



**Imagination and Perception of New Movements:  
A Common Coding Approach**

**Dr Sanjay Chandrasekharan, Ph.D.**

**Department of Kinesiology and Hotchkiss Brain Institute,  
University of Calgary, Canada**

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**Abstract**

Recent work in cognitive science and neuroscience has outlined a common representation in the brain, connecting the execution, perception and imagination of movement. The most famous example of this 'common coding' is mirror neurons, which are activated during observation as well as execution of biological movement. This mechanism allows the perception of another person's action to automatically trigger the same action in the observer, in an implicit fashion. Work in common coding shows this 'resonance' effect is a wider phenomenon, and exists for non-biological movements, imagined movements (such as mental rotations), and across two people doing a joint-task.

My current research seeks to extend the common coding framework to the emergence of new movements in imagination, and also to judgments of novel movements. In this talk, I will outline an application project and a behavioral experiment we have developed to explore new movements. The first explores the origin of new movements in imagination, which is a precursor for innovation. The latter examines how people judge whether novel movements they encounter are possible to execute or not, a crucial judgment that is involved in the learning of new actions and tasks.

**Biography**

Sanjay Chandrasekharan received his Ph.D. in Cognitive Science from Carleton University, Ottawa, Canada. He is currently a postdoctoral fellow in cognitive and motor neuroscience at the Human Performance Lab (Faculty of Kinesiology) and Hotchkiss Brain Institute, University of Calgary, Canada.

Previously, he was a research scientist with the School of Interactive Computing, Georgia Institute of Technology, and a pre-doctoral fellow at the Max Planck Institute for Human Development, Berlin. He has also worked as a faculty member at the Center for Behavioral and Cognitive Sciences, University of Allahabad, India.