PhD position on the sensorimotor and social mechanisms of hallucinations in healthy participants and patients with Parkinson’s Disease.

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The Laboratory of Cognitive Neuroscience, directed by Olaf Blanke (https://www.epfl.ch/labs/lnco/), has an open position for a PhD student on the investigation of the sensorimotor and social brain mechanisms of a specific hallucination (presence hallucination; Blanke et al., Current Biology 2014; Arzy et al., Nature 2006) in healthy participants and in patients with Parkinson’s disease (PD). The project will couple robotics, virtual reality (VR), experimental psychology, and functional magnetic resonance imaging (fMRI) and is part of a larger research project on hallucinations.

Most patients with PD are not only affected by motor symptoms (e.g., tremor), but also experience hallucinations as a symptom of the disease (Lenka et al., Neurology 2019). Despite the high prevalence of patients with hallucinations, the neural mechanisms remain poorly understood. By combining MRI-compatible robotics (Hara et al., J Neuroscience Methods 2014) and MRI-compatible VR, the present project plans to investigate how sensorimotor and social stimulation can induce and mimic symptomatic hallucinations (in patients with PD and in healthy participants) in a fully controlled environment.

The ideal candidate should have a Master degree (or equivalent) in computer science, neuroscience, medicine, psychology, or engineering, be strongly motivated with a keen interest in cognitive-systems neuroscience and neuroimaging/signal analysis. A strong neuroimaging background (fMRI), previous research experience in the experimental psychology, and/or strong programming skills (Matlab, python, etc.) are a plus.

The Ph.D. candidate will be enrolled in the EPFL Ph.D. program Neuroscience (next deadline: mid-November 2019; see http://phd.epfl.ch/neuroscience-openings).