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# Attentional Load Asymmetrically Affects Early Electrophysiological Indices of Visual Orienting

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## Abstract

Recent behavioral studies suggest that asymmetries in visuospatial orienting are modulated by changes in the demand on nonspatial components of attention but the brain correlates of this modulation are unknown. Participants performed a dual-task involving monitoring for transient targets appearing at central and lateralised locations. Behavioural analysis indicated a subtle reaction time bias favouring targets appearing in the left visual field. Manipulation of the attentional load of the central task led to a disruption of the right hemisphere orienting response as indexed by ERP (N1) and source analysis. Further analysis revealed that participants' left bias was abolished with increasing time-on-task and this was accompanied by a failure to suppress alpha activity during the inter-target interval. These data support the view that spatial asymmetries in visual orienting are modulated by non-spatial attention due to overlapping neural circuits within the right hemisphere. Finally, we highlight some new experiments designed to isolate continuous electrophysiological markers of visuo-spatial bias.

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