



FlashReport

Self-regulatory depletion and attachment avoidance: Increasing the accessibility of negative attachment-related memories[☆]Jamie L. Kohn^{*,1}, W. Steven Rholes, Brandon J. Schmeichel*Department of Psychology, Texas A&M University, College Station, TX 77843-4235, USA*

ARTICLE INFO

Article history:

Received 24 May 2011

Revised 21 June 2011

Available online 6 July 2011

Keywords:

Attachment

Self-regulation

Memory retrieval

Ego depletion

Defense

ABSTRACT

Bowlby (1980) theorized that insecurely attached people use defensive memory suppression to cope with adverse events involving childhood attachment figures. In this study, defensive memory suppression was conceptualized as a form of self-regulation that, like other types of self-regulation, requires limited resources and may be undermined by the prior exercise of self-regulation. The findings of the study showed that, in the absence of self-regulatory depletion, memories of negative experiences with attachment figures were less accessible among persons who reported more dismissing avoidance. Under self-regulatory depletion, however, accessibility increased among persons high in dismissing avoidance. Depletion of self-regulatory capacity did not moderate memory accessibility for secure, preoccupied, or fearful avoidant attachment. The results imply that dismissing avoidant persons devote their limited self-regulatory resources to suppressing negative memories and keeping their attachment systems deactivated.

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Introduction

According to attachment theory (Bowlby, 1973), experiences with attachment figures during infancy, childhood, and adolescence give rise to attachment styles that shape close relationships in adulthood. Attachment styles develop partly as a result of how attachment figures respond to needs for care and support in times of distress (Ainsworth, Blehar, Waters, & Wall, 1978). The present study focused on adults whose experiences of rejection have resulted in an avoidant attachment style.

To prevent new experiences of rejection and reminders of past rejection, avoidant adults seek to keep their attachment systems deactivated (Bowlby, 1973, 1980). To do so, they maintain psychological distance from relationship partners and minimize the importance of close relationships. They also seek to suppress attachment-related thoughts and memories that might activate the system (Mikulincer & Shaver, 2007). In fact, studies of attachment and thought suppression have found suppression to be effective in deactivating the attachment system for avoidant persons. Fraley and Shaver (1997), for example, observed that dismissing avoidant individuals were better able to suppress thoughts about abandonment

than individuals with other attachment styles. Further, attempts to suppress resulted in decreased physiological arousal among dismissing avoidant individuals. Mikulincer, Dolev, and Shaver (2004), however, observed that imposing a cognitive load reduces the capacity of avoidant persons to suppress, suggesting that thought suppression by avoidant persons is an effortful process.

In studies of attachment and memory, researchers have distinguished between two strategies that avoidant individuals may use to suppress emotional and attachment-related experiences: preemptive defenses, which limit initial information encoding, and postemptive defenses, which suppress the accessibility of previously encoded memories. In two preemptive memory studies, participants listened to an interview in which the interviewee discussed attachment-related issues (Fraley & Brumbaugh, 2007; Fraley, Garner, & Shaver, 2000). In both studies more avoidant persons recalled less of what they had heard, consistent with the use of preemptive defenses in encoding attachment-related information.

In the present study, we investigated postemptive defenses in the retrieval of childhood memories with attachment figures. Bowlby (1980) argued that postemptive suppression of memories of adverse experiences with parental attachment figures is an important coping mechanism for individuals with avoidant attachment styles. However, little evidence in the attachment literature exists to support this assertion.

We conceptualized postemptive memory suppression as a form of self-regulation that, like other forms of self-regulation (Muraven & Baumeister, 2000), requires limited inner resources that can be depleted by the prior exercise of self-control. We asked participants to recall childhood experiences with parents that were associated with

[☆] Portions of this research were presented at 11th annual meeting of the Society for Personality and Social Psychology, Las Vegas, NV, January 2010.

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Table 1
Means, standard deviations, and correlations for memory latencies and attachment dimensions.

