

Spatial attention not affected by tACS: a registered report

Alex Jones & Jon Silas



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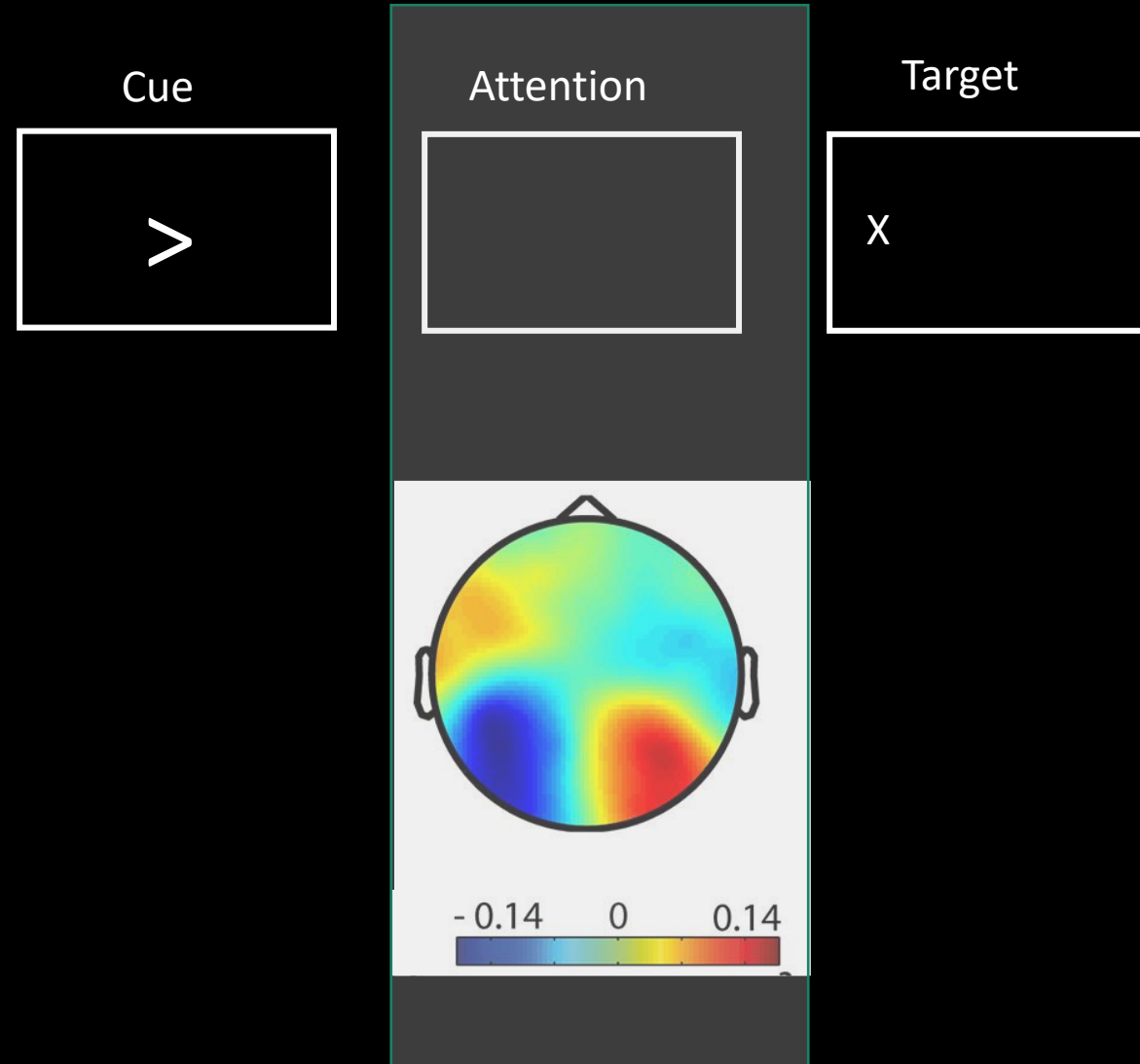
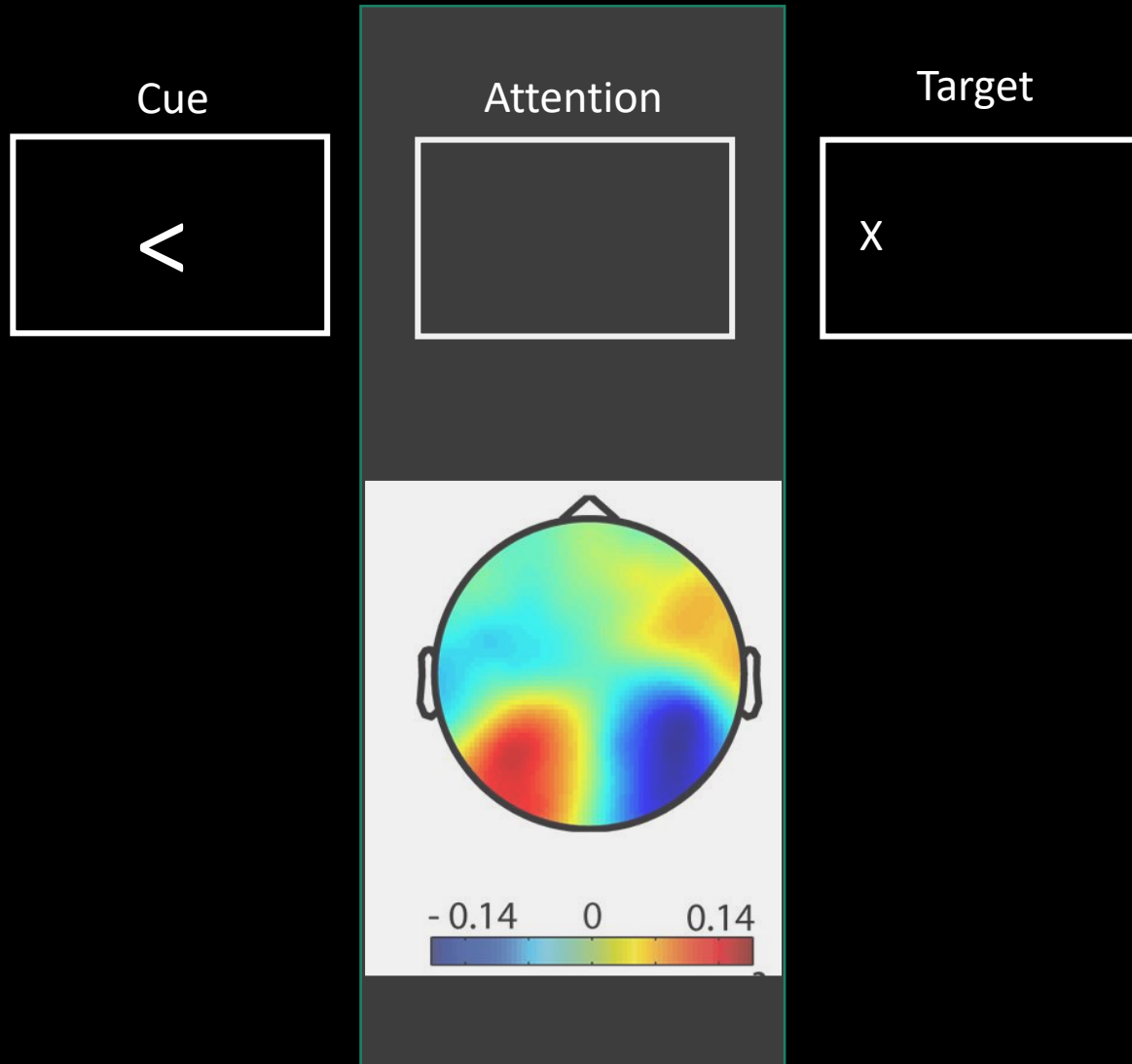
@jones_silas_lab

