

Individual Differences, Attentional Control and the Influence of Arousal During Positive Affect

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Abstract

Neuroticism and difficulties in emotional regulation are often associated with negative affect. In the present study we demonstrate that these personality characteristics are also predictive of susceptibility to the attention impairing influence of arousal during positive affect. Participants completed an RSVP attention task while experiencing positive emotion under low and high arousing conditions. The participants also completed self-report measures of attentional control (ACS), difficulty in emotion regulation (DERS), neuroticism (Goldberg), and rumination styles (RSQ). All but the RSQ significantly predicted performance. Participants scoring low on the ACS or highly on the DERS or Goldberg performed more poorly under high arousal. This suggests that for individuals with difficulties in cognitive control, arousal disrupts attentional performance even when experiencing positive affect.

Introduction

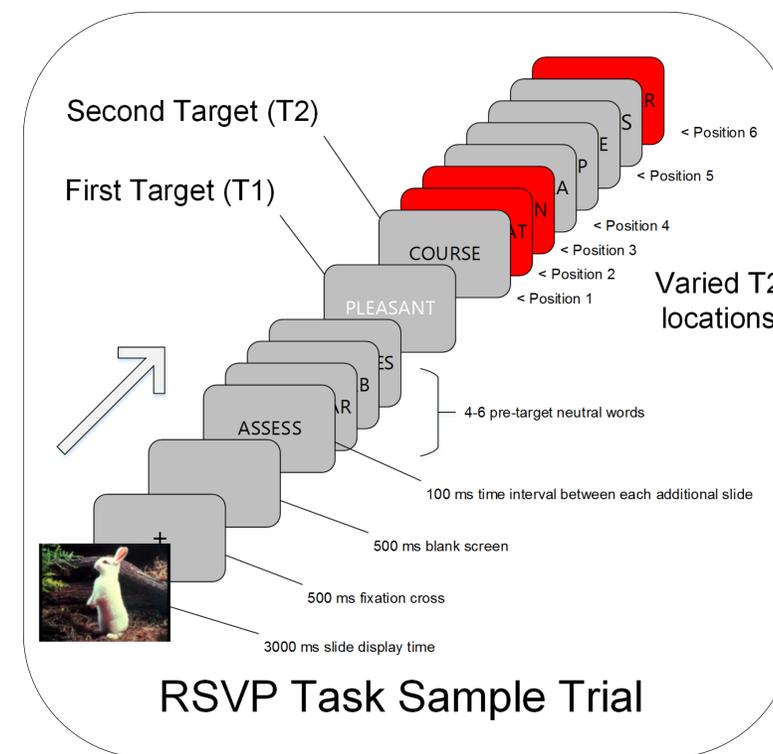
Individual differences in susceptibility to negative affect and their influence on attention play an important role in theories of cognitive vulnerability to psychopathology (Dalgleish & Power, 1999; Ingram, Atchley, & Segal, 2011). It has been shown that trait anxious individuals and depressed individuals are biased in their attention to negative information (Bar-Haim, Lamy, Pergamin, Bakermans-Kranenburg, & Van IJzendoorn, 2007; Yiend, 2010). One potential problem in understanding these attentional biases is that individual differences in attentional control and negative affect are often confounded with arousal.

It has been suggested that affect determines how narrow or broad the aperture of attention is, whereas arousal influences attentional focus (Fernandes, Koji, Dixon, & Aquino, 2011). The attentional blink (AB) consists of a reduced ability to detect a second target (T2) when it occurs within 500 ms of attending to a prior target (T1) during a rapid serial visual presentation (RSVP) task. In a recent study, we demonstrated that positive affect combined with low arousal resulted in significantly better performance on a RSVP task than positive affect and high arousal (Saxton, Siyaguna, Murphy, Myhre, and Rokke, 2013).

Since individual differences in attention have focused on negative affect and not arousal, we wondered whether individual differences might also predict the influence of arousal on attentional performance even in positive affect. Therefore, we hypothesized that tendencies toward experiencing negative affect and difficulties in coping with it would predict poorer performance when aroused.

Method

Twenty-seven undergraduate psychology students participated for course credit. They completed an RSVP attention task while experiencing positive emotion under both low and high arousing conditions. The first target (T1) was always positive in valence and the second target (T2) was neutral. In addition, they completed self-report measures of attentional control (ACS), difficulty in emotion regulation (DERS), neuroticism (Goldberg), and rumination styles (RSQ). The AB was represented by subtracting T2 detection rates at lags of 200 and 300 ms following T1 from performance at the 800 ms lag. A single measure of performance disruption was then calculated by taking the difference in T2 accuracy scores during the blink period between low and high arousal conditions. The larger the score, the greater the influence of arousal on the AB.

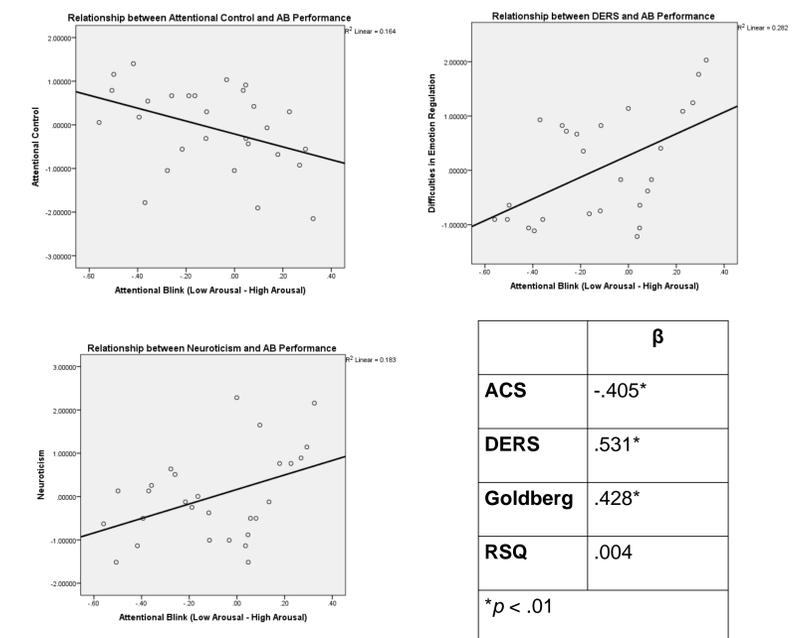


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Results

Individual linear regression analyses were conducted to predict performance by each of the individual difference measures. It was found that participants high in neuroticism and those having more difficulty in emotion regulation showed a deeper AB (poorer performance) when aroused than when not. Those with poor attentional control also performed more poorly when aroused. Arousing conditions, even when positive, have a greater impact on attention for those susceptible to negative emotion. Rumination styles was not predictive of performance.



Conclusion

Problems associated with neuroticism and difficulties in emotion regulation have been thought of largely in terms of negative affect. These findings are important because they suggest that for individuals who are high in neuroticism, have difficulties in emotional regulation, or have low attentional control, arousal disrupts attentional performance even when experiencing positive affect.

The finding that rumination was not predictive of performance is of interest. The rumination styles questionnaire was developed specifically in the context of depression and has been associated with difficulties in inhibiting attention to negative information. If rumination is associated with attentional deficits, those deficits do not appear to apply to contexts in which positive affect is experienced.