Jack Suárez

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Bryant, AR

Senior
Biological Sciences; Psychology

Faculty Mentor: Dr. Jeffrey Johnson, Psychological Sciences

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A meta-analysis of behavioral and electrophysiological evidence for episodic retrieval mode

Jack Hamilton Suarez, Brittney Bishop, and Jeffrey Johnson

Episodic and semantic memory disruptions coincide with, and sometimes preclude, a variety of
psychological disorders. These disruptions can take multiple forms, not only reflecting the loss of mnemonic information, but also relating to deficits in strategic processing, executive function, and decision making. This project is focused on characterizing the strategies employed by healthy young adults to retrieve episodic versus semantic memories, with the longer-term goals of using the electrophysiological correlates of such processes to understand age-related memory decline and to develop avenues for cognitive rehabilitation. The primary aim of the proposed project is to further elucidate the cognitive and neural basis of a process known as retrieval mode, which supports retrieval by allowing the rememberer to engage in a cognitive state that is conducive to using stimuli as cues for episodic memories. Here, we provide a meta-analysis of behavioral and electrophysiological studies of episodic retrieval, with particular focus on event-related potential (ERP) measures that have shown inconsistent support for the adoption of retrieval mode. Our main hypothesis is that the disparate results are due to differences in difficulty between the episodic retrieval tasks employed, and the various semantic tasks that are commonly used as control conditions. While evidence in favor of retrieval mode has often been demonstrated when comparing with simple semantic judgments (e.g., animacy or size), null results might arise when the semantic task is more engaging than the episodic task (e.g., is this object found more often indoors vs. outdoors?). The findings of this project will be instrumental in facilitating the development of experimental designs to further test the limiting conditions of retrieval mode using ERPs and other neuroimaging methods, such as functional magnetic resonance imaging (fMRI).