

Attention Allocation During the Observation of biological motion: An EEG study

Themis Efthimiou, Jonathan Silas, Wayne Anderson, Oriane Chene, Alexander Jones

Intro

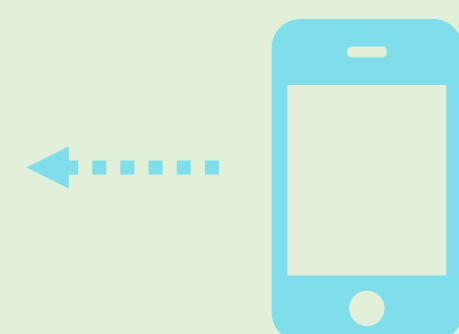
- Previous research has used EEG 'mu' frequency (~ 8-13 Hz) changes to infer the recruitment of sensorimotor activation during biological movement observation.
- This sensorimotor activation is thought to be an indication of online movement simulation. It has been demonstrated that top-down attentional processes modulate the engagement of sensorimotor simulation during movement observation.
- What remains unknown is whether biological motion exogenously captures spatial attention and, in turn, modulates sensorimotor simulation.



Violin-Plot of behavioural responses, there were faster responses when the cue and stimuli were incongruent ($M = 824.24$, $SD = 21.19$) than congruent ($M = 841.75$, $SD = 21.64$)

Visual attention is exogenously drawn towards scramble motion over biological motion.

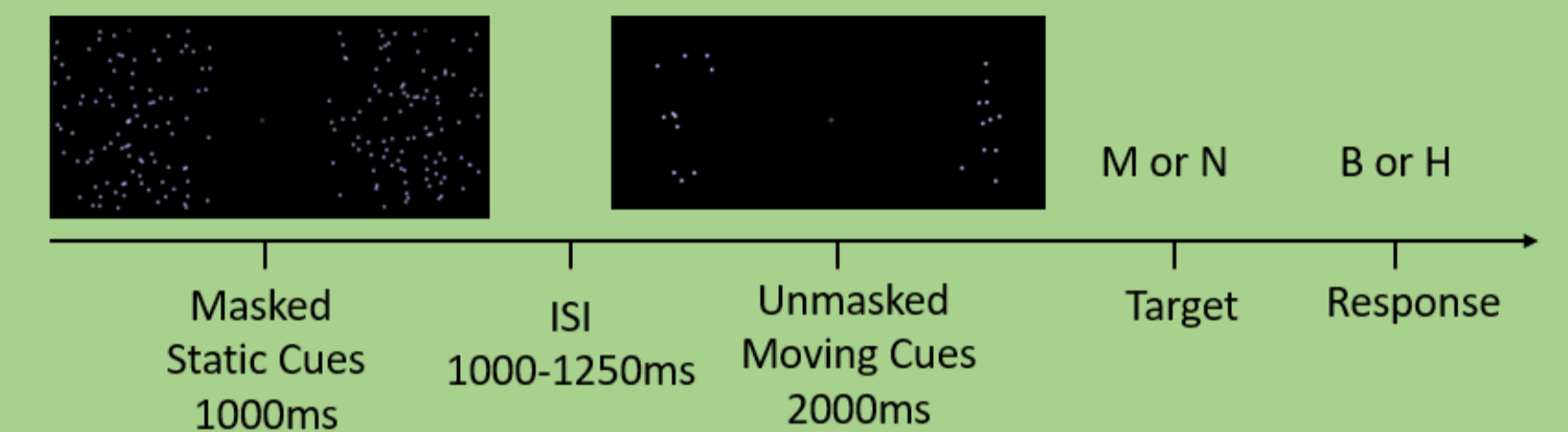
Viewing movement engages motor simulation processes and occipital attentional mechanisms.



