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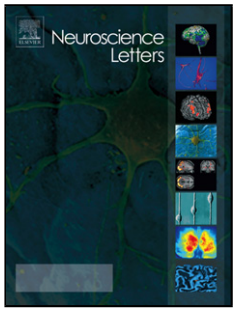

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ACCEPTED MANUSCRIPT

A category-specific top-down attentional set can affect the neural responses outside the current focus of attention

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Highlights

- The category-level top down set was studied using peripheral SSVEP checkerboards
- When target and nontarget were different categories, SSVEP responses were the same
- When target and nontarget were the same category, SSVEP responses were different

Abstract

A top-down set can guide attention to enhance the processing of task-relevant objects. Many studies have found that the top-down set can be tuned to a category level. However, it is unclear whether the category-specific top-down set involving a central search task can exist outside the current area of attentional focus. To directly probe the neural responses inside and outside the current focus of attention, we recorded continuous EEG to measure the contralateral ERP components for central targets and the steady-state visual evoked potential (SSVEP) oscillations associated with a flickering checkerboard placed on the visual periphery. The relationship of color categories between targets and non-targets was manipulated to investigate the effect of category-specific top-down set. Results showed that when the color categories of targets and non-targets in the central search arrays were the same, larger SSVEP oscillations were evoked by target color peripheral checkerboards relative to the non-target color ones outside the current attentional focus. However, when the color

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