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Frontal Midline Theta as an Index of Emotional Modulation in Working Memory

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Oral Presentation O3.1

FRONTAL MIDLINE THETA AS AN INDEX OF EMOTIONAL MODULATION IN WORKING MEMORY

<u>Sean O'Bryan</u> and Joseph Williams* Psychology Department, Illinois Wesleyan University

While the influence of emotion on long-term memory processes is well-understood, it remains unclear whether the presence of emotional information improves or diminishes working memory (WM) performance. Emotional stimuli may in fact enhance WM by activating attentional systems in the brain. Electrophysiological investigations have determined that brain areas associated with memory and emotion interact via a phenomenon known as the theta rhythm. As a common correlate of both WM and emotional processing in the frontal lobe, the theta rhythm may serve as a promising neurophysiological link between these cognitive processes. The present study utilized a WM task with dot arrays while electrical activity in the brain was recorded with an electroencephalograph (EEG). Face stimuli (positive, negative, and neutral affective faces) were incorporated throughout the memory task to determine the effects of emotion on both the theta rhythm and working memory performance.