Variable	<i>M</i> (<i>SD</i>)	Correlations						
		1	2	3	4	5	6	7
<i>Memory type</i>								
1. Anger	18.64 (17.32)	—						
2. Sadness	12.50 (15.18)	.46***	—					
3. Anxiety	13.35 (13.80)	.31***	.42***	—				
4. Happiness	11.19 (14.26)	.42***	.41***	.29***	—			
<i>Attachment dimension</i>								
5. Secure	4.65 (1.73)	-.12	-.05	-.19*	-.08	—		
6. Preoccupied	2.66 (1.63)	-.03	.03	-.02	.05	-.06	—	
7. Fearful avoidant	3.79 (1.96)	.05	.02	.05	.02	-.48***	-.09	—
8. Dismissing avoidant	3.79 (1.62)	.08	.04	.04	-.002	-.10	-.41***	.09

Note. Means and standard deviations for reaction times are for raw (untransformed) values, measured in seconds. Correlations were tested using log-transformed reaction times. * $p < .05$. *** $p < .001$.

positive or negative affect. We hypothesized that, under normal conditions, defensive suppression would reduce the accessibility of memories involving negative emotional experiences, but only for individuals who reported more dismissing avoidant attachment. We did not expect memory accessibility to be associated with secure, preoccupied (anxious), or fearful avoidant attachment. We focused our hypothesis on individuals high in dismissing avoidance because of their strong capacity for thought suppression (Fraley & Shaver, 1997) and because their extreme detachment from attachment needs suggests a higher level of defensiveness (Bartholomew & Horowitz, 1991). We further hypothesized that, under conditions of self-regulatory depletion, highly dismissing persons would recall negative experiences more quickly due to a temporary inability to suppress attachment-related memories.

To test our hypothesis, we investigated recall latencies under two conditions, one in which participants completed an effortful (i.e., depleting) controlled writing task prior to recall and a second in which participants completed a similar but simpler free writing task prior to recall. For individuals reporting more dismissing avoidance, we expected longer retrieval latencies in the free writing condition but shorter latencies for this group in the controlled writing condition. We did not expect the writing manipulation to interact with the secure, preoccupied, and fearful avoidant attachment dimensions because they were not expected to engage in defensive memory suppression. We also expected no differences in latencies between the experimental conditions for the recall of positive memories, as such memories should not be subject to defensive suppression.

Method

Participants

Participants included 163 undergraduate students (69 men, 94 women) enrolled in an introductory psychology course. For their participation, students earned credit toward fulfilling a course requirement. Data were collected from an additional 19 participants who were excluded from analyses for reasons that might distort reaction times. This included not following directions, engaging in distracting behaviors (e.g., checking or using cell phones), or experiencing interruptions during the experiment (e.g., computer malfunctions). Participants were also excluded if they reported that English was not their first language.

Measures and Procedures

To manipulate initial efforts at self-control, we randomly assigned participants to a writing condition (see Schmeichel, 2007). The experimenter told all participants to write about a recent trip they had taken. Participants in the *free writing condition* were instructed simply to “Write a story about a recent trip you have taken. It may be a trip to

the store, to Ohio, or to another country—wherever! Please write until the experimenter asks you to stop.” Participants in the *controlled writing condition* received an additional instruction: “Very important! Please do not use the letters *a* or *n* anywhere in your story.” This group was required to control their writing by avoiding the use of two commonly used letters, whereas the other group wrote freely and without restrictions. The controlled writing task has been observed to deplete limited self-regulatory resources, relative to the free writing task (e.g., Schmeichel & Vohs, 2009). After participants indicated they understood the task, they began writing and were stopped 6 minutes later.

Similar to the memory retrieval task used by Mikulincer and Orbach (1995), participants next were asked to recall memories from their childhood that related to specific emotions. They were instructed to recall experiences that involved their parents that occurred before the participant reached the age of 12. The experimenter told participants that an emotion word would appear on the computer screen. Participants were instructed to press the space bar as soon as they recalled a specific childhood memory involving their parents that was related to the target emotion. Using the DirectRT software (Jarvis, 2004), participants were presented with the instruction to “Think of an early experience associated with ...” After 1000 ms, one of the four target emotion words used in this study (anger, sadness, anxiety, and happiness) appeared below the instruction. The target emotions were presented randomly and only once. As soon as participants pressed the space bar, DirectRT recorded the reaction time in milliseconds. Then they were asked to type a short description of the memory.²

Attachment style was assessed with the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991). The RQ presents four short paragraphs that describe four attachment categories: secure, preoccupied (anxious), fearful avoidant, and dismissing avoidant. Participants chose the style that best described them. Then they rated the extent to which each style described them, on a scale from 1 (*not at all like me*) to 7 (*very much like me*). The present analyses measured attachment with these four continuous items.³

² After retrieving memories related to all four target emotions, participants also rated the intensity of the emotions they felt regarding each experience they recalled. For each memory, participants rated the extent to which they felt 10 different emotions during that experience. The emotions were: shame, fear, disgust, depression, anger, embarrassment, sadness, surprise, anxiety, and happiness. These results are not reported here but are available upon request.

