

## Electroencephalogram Study of Change Blindness in Mindful Subjects

**Authors :** Lea Lachaud, Aida Raoult, Marion Trousselard, Francois B. Vialatte

**Abstract :** This paper addresses mindfulness from a psychological and neuroscientific perspective, by studying how it modulates attention. Being mindful defines a state characterized by 1-an attention directed to the subjective experience of present moment, 2-an unconditional acceptance of this experience, and 3-the rejection of systematic rationalization in favor of plain awareness. The aim of this study is to investigate whether perceptual salience filters are lowered in a 'mindful' condition by exploring the role of being mindful in focused visual attention. Over the past decade, mindfulness therapies have seen a surge in popularity. While the outcomes of these therapies have been widely discussed, the mechanisms whereby meditation affects the brain remain mostly unknown. To explore the role of mindfulness in focused visual attention, we conducted a change blindness experiment on 24 subjects, 12 of them being mindful according to the Freiburg Mindfulness Inventory (FMI) scale. Our results suggest that mindful subjects are less affected by change blindness than non-mindful subjects. Furthermore, EEG measurements performed during the experiments may expose neural correlates specific to the mindful state on P300 evoked potentials. Finally, the analysis of both amplitude and latency caused by the perception of a change over 864 recordings may reveal biomarkers that are typical of this state. The paper concludes by discussing the implications of these results for further research.

**Keywords :** EEG, change blindness, mindfulness, p300, perception, visual attention

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