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Institute of Brain and Cognitive Science  
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# BI-WEEKLY SEMINAR SERIES

**TOPIC:** Distinct Behavioral Effects of Prefrontal and Parietal Cortex Inactivations on an Accumulation of Evidence Task in the Rat

**SPEAKER:** Jeffrey Erlich (NYU Shanghai)

**TIME:** 12:00-13:30, 10 November 2014

**VENUE:** Room 152, Geography Building, 3663 Zhongshan Road North, Shanghai (华东师范大学中山北路校区, 地理楼 152 室)

## ABSTRACT OF THE TALK

Numerous brain regions have been shown to have neural correlates of gradually accumulating evidence for decision-making, but the functional roles of these regions have yet to be determined. Here, in rats performing a sensory evidence accumulation task, we inactivated the frontal orienting fields (FOF) and posterior parietal cortex (PPC), two rat cortical regions that have neural correlates of accumulating evidence and that have been proposed as central to decision-making. We used a detailed model of the decision process to analyze the effect of inactivations. Inactivation of the FOF produced significant effects that could be well-modeled as an impairment in the accumulator's output pathway. Moreover, we establish a lower-bound (~250ms) for processes that require the FOF. In contrast, we found a minimal role for PPC in decisions guided by accumulated evidence, but revealed a role for PPC in self-guided decisions.

## BIOGRAPHY

Jeffrey Erlich is assistant professor of neuroscience at NYU Shanghai. Prior to joining NYU Shanghai, he was an Associate Research Fellow at Princeton University. He holds a PhD from New York University and a BSc from McGill University in Montreal, Canada.

Professor Erlich's research interests are neural mechanisms of decision making, attention, and emotion. His work has appeared in *Archives of General Psychiatry*, *Frontiers in Neuroscience*, *Neuron*, and *Nature*.