UNIVERSIDAD DE GRANADA

Máster Universitario en Neurociencia Cognitiva y del Comportamiento

Charla Dr. D. Richter "How do expectations shape sensory processing?"

Desde el Mié, 23/11/2022 - 14:00 hasta el Mié, 23/11/2022 - 14:00

Título: How do expectations shape sensory processing?
Ponente: David Richter (Donders Institute, Radboud University, Países Bajos)

Abstract: We continuously use our prior knowledge to predict the future. For example, when you return from work and open your front door, you know what to expect and would experience tremendous surprise should you find an elephant behind your door. But does the brain use prior knowledge to modulate perception itself, or do our expectations merely affect post-perceptual processes, such as decision making? If the brain does indeed use predictions to guide perception, how do expectations modulate sensory processing? During my talk, we will address these questions and explore vision as a form of active perceptual inference, fundamentally relying on predictions and expectations. I will provide evidence from multiple neuroimaging studies, demonstrating the emergence of sensory prediction errors across the ventral visual stream. Moreover, I will show how predictions modulate the tuning of visually responsive neurons. Specifically, we will see that predictions dampen (attenuate)

neural representations, thereby serving to reduce redundancy in sensory cortex and bias processing of surprising information. Finally, I will talk about the limits of predictive processing in the human brain by discussing whether predictions operate independent of attention, and what kind of predictions the sensory brain may employ to guide perception. In sum, we will see how vision can be understood as an inferential process, with prediction constituting a multifaceted core principle of perceptual processing.

Fecha y hora: jueves, 24 noviembre 2022, a las 13:00
Lugar: Sala de conferencias 1, CIMCYC