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Abstract to poster:

EEG activity in response to disocclusion of objects appearing from seemingly empty spaces.

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The illusion of absence is a visual illusion in which the space behind an occluder looks compellingly empty. Cleverly using the illusion of absence magicians can produce the illusion of an object appearing out of thin air simply by revealing it from behind an occluder. However, not all occluders elicit the illusion of absence. It seems that small occluders that require a tight alignment between the hidden object and the occluder along the line of sigh are particularly effective in eliciting this illusion. If participants perceive an illusion of absence, then they should find it surprising if removing the occluder uncovers a hidden object. Surprise modulates the P3 component in EEG recordings, providing a potential neural correlate to measure the illusion of absence. We designed a preregistered EEG experiment to capture participants' P3 responses in relation to uncovering objects from behind occluders. Parts of the background were visible through holes in the occluder, and we manipulated the occluder size by varying the size of the holes. Removing the occluder revealed either a piece of fruit or an empty scene. We hypothesised that revealing a piece of fruit from behind an occluder leads to a P3 response at parieto-occipital electrodes that increases with decreasing occluder size. Behavioural results from a first experiment are in line with our expectation. At the ECVP, we will present the results of the EEG experiment. This study extends previous results to neural correlates and provides an objective approach to measuring the illusion of absence. Furthermore, the results from this study have practical relevance in contributing to a better understanding of the potential role of the illusion of absence in road accidents involving obstructions of view. This study was funded by the Research Council of Norway, project number 334817.