

Monday 8th February 4pm – Maynooth University Psychology Department

Prof. Vincent Walsh (Institute of Cognitive Neuroscience, UCL)

New physiological findings in human brain stimulation: why most claims to cognitive enhancement are probably false.



Vincent Walsh is Professor of Human Brain Research and Royal Society Industry Research Fellow at the Institute of Cognitive Neuroscience, UCL. He is a leading figure in Brain Stimulation and has interests in a range of areas including vision, numerical processing, sleep, learning, synaesthesia, plasticity. In recent times he has become interested in applying science in the real world. He leads the Applied Cognitive Neuroscience Group at UCL who are interested in, among other things, Sporting Performance (<http://www.appliedcognitiveneuroscience.com/>)

Abstract:

Transcranial direct current stimulation (TDCS) has been associated with claims to enhance many different cognitive functions (memory, decision making, numerical cognition, attention, planning, creativity, mood and more, and has also been claimed to effect improvements in parkinson disease, anxiety, depression, MS, ALS, Tourette's syndrome, autism and more). Following failures to replicate some prominent studies (including one of my own) I reinvestigated some of the claims made based on the physiology of TDCS. This physiology is based on findings in the motor cortex and it is assumed that it transfers to silent areas of cortex. The results suggest that some of the most prominent studies in the TDCS and other non-invasive brain stimulation (NIBS) literature, cannot have been caused by the claimed physiology of the stimulation. I will further specifically challenge some double standards, special pleading and lack of controls that have become standard in the literature. I will conclude by proposing a set of minimum criteria for publication and assessment of TDCS and other NIBS papers.