Western
The Brain and Mind Institute

Visiting Speaker

Bradley Buchsbaum

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"Neural Similarity between Perception and Memory for Complex, Multimodal Events"

A detailed conscious memory is a revisitation of a past experience. Indeed, one might define a "perfect memory" as one that perfectly recapitulates the phenomenological qualities of a previous perceptual experience. This relationship may also hold at the neural level -- i.e. during memory the brain's goal is reconstruct a former perceptual state, a distributed pattern of neural activity. We have recently explored the extent to which this principle holds when human subjects must mentally replay complex multimodal video episodes. I will present data from fMRI studies showing the relationship between the extent of "pattern reactivation"; during memory and its link to age-related memory decline, introspective judgements of vividness, stimulus repetition, and in two cases of amnesia. I will show that memories defined by global activation patterns are indeed "similar" to their perceptual precursors, but they are not "pixel-perfect" replications. The systematic differences we see between perception and memory activity patterns relate to Roger Shepard's distinction between first and second-order similarity structure. Finally, I will discuss how the quality of a distributed memory reactivation pattern is modulated by local activity in the prefrontal cortex and medial temporal lobe.

http://research.baycrest.org/bbuchsbaum

Date: Monday, March 5, 2018

Time: 10:30 am

Location: Room 4190,
Western Interdisciplinary Research Building (WIRB)

If you require information in an alternate format or if any other arrangements can make this event accessible to you, please contact Denise Soanes at dsoanes4@uwo.ca