



HOW VOLUNTARY AND INVOLUNTARY ATTENTION DIFFERENTIALLY SHAPE PERCEPTION

Marisa Carrasco

Julius Silver Professor of Psychology and Neural Science, Collegiate Professor, New York University

Abstract

Visual attention is essential for visual perception; it enables us to selectively process information across space, visual dimensions, and time. In this talk, I focus on two types of covert spatial attention: Endogenous attention, which is voluntarily deployed and sustained, and exogenous attention, which is involuntarily deployed fast and transiently. I illustrate how these two types of attention differentially modulate visual perception. I highlight findings from:

1. Psychophysical experiments investigating their effects on performance and their corresponding featural representations.
2. An image-computable model, which require separate operating regimes across visual detail (spatial frequency) to explain how they differentially alter visual perception
3. Neuroimaging (fMRI) experiments differentiating their effects in occipital cortex.
4. Neurostimulation experiments with transcranial magnetic stimulation (TMS) establishing differential critical roles of the occipital cortex (V1/V2) for exogenous attention and of the frontal cortex (right frontal eye-field) for endogenous attention.

Together these studies reveal a computational dissociation and a critical role of different brain areas to explain how endogenous and exogenous differentially attention alter the processing of basic visual dimensions and shape perception.



Hosted by: **Joan López-Moliner**
j.lopezmoliner@ub.edu

May 7th
Tuesday at 15:00h

Faculty of Psychology
Campus Mundet | Aula Sala de Graus