

The Allocation of Attentional Resources: Exploring Fluctuations in Mind Wandering with Attentional Performance and Affective Variables

Marissa Krimsky, Amishi Jha

University of Miami, Miami, United States

Mind wandering (MW) impacts performance across a variety of tasks, especially sustained attention. It is important to expand our understanding of conditions which might potentiate MW, as these may facilitate the greatest MW dependent performance decrements. MW has been shown to increase with time on task and be closely linked to affective factors related to negative mood and depression. However, it remains unclear how the relationship between attentional performance and mind wandering unfolds with time on task and whether it is influenced by affective factors. Herein, we sought to investigate these issues using hierarchical linear modeling (HLM), which allowed us to examine the association between performance and MW on a trial-by-trial basis. Participants (N = 69) completed the sustained attention to response task (SART) with subjective reports of MW assessed intermittently throughout the task; they also completed measures of mood and depression. HLM results revealed that MW was significantly predicted by performance and affective variables. Further, we observed decreased performance and increased MW with time on task; however, MW did not vary as a function of the interaction of performance and time on task. The relationship between MW and performance seemed to be partially explained by affective factors related to negative mood and depression. Participants with higher levels of negative mood and depression reported overall higher levels of MW and individuals reporting higher levels of negative mood also reported higher MW when their overall performance was worse. Finally, negative mood was linked to the change in target accuracy with time on task, with participants reporting lower levels of negativity showing greater decrement in performance with time on task, although at a trend level only. In sum, our results imply that MW is the highest for individual with more negative mood and higher levels of depression when performing poorly; however, over the course of an experiment, performance costs trend towards being highest for individuals that are not reporting negative mood.