Take a picture for access to the poster

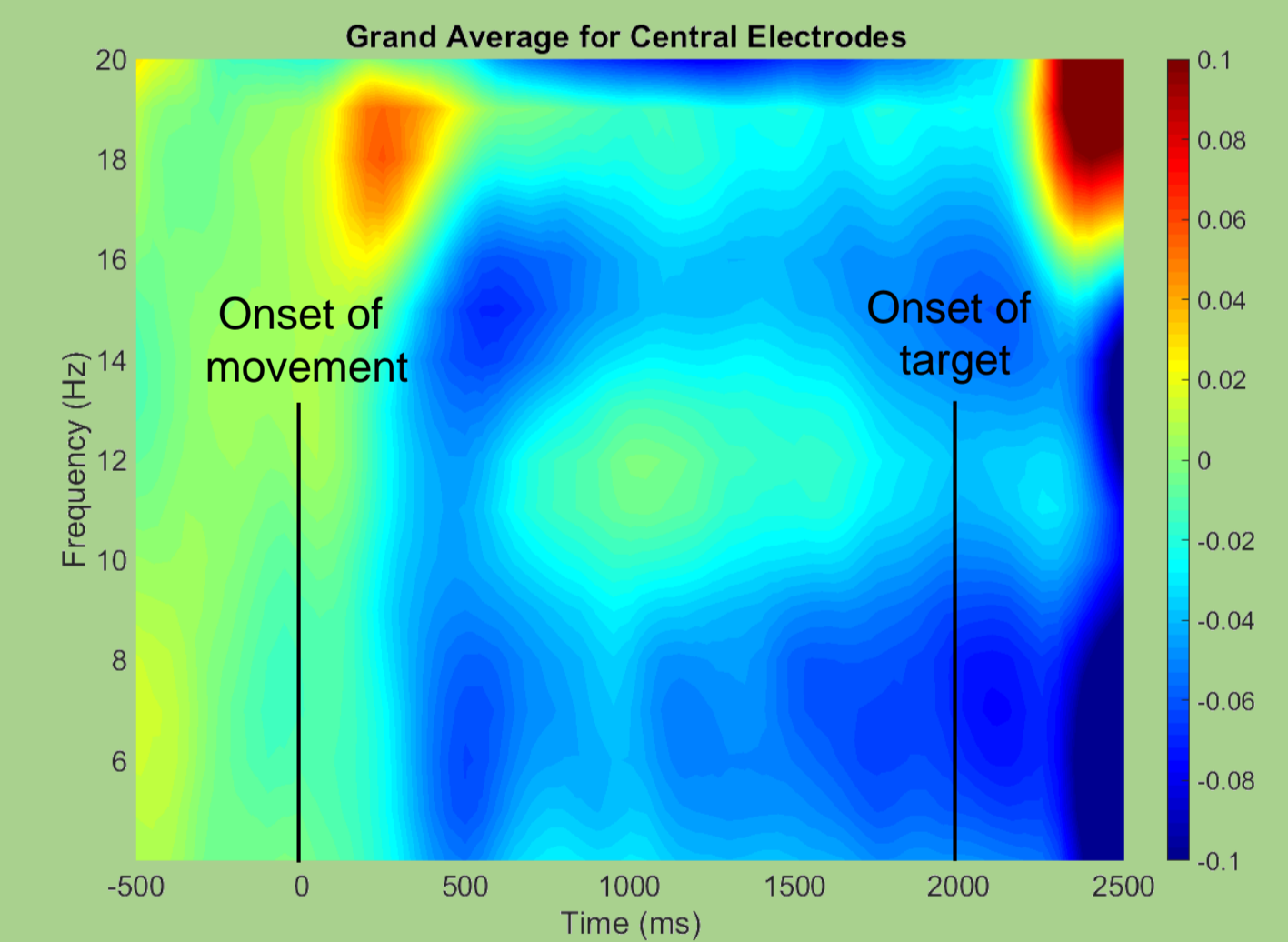
Method

- $N = 63$
- Participants completed a dot-probe paradigm whilst EEG data was recorded from 64 electrodes.
- Static and masked cues were displayed for 1000ms. Participants then view videos of both cues moving for a duration of 2000ms. Finally, participants were presented with a forced discrimination task either an M or N will appear on the left or right side of the screen.



Results

- Participants responded faster when the scrambled walker was congruent with the target.
- EEG showed lateralised decreases in central and occipital electrode sites.



Discussion

- Findings suggests that biological motion differentially engages attention compared to control stimuli.
- In addition suggesting both the engagement of motor simulation processes and occipital attentional mechanisms