

KEYNOTE TALK  
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## Body Semantics and Self-Transformation in Immersive Virtual Reality

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### Abstract

There is growing evidence for the significant plasticity of the human brain's body representation. Using immersive virtual reality it is quite straightforward to generate in people the strong illusion that the virtual body that they see substituting their real body is their body. Although there is substantial evidence that such illusions can easily be generated there has been scant research on the behavioural and attitudinal correlates of such apparent body transformations. We introduce the concept of 'body semantics' that is, where the visual appearance of the virtual body suggests particular personal attributes - for example, due to stereotyping. In this talk I will describe some experiments that show that a body ownership illusion with respect a transformed virtual body leads to changes in attitudes and behaviours that are appropriate to the semantics of that body. We conclude that adoption of a body type experienced from first person perspective carries with it behavioural correlates, that could be exploited in a number of rehabilitative applications, as well as being a powerful tool in cognitive neuroscience. Moreover, virtual reality, typically used for the illusion of transfer to another place - the place depicted by the virtual reality displays - can be harnessed also to generate the illusion of being another 'self', with behavioural, attitudinal and possibly cognitive changes as a result.



**Speaker Bio-Sketch:** Mel Slater is an ICREA Research Professor at the University of Barcelona. He became Professor of Virtual Environments at University College London in 1997. He was a UK EPSRC Senior Research Fellow from 1999 to 2004, and has received substantial funding for virtual reality installations in both London and Barcelona. Twenty nine of his PhD students have obtained their PhDs since 1989. In 2005 he was awarded the Virtual Reality Career Award by IEEE Virtual Reality 'In Recognition of Seminal

Achievements in Engineering Virtual Reality.' He leads the eventLab ([www.event-lab.org](http://www.event-lab.org)) at UB. He is Coordinator of the EU 7th Framework Integrated Project VERE ([www.vereproject.org](http://www.vereproject.org)), and scientific leader of the Integrated Project BEAMING ([www.beaming-eu.org](http://www.beaming-eu.org)). He holds a European Research Council grant TRAVERSE ([www.traverserc.org](http://www.traverserc.org)) on the specific topic virtual embodiment, and the general topic of a new area of application of virtual reality based on this theme.