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Modulation of heat pain threshold during virtual body ownership

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In the last few years a branch of pain research has been focusing on the modulatory effects of the vision of the body on pain perception. So, for instance, the vision of one's own real body has been proven to induce analgesic effects. On the other hand, bodily illusions such as the rubber hand illusion have provided new tools for the study of perceptual processes during altered body ownership states. Recently, new paradigms of body ownership made use of a technology that is going places both in clinical and in experimental settings, i.e. virtual reality. My presentation will concern the studies that made use of virtual body ownership applied to human models of acute pain.

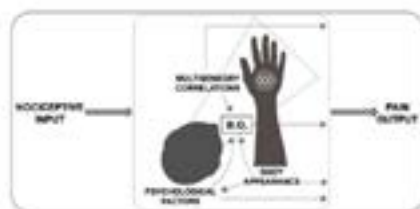


Fig. 1. Schematic representation of the factors involved in pain modulation during body ownership. (B.O.) multisensory correlations facilitate the sense of B.O. over a real body part, but different mechanisms can only use different gate processes. The perception of the body that triggers B.O. does not always affect pain perception (as in body image and ownership), but it can affect pain perception. Psychological factors mediate both cognitive (e.g. attentional resources, expectancy and appraisal) and emotional factors (e.g. positive or negative states). Both body appearance and ownership processing are critically related to the affective regulation of the "gatekeeping of nociception" group, but they are distinct processes for the gate of nociception, because they are affected by different factors in B.O. experiments and they contribute to shape the pain experience independently.

Biography

Matteo Martini got a first-class degree in Experimental Psychology at the Psychology Department of "Sapienza" University of Rome. He obtained his PhD at "Sapienza" University with a thesis on the effects of cognitive and emotional processes on pain perception. During the last part of his PhD he moved to London to work on the placebo analgesia effect at the Department of Neuroscience, Physiology and Pharmacology of UCL. He later held a Post-Doc position working with immersive virtual reality scenarios and virtual body ownership, at the EventLab (Universitat de Barcelona), for the Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS). He is now a Higher Education Academy Fellow and holds a position as Lecturer at University of East London.

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