³ The two-dimensional Experiences in Close Relationships scale (Brennan, Clark, & Shaver, 1998) is widely used to measure adult attachment, but we selected the RQ. The RQ has traditionally been used to measure dismissing avoidance directly and to distinguish it from fearful avoidance. However, theorists have identified ways to test prototype-specific hypotheses (e.g., focusing on dismissing avoidance) using the ECR (Fraley & Bonanno, 2004; Fraley et al., 2000). In the future, researchers may consider using the ECR to test hypotheses regarding dismissing avoidance.

Table 2
Unstandardized regression coefficients predicting negative and happy memory latencies.

Predictors	Negative memories		Happy memory	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Intercept	9.212***	0.054	8.934***	0.068
Condition	−0.062	0.054	−0.015	0.068
Secure (S)	−0.072*	0.036	−0.052	0.045
Preoccupied (P)	0.004	0.038	0.029	0.046
Fearful avoidant (FA)	−0.015	0.032	−0.007	0.040
Dismissing avoidant (DA)	0.031	0.038	0.007	0.047
S x Condition	−0.016	0.036	−0.032	0.045
P x Condition	−0.046	0.038	−0.088†	0.046
FA x Condition	0.026	0.032	−0.008	0.040
DA x Condition	−0.080*	0.038	−0.043	0.047

Note. Continuous attachment variables were centered at the mean.

† $p < .10$. * $p < .05$. *** $p < .001$.

Finally, the experimenter debriefed participants to probe for suspicion. No participant showed suspicion about the study or guessed the purpose of the controlled writing task.

Results

The 4 reaction time variables (angry, sad, anxious, and happy memory) were examined for normality violations. All 4 reaction time variables showed a strong positive skew. To correct this, reaction times were log-transformed (Ratcliff, 1993; Robinson, 2007). The transformed variables were then examined for outliers (values more than 3 standard deviations from the mean). One outlier (66 ms) was deleted from the sample. Table 1 presents means, standard deviations, and correlations among the reaction times and attachment dimensions.

Two multiple regression analyses were conducted to test whether attachment and condition predicted memory recall latencies. Models included main effects for all four continuous attachment ratings (secure, preoccupied, fearful avoidant, and dismissing avoidant), the main effect of condition, and four interactions (between condition and each attachment style). First, we used this model to predict recall of negative memories. To do this, we computed a mean for angry, sad, and anxious memory reaction times. Unstandardized regression coefficients are shown in Table 2. Results indicated that individuals recalled negative memories more quickly when they also reported greater attachment security. Consistent with the hypothesis, the interaction between condition and dismissing avoidance was significant (see Fig. 1). For individuals in the free writing (control) condition, higher levels of dismissing avoidance predicted slower recall of negative memories, $b = 0.11$, $SE = 0.053$, $p = .04$. In contrast, when individuals completed the controlled writing (depletion) task, dismissing avoidance did not significantly predict latency to recall negative memories, $b = -0.05$, $SE = 0.055$, $p = .37$.⁴

Second, we investigated whether attachment and condition was also associated with the latency to recall happy memories. As predicted, results showed no significant main effects of attachment style or writing condition and no significant interactions (see Table 2).

Discussion

The goal of this study was to determine whether highly dismissing avoidant individuals limit the accessibility of negative attachment-related memories via postemptive self-regulatory processes. In the free writing (non-depletion) condition, individuals higher in dismiss-

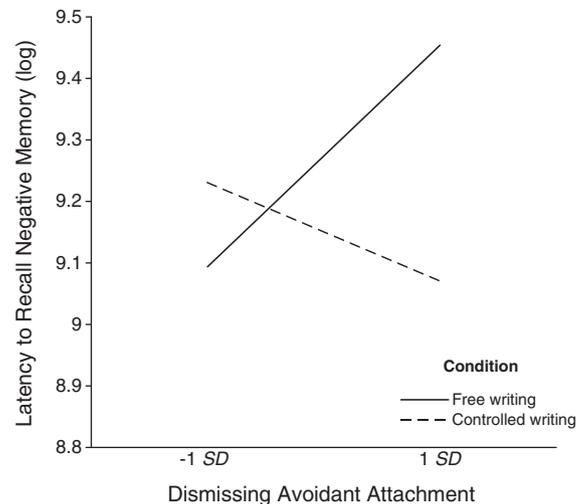


Fig. 1. Latency to recall negative memories, as predicted by dismissing avoidant attachment and writing condition. Recall latencies are log-transformed.

ing avoidance recalled negative experiences more slowly. But in the controlled writing (self-regulatory depletion) condition, negative attachment experiences were recalled equally quickly among individuals high and low in dismissing avoidance. As expected, self-regulatory depletion did not moderate recall times for secure, preoccupied, and fearful avoidant attachment. Further, self-regulatory depletion did not impact the recall of positive memories among any attachment dimension, consistent with the suggestion that such memories do not require defensive suppression. These findings provide novel support for Bowlby's (1980) claim that highly avoidant individuals protect themselves from negative attachment experiences through postemptive defensive suppression.

