



Presentation Abstract

Program#/Poster#: 197.5/III2

Title: Visual working memory capacity and stimulus categories: A behavioral and electrophysiological investigation

Location: Halls B-H

Presentation Time: Sunday, Nov 14, 2010, 8:00 AM - 9:00 AM

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Abstract: It has recently been suggested that visual working memory capacity may vary depending on the type of material that has to be memorized. Here we use a delayed match-to-sample paradigm and event-related potentials (ERP) to investigate the neural correlates that are linked to these changes in capacity. A variable number of stimuli (1 to 4) were presented in laterally in two visual hemifields. Participants were required to selectively memorize the stimuli presented in one hemifield. Following memorization, a test stimulus was presented that had to be matched against the memorized item(s). Two types of stimuli were used; one set consisting of discretely different objects (discrete stimuli), and one set consisting of more continuous variations along a single dimension (continuous stimuli). Behavioral results indicate that memory capacity was much larger for the discrete stimuli, as compared to the continuous stimuli. This behavioral effect correlated with an increase in a contralateral negative slow wave (CNSW) ERP component that is known to be involved in memorization. We therefore conclude that the larger working memory capacity for discrete stimuli can be directly related to an increase in activity in visual areas and propose that this increase in visual activity is due to interactions with other, non-visual representations.

Disclosures: **D. Talsma**, University of Twente, Employment; **S. Diamantopoulou**, None; **L. Poom**, None; **P. Klaver**, None.

[Authors]. [Abstract Title]. Program No. XXX.XX. 2010 Neuroscience

Meeting Planner. San Diego, CA: Society for Neuroscience, 2010.  
Online.

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