regulated cluster reported the least symptoms, whereas the emotive and avoidant suppressor clusters fell in-between. When anxiety symptoms were compared, all clusters differed from each other, starting with the highest level in the disorganized unregulated cluster, followed by the anxious unregulated, emotive, and avoidant suppressors; all significantly different from each other. Finally, individuals in the secure regulated cluster reported significantly fewer anxiety symptoms than all other clusters.

## Discussion

Guided by more contemporary work in attachment theory and ER (Allen & Miga, 2010; Dawson *et al.*, 2014; Zimmermann, 1999), we utilized a person-oriented approach to examine interrelations between attachment representations *and* ER processes. A 5-class solution was supported, which included groups that were labelled as secure regulated, emotive, avoidant suppressor, anxious unregulated, and disorganized unregulated. These clusters largely conformed to our four hypothesized clusters, but also added a fifth emotive cluster that was not specifically predicted. In addition, the profile of the anxious unregulated cluster was not exactly as predicted as this cluster was not only high in reported anxious attachment and emotion dysregulation but also reported higher than average suppression.

Furthermore, as hypothesized, and consistent with past research (Dawson *et al.*, 2014; Mikulincer, & Shaver, 2019; Mikulincer *et al.*, 2003; Seiffge-Krenke & Beyers, 2005; Zimmermann, 1999), we generally found that individuals who had a secure regulated profile reported the most positive functioning, whereas individuals who fell within the disorganized unregulated profile reported the poorest functioning. We also found that sex was important to consider in the analyses. Overall, the findings from the current study provided a more nuanced understanding of the interplay of emerging adults' internal working models, processes of regulating threat (i.e., regulating negative emotions), and their combined impact on socio-emotional functioning. We consider these results within the broader context of attachment and developmental theory by expanding on four key findings that have significant implications for adjustment during emerging adulthood.

### **Overall well-being and maladjustment**

Firstly, our findings identified profiles characterized by security and regulation opposed to those characterized by insecurity and poorer ER, with each of the unregulated profiles displaying uniquely different ways of coping with interpersonal threat, emotional maladjustment, and friendship closeness. As hypothesized, the secure regulated cluster reported far below-average anxious and avoidant attachment, as well as below-average emotion dysregulation and suppression. While the remaining clusters differed in the various combinations of attachment representation and ER processes, the cluster that appeared to be facing the most socio-emotional challenges to their well-being was the disorganized unregulated profile, characterized by well-above-average scores on avoidant attachment, and above-average scores on anxious attachment, dysregulation, and

suppression. This pattern of findings clearly indicates that a higher sense of security in one's attachment working model paired with lower reported experience of emotion dysregulation and use of suppression are important correlates for overall well-being (Mikulincer & Shaver, 2019; Seiffge-Krenke & Beyers, 2005; Zimmer-Gembeck *et al.*, 2017). However, as indicated by the lack of differences in the use of distraction among individuals in the secure regulated cluster relative to most other clusters, secure regulated individuals may not differ in their report of adaptive coping, relative to other groups, but differ significantly with regard to how they process threatening information and the frequency in maladaptively responding to this threat. It may therefore be that individuals lowest in anxious and avoidant attachment (who presumably have more comforting symbolic representations of care and safety) at the same time that they are able to regulate their emotions and minimize the use of suppression are those who are most capable of avoiding excessive maladaptive responses to coping with interpersonal threats (Bowlby, 1980; Cassidy, 2008; Mayseless & Scharf, 2007; Zimmermann, 1999).

