Better Attend Here—Not There: Individual Differences in Orienting Predict Anxious Attention Bias and Defensive Driving

Stephanie Tolley-Schell, John J. Curtin, Allison M. Grant
Department of Psychology, University of Wisconsin-Madison

Introduction

Individual differences in the allocation of visual attention are thought to play a role in anxiety and defensive driving. However, the specific mechanisms underlying these individual differences remain unclear. Recent research has suggested that anxious individuals may show a heightened sensitivity to potential threats, leading to an increased likelihood of devoting attention to these stimuli. This heightened sensitivity is thought to be driven by anxiety-related physiological mechanisms that co-opt the cognitive system to exert executive attention control, including processes of inhibition.

Specific Aims

(1) To examine whether high Trait Anxiety is associated with measurable inefficiencies of executive attention on an affect-free task (mapping a network of brain areas involved in the mental FPC and prefrontal cortex), inefficient orienting, or inefficient attentional blink.

(2) To evaluate 2 different hypotheses concerning biased attention to negative emotion:
   (1) Individual differences in efficiency of executive attention promote negativity bias
   (2) Normal mechanisms of attention are used strategically to promote attention to potential threat among anxious individuals.

(3) To examine whether ANT measures of attention are associated with adolescent/young adult real-world behavior (reported problems with attention in daily life, car accidents).

Method

Participants

Ninety-eight healthy young adults (29 males) with normal vision participated in the study. All participants were right-handed and had normal or corrected-to-normal vision. Results are consistent with the proposal there is important heterogeneity in the efficiency of attentional functions among anxious individuals, and future work should explore this heterogeneity. Future work could examine whether those known to be at increased risk for clinically significant anxiety due to family history of anxiety disorders or negative early experiences are more likely to demonstrate difficulties with executive attention.

Results

Trait Anxiety is not associated with ANT subscores. However, these results are consistent with the proposal there is important heterogeneity in the efficiency of attentional functions among anxious individuals, and future work should explore this heterogeneity. Future work could examine whether those known to be at increased risk for clinically significant anxiety due to family history of anxiety disorders or negative early experiences are more likely to demonstrate difficulties with executive attention.

Conclusions

- Trait Anxiety is not associated with ANT subscores.
- Normal mechanisms of attention are used by anxious individuals to promote attention to potential threat among anxious individuals.
- The interaction of Trait Anxiety with ANT orienting accounted for an increase in Negativity Bias beyond that predicted by Trait Anxiety and Orienting alone. This suggests that anxious individuals may use ANT orienting to account for additional variance in Negativity Bias.

Acknowledgments

This work was supported by NIH grants (R01MH081766 and R21MH081766) to JJC and by a graduate student fellowship from the National Science Foundation (BNS-0961938) to STS.

References