The present findings are consistent with those of Mikulincer et al. (2004, Study 1) in that both studies show that cognitive depletion affects mental processing for avoidant individuals. Mikulincer et al. (2004) asked participants to suppress or not suppress thoughts about a painful romantic breakup. Then participants performed a Stroop task while under high or low cognitive load. Results indicated that avoidant individuals experienced more Stroop interference from separation-related words under cognitive load, regardless of whether they had previously suppressed such thoughts. The current study differed from Mikulincer et al. (2004) in two ways. First, it found conceptually similar results for memory retrieval rather than thought suppression. Second, it employed different methods to limit cognitive capacities. We used an ego depletion manipulation whereas Mikulincer et al. used a cognitive load manipulation. Ego depletion and cognitive load often have similar effects, but they may operate through different mechanisms (Schmeichel, 2007, 2008). Specifically, the effects of cognitive load are broader than the effects of ego depletion in that load can reduce both attentional resources (so that some stimuli receive minimal processing under load) and the capacity for attention control (so that some stimuli are harder to ignore under load); the effect of ego depletion appears to be limited to the capacity for attention control only. The effect of the depletion manipulation is thus more specific than the effect of cognitive load, which increases confidence that highly dismissing individuals engage effortful attention control mechanisms to reduce the accessibility of attachment-related thoughts.

This study makes two important contributions to the literature. First, it shows that self-regulatory depletion can undermine the underlying defensive mechanisms that suppress painful memories. As such, it suggests that naturalistic conditions that deplete self-regulatory capacity, such as prolonged stress, may lead dismissing avoidant persons to re-experience adverse events that activate the

⁴ Another way to analyze the four RQ prototypes is to combine them into two measures that reflect a model of the self (or, anxious attachment) and a model of others (or, avoidant attachment). We reanalyzed our data using these two dimensions but neither dimension interacted with condition to predict memory recall latencies.

attachment system. Second, the results reveal a distinction between fearful avoidant and dismissing avoidant individuals. Self-regulatory depletion moderated recall as a function of individual differences in dismissing avoidance but not fearful avoidance. Unlike dismissing avoidant participants, fearful avoidant participants either did not attempt to suppress negative memories or were unable to do so.

Dismissing avoidance represents a combination of high avoidance and low attachment anxiety. Fearful avoidance represents a combination of high avoidance and high anxiety. Avoidance and anxiety oppose one another with respect to activation of the attachment system. Avoidance is associated with the suppression of the attachment system, whereas anxiety is associated with hyperactivation of the attachment system (Mikulincer & Shaver, 2007). In previous research, more anxious people have seemed less able to effectively suppress unpleasant thoughts (Fraleley & Shaver, 1997). In fact, they may amplify their negative emotions as a strategy to elicit caregiving from attachment figures (Mikulincer & Shaver, 2007). Thus, highly anxious persons are either less able or less motivated to use defensive strategies such as suppression. For people with a more fearful avoidant attachment style, this non-defensive nature of anxiety may counteract the defensiveness of avoidance, making suppression an untenable strategy.

Suppression of negative memories of attachment-related experiences may be adaptive for dismissing avoidant adults, allowing them to maintain relationships with parents and other attachment figures. Avoidant behavior among infants in the strange situation is considered by some to be adaptive (Main, 1990). It allows the infant to maintain contact with the attachment figure from a safe distance, without antagonizing him or her and incurring additional rejection. However, there also appear to be costs associated with suppression. More avoidant adults tend to be more subject to emotional breakdowns under high levels of stress presumably due to the breakdown of suppressive defenses (Berant, Mikulincer, & Shaver, 2008). In conclusion, the accessibility of affectively negative memories depends on the self-regulatory capacity of highly dismissing persons. When capacity is at or near full strength, such memories are recalled slowly, compared to less dismissing persons. When self-regulatory capacity is depleted, negative memories are recalled more quickly by persons higher in dismissing avoidance. Self-regulatory capacity did not interact with other attachment dimensions (secure, preoccupied, or fearful avoidant). These results suggest that post-emptive defenses help individuals with a more dismissing avoidant attachment style to suppress the retrieval of negative attachment experiences and keep the attachment system deactivated.

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