

## **Does illusory surface inclination affect eye movements?**

Laura Pérez Zapata<sup>1</sup>, Antonio Aznar-Casanova<sup>1</sup> & Hans Sùper<sup>1,2</sup>

1 Vision and Control Action (VISCA-Lab), Facultat de Psicologia, Universitat de Barcelona

2 Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona

Binocular vision requires that we foveate both eyes on the relevant visual information to fuse the foveal images into one single image. Other points in space do not fall on corresponding retinal locations, and the visual system uses this binocular disparity to extract depth information. Besides binocular disparity, the visual system employs monocular cues like texture gradients and perspective to extract depth information. In perceptual illusions the monocular and binocular depth cues are different, which may cause a conflict for the visual system. Binocular depth cues make the eyes to converge on the physical plane (screen) while the monocular cues produce a convergence on the induced depth plane.

In this work we registered eye movements in observers that looked at a point presented on different inclinations and slants of surfaces, induced by means different gradient textures. The preliminary results suggest that there are differences in eye positions during the first 80 ms. After this initial fixation an adjust occurs where the eyes return to fixate at the screen plane.

Thus it appears that the oculomotor system programs the eye movement first based on the induced depth perception, and only after that the visual system is able to correct this ‘depth illusion’.

*Key words:* depth perception, eye movements, binocular, depth illusion.