Our findings also support the converse to be true, that more elevated attachment insecurities coupled with greater maladaptive ER responses appear to be a significant risk factor for poorer overall functioning (Brenning & Braet, 2013; Clear *et al.*, 2019; Gardner & Zimmer-Gembeck, 2018; Mikulincer & Shaver, 2019; Zimmer-Gembeck *et al.*, 2017). Both the correlational and person-centred approaches provide further empirical support that insecure internal working models are significant correlates of more maladaptive coping responses, perceiving less support from others, and greater emotional maladjustment. Each of the unregulated groups identified here reported significantly poorer functioning when compared to the secure regulated group, the most evident of which were findings related to withdrawal, retribution, and emotional maladjustment. It may then be that all unregulated groups would benefit from avoiding thoughts of retribution, withdrawing less from experiences perceived as threatening, and being better able to manage sad or anxiety-provoking situations. However, as indicated by attachment theorists on ER (Mikulincer & Shaver, 2019; Mikulincer *et al.*, 2003), insecurely attached individuals become increasingly distressed upon the perceived unavailability of either an internalized or externalized attachment figure. Therefore, unlike the secure regulated cluster, individuals that were included in the unregulated clusters may have more difficulty accessing safety, become increasingly distressed because of this difficulty, and report that they are more likely to emotionally respond to threatening situations in more maladaptive ways.

### ***Is avoidance and suppression protective for emerging adults?***

Secondly, the pattern of differences between the avoidant suppressor cluster and other clusters showed that avoidant suppressors reported the most adaptive functioning, second to that of the secure regulated group. While previous research has demonstrated similar findings in that those higher in attachment avoidance may demonstrate similar, if not slightly worse outcomes, to that of securely attached individuals (Zimmer-Gembeck *et al.*, 2017), this reveals a novel finding about the roles that avoidance and emotion suppression may play in aiding regulation in the face of stressful experiences. For example, while some studies have reported that emotion suppression is associated with more negative outcomes (Brenning & Braet, 2013; Gardner & Zimmer-Gembeck, 2018; Mikulincer *et al.*, 2003), additional research on coping flexibility indicates there may be some functional and maybe even adaptive purpose for suppressing emotions in threatening contexts (Bonanno, Papa, Lalande, Westphal, & Coifman, 2004). It may be

then that in order to self-regulate emotional distress during stressful experiences, avoidant suppressors are able to successfully minimize their distress to maintain focus or complete the task at hand. While adaptive in the short term, however, rigidly continuing this strategy over time and across various contexts may be what results in avoidant suppressors experiencing more long-term negative outcomes that interfere with interpersonal functioning (Cassidy, 2008; Dawson *et al.*, 2014; Mikulincer *et al.*, 2003). Replicating these findings, utilizing the same person-centred approach over time, would then be helpful to further test whether the outcomes for the avoidant suppressor groups demonstrate a similar trend or become worse over time.

### **Heightened emotional reactivity as an indication of risk**

The third key finding was the identification of the emotive cluster. This cluster was not hypothesized and was defined by high reported levels of emotion dysregulation but below-average scores on attachment avoidance, anxiety, and suppression. This finding suggests that a substantial proportion of emerging adults (21% of participants in this study) may experience or report heightened emotionality in response to the everyday stressful experiences that occur during this developmental period. This is consistent with developmental research that describes adolescence and emerging adulthood as a time of heightened emotionality, with the most vulnerable of youth experiencing the onset of affective disorders if they are unable to regulate (or co-regulate with parents and peers) their intense emotional experiences (Allen & Miga, 2010; Brewer *et al.*, 2016; Turpyn *et al.*, 2015; Zalewski *et al.*, 2011; Zimmer-Gembeck, 2015). What was most problematic for this group was the use of rumination in response to the rejection vignettes (where they were similarly high as compared to the disorganized unregulated and anxious unregulated groups). Thus, those young people who experience high levels of emotionality and ruminate more severely on their experiences may demonstrate the greatest reactivity to interpersonal stress, in turn placing them at greatest risk of emotional difficulties (Rudolph, 2002; Turpyn *et al.*, 2015; Zalewski *et al.*, 2011; Zimmer-Gembeck, 2015). This finding therefore indicates that while transitional difficulties may not trigger attachment insecurities, they may still provide significant risk for those emerging adults who are more emotionally reactive to these experiences.

