



5<sup>th</sup> Barcelona Lecture Series in

# Brain, Cognition & Behaviour



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Justus-Liebig-Universität

## The Interaction Between Vision and Eye Movements

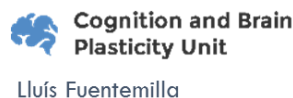
The existence of a central fovea, the small retinal region with high analytical performance, is arguably the most prominent design feature of the primate visual system. This centralization comes along with the corresponding capability to move the eyes to reposition the fovea continuously. Past research on visual perception was mainly concerned with foveal vision while the observers kept their eyes stationary. Research on the role of eye movements in visual perception emphasized their negative aspects, for example, the active suppression of vision before and during the execution of saccades. But is the only benefit of our precise eye movement system to provide high acuity of the small foveal region, at the cost of retinal blur during their execution? In this review, I will compare human visual perception with and without saccadic and smooth pursuit eye movements to emphasize different aspects and functions of eye movements. I will show that the interaction between eye movements and visual perception is optimized for the active sampling of information across the visual field and for the calibration of different parts of the visual field. The movements of our eyes and visual information uptake are intricately intertwined. The two processes interact to enable an optimal perception of the world, one that we cannot fully grasp by doing experiments where observers are fixating a small spot on a display.

**Date: Thursday, 10 November 2016**

**Hour: 15:00**

**Place: Sala de Graus, Facultat de Psicologia, Campus Mundet**

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