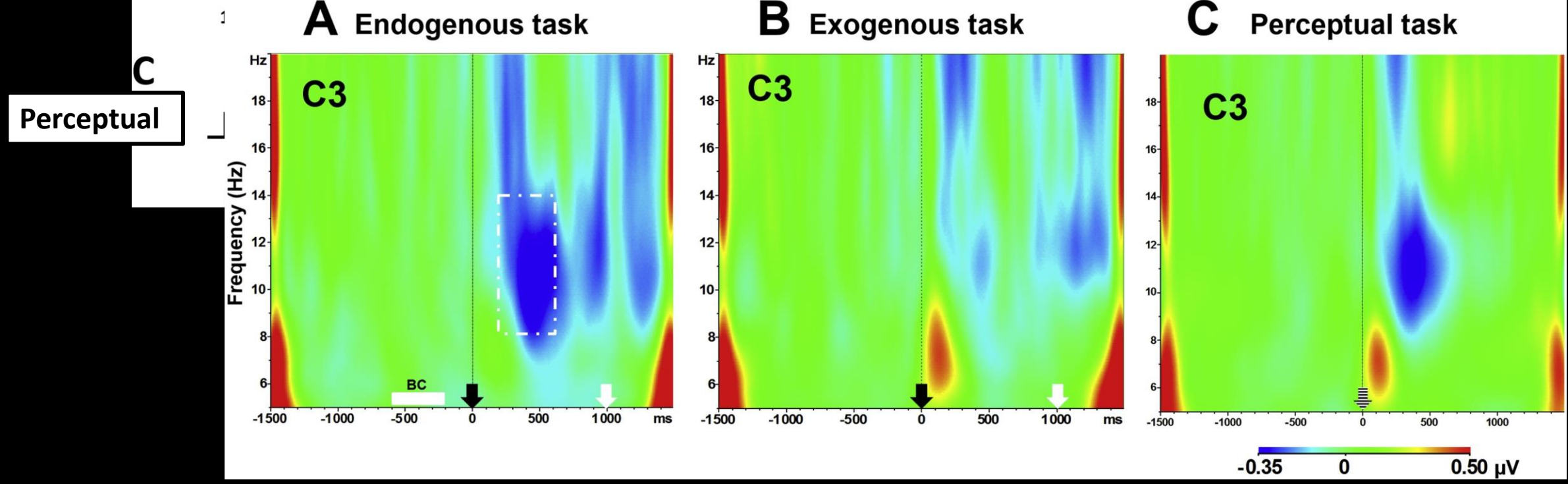
