



FENS Forum 2010 - Amsterdam

- Posters: to be on display from 8:00 to 13:15 in the morning and from 13:30 to 18:45 in the afternoon. Poster sessions run from 09:30 to 13:15 in the morning and from 13:30 to 17:30 in the afternoon. A one hour time block is dedicated to discussion with the authors (authors should be in attendance at their posters as from the time indicated.)
 - For other sessions, time indicates the beginning and end of the sessions.
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First author Canaval, Luis F. (poster)

Poster board F1 - Tue 06/07/2010, 12:15 - Hall 1

Session 145 - Human cognition 4

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Authors Canaval L. F. (1, 2, 3), Pugnare M. A. (1, 2, 3), Gutiérrez R. (1, 2, 3) & Rodríguez-Ferrer J. M. (1, 2, 3)

Addresses (1) Lab. Vis. Cog. Neurosci., Granada, Spain; (2) Inst. Neurosci., Granada, Spain; (3) Univ. Granada, Granada, Spain

Title Human pattern of detection and perception of stimuli that vary in contrast and eccentricity in the visual field

Text Contrast, eccentricity and position of stimuli used on research on different aspects of human visual cognition, such as covert visual attention, strongly vary among studies. We investigated how contrast, eccentricity and position affect detection and perception of stimuli in humans. In 30 young adults (mean of 19.69 years) with normal vision, we measured response times to stimuli (grey circles or square of 0.5° of size) presented at random at 8 polar coordinates (0, 45, 90, 135, 180, 225, 270 and 315°), in 3 eccentricities with respect of fixation point (2.15, 3.83 and 5.53°) and with 3 levels of contrast (6, 16 and 78%). Declaration of Helsinki was followed and informed consent was obtained from all subjects. In a first test, subjects were asked to press a button after the presentation of stimuli (grey circles). In a second test, where circles and square were presented, subjects only responded to the appearance of circles. In both tests, response times increased as contrast was lowered and eccentricity increased. The longest response time was found with stimuli of 5.38° of eccentricity and 6% of contrast. In all eccentricities studied, longer response times were found with stimuli of 6% of contrast. In the second test where perception of squares was needed, response times were longer than those obtained with detection of circles (first test) by a mean percentage of 32.42 %, which represent 150.13 ms more. The extra time employed in perception was similar, independently of the contrast or eccentricity of stimuli. Response times founded at 8 polar coordinates were similar at eccentricities of 2.15 and 3.83°. At the eccentricity of 5.53°, response times were slightly heterogeneous. Present results show that contrast and eccentricity are the factors that most influence both detection and perception of visual stimuli. Despite the more effort dedicated to perception, it shares the same pattern as that found for detection of visual stimuli.

Theme F - Cognition and behaviour
Human cognition and behaviour - Attention