### **Sex differences in clusters and outcomes**

Finally, the study revealed significant sex differences in the clusters of attachment and ER, the maladaptive responses to rejection vignettes, as well as the interactions between these clusters and friendship closeness. A higher proportion of young women were in the disorganized unregulated and emotive clusters, with more young men in the secure regulated and avoidant suppressor clusters. Moreover, young women reported more social withdrawal and rumination, as well as greater friendship closeness, whereas young men reported more retribution. These findings support, but also extend, previous research findings suggesting more emotionality and hyperactivating strategies in response to interpersonal stress in young women and more suppression and deactivating strategies in young men (Gardner & Zimmer-Gembeck, 2018; Rudolph, 2002; Turpyn *et al.*, 2015; Zimmer-Gembeck, 2015). Previous research has pointed to several explanations to account for such sex differences, including different socialization patterns to regulate emotional experiences, women's greater investment (and thus greater distress) in interpersonal experiences, a greater tendency to attribute poorer interpersonal

experiences to some perceived deficit, and more negative appraisals in the coping process among young women (Brenning & Braet, 2013; Rudolph, 2002; Turpyn *et al.*, 2015; Zimmer-Gembeck, 2015). Furthermore, while this was the only sex  $\times$  cluster effect found, it does demonstrate that (relative to mean-level differences between men and women) women in the disorganized unregulated and anxious suppressor clusters also reported the least friendship closeness relative to the other groups. This indicates more heightened difficulties with these groups of women as they may have difficulties personally coping with stressful experiences, but also difficulties accessing the support from significant others which may aid in the overall coping progress. Thus, future research, prevention, and intervention programmes should prioritize considering these sex differences, given young women's heightened vulnerability in response to stressful events.

### **Limitations, future research directions, implications, and conclusion**

Despite the novelty of the findings, there are several limitations that could be used to guide future research. Firstly, all data were self-report, making it possible that shared-method variance could have resulted in stronger associations, especially since there could be statistical and conceptual overlap between the measures used to assess attachment, ER, and emotional maladjustment. Secondly, the cross-sectional design did not allow conclusions about how these associations may change over time. Future research emphasizing a longitudinal design is best suited to examine these differences between profiles over time. Additionally, future research may also want to take into consideration other coping responses relevant to attachment theory, such as support-seeking; perceived stress among participants; and romantic relationships functioning, given the salience of romance to individuals during emerging adulthood. Finally, given our Australian university student participants, the findings of our study may not be generalizable to emerging adults who do not attend university or live in other cultural contexts.

However, important implications follow for the continued study of attachment and ER in adolescence and beyond. Contemporary attachment theorists (Allen & Miga, 2010; Zimmermann, 1999) have argued that as youth become older, one of the central purposes of the internal working model is to identify threat and initiate regulatory behaviour to protect against such threat. Considering this conceptual framework, studying attachment and ER processes requires understanding the interplay of how individuals differ in both attachment representations and ER processes as demonstrated through the person-centred analyses utilized here. The findings also point to the importance of considering the joint influences of attachment and ER in adolescents and young adults demonstrating difficulties in their coping and mental health. Prevention and intervention efforts may also benefit from an attachment-informed assessment so that instead of broadly teaching adaptive coping and ER skills, those working with young people experiencing socio-emotional difficulties can better equip young people with skills aligned to their particular profile of difficulties.

Future studies should therefore continue to utilize a person-centred approach to better identify individual differences in attachment *and* ER and their combined impact on socio-emotional functioning, given that our findings revealed novel ways in which emerging adults may perceive, interpret, and respond to threatening situational and emotional demands. Future research is certainly warranted to extend these findings by acknowledging (and empirically testing) that as youth develop into adolescence and emerging adulthood, the joint combination of one's attachment representations and ER processes



may provide richer information with regard to how individuals cope with emotional experiences across development.

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## Conflicts of interest

All authors declare no conflict of interest.

## Author contributions

Alex A. Gardner: Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Writing – original draft, Writing – review & editing; Melanie J. Zimmer-Gembeck: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Resources, Supervision, Validation, Writing – original draft, Writing – review & editing; Shawna M. Campbell: Methodology, Validation, Writing – original draft, Writing – review & editing.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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