Expanding the Space of Cognition via Multi-scale Entrainment: A Medium for Education and Enculturation

J. Scott Jordan
Illinois State University

Kris Ariyabuddhiphongs
Illinois State University

Erica Ranade
Illinois State University

Andrew Baker
Illinois State University

Abstract: Data indicate that mirroring and anticipation constitute design principles of the brain. Mirroring resides in the sensory properties of neural systems previously believed to be purely motor (i.e., mirror systems), while anticipation resides in the fact these mirroring centers are involved in cerebellar-cortical circuits that are able to embody command-feedback regularities and, as a result, simulate action-effects faster than the speed of sensory feedback. Such anticipatory mirroring circuits are at work at the scale of action, perception, and cognition and constitute a medium by which interacting humans anticipatorily couple at multiple scales simultaneously as the movements, goals, and thoughts of another "hijack" ones own mirroring/planning systems. The present poster presents results of experiments that reveal the role that multi-scale anticipatory coupling (i.e., multi-scale entrainment) plays in decreasing stereotypes, increasing projection (i.e., attributing ones own personality traits to another), and learning anecdotal versus abstract information.