

Practice improves late-stage distractor filtering: a combined EEG-fMRI study. Todd A. Kelley¹ & George R. Mangun² ¹Microsoft Corporation; ²Center for Mind and Brain, University of California, Davis $(\frac{1}{1})$

Introduction

Repeated exposure to distracting stimuli leads to reduced behavioral interference (Kelley & Yantis, 2009). This has been linked to changes in activity in prefrontal cortex (Kelley & Yantis, 2010). We used EEG and fMRI to examine how practice with distractor filtering is related to suppression of sensory information and top-down cognitive control.

Stimuli & Task

Distractor Positions



Duration: 100 ms ITI: 1.5 - 2s

Task: Identify majority color within target. Target colors (Red/Blue or Orange/Green) alternated from block to block. Response hand depended on target position (above vs. below fixation, counterbalanced across subject). Distractors presented bilaterally on 50% of trials; position of target-colored distractor varied from trial to trial. Behavior and neural data were compared between the first and last half of the session. One session consisted of 16 blocks of 64 trials.

Results: Behavior



Results: PD





Marginal trend toward

Acknowledgments

Kelley TA, Yantis S (2009) Learning to attend: Effects of Kelley TA, Yantis S (2010) Neural correlates of learning to

Sawaki R, Luck SJ (2010) Capture versus suppression of