Title: Errors of the Heart: Effect of Interoceptive Feedback Manipulation on Implicit Sense of Agency

Presenting Author: Ondrej Becev

Author(s): Eva Kozakova, CEITEC - Central European Institute of Technology, Masaryk University, Czech Republic, Lenka Sakalosova, CEITEC - Central European Institute of Technology, Masaryk University, Czech Republic, Radek Marecek, CEITEC - Central European Institute of Technology, Masaryk University, Czech Republic, Marie Kuratkova, CEITEC - Central European Institute of Technology, Masaryk University, Czech Republic, Robert Roman, CEITEC - Central European Institute of Technology, Masaryk University, Czech Republic, Milan Brazdil, CEITEC - Central European Institute of Technology, Masaryk University, Czech Republic

Abstract: 1.51

Sense of Agency (SoA), is one’s awareness of being in control of one’s actions. According to dominant contemporary models of SoA, a discrepancy between expected and actual sensory input generates an error signal and can lead to disturbances in agency attribution. Other studies have demonstrated ERP suppression for self-produced auditory stimuli. Our study focuses on the possible interaction of predictive mechanisms of intention and interception.

In the present study we tested the effect of interoceptive manipulation on implicit marker of agency - N1/P2 ERP suppression. Subjects (N = 49) participated in the EEG experiment taking simple action task with self- or externally-produced auditory signals while receiving auditory synchronous cardiac feedback (SCF), or false cardiac feedback (FCF). According to our hypothesis, interoceptive prediction error induced by false interoceptive feedback will propagate to the predictive model of agency, affecting the implicit Sense of Agency, demonstrated by diminished ERP suppression in FCF blocks. Preliminary analysis shows an effect of FCF on both Action and Effect sounds’ ERPs, diverging however from the results observed in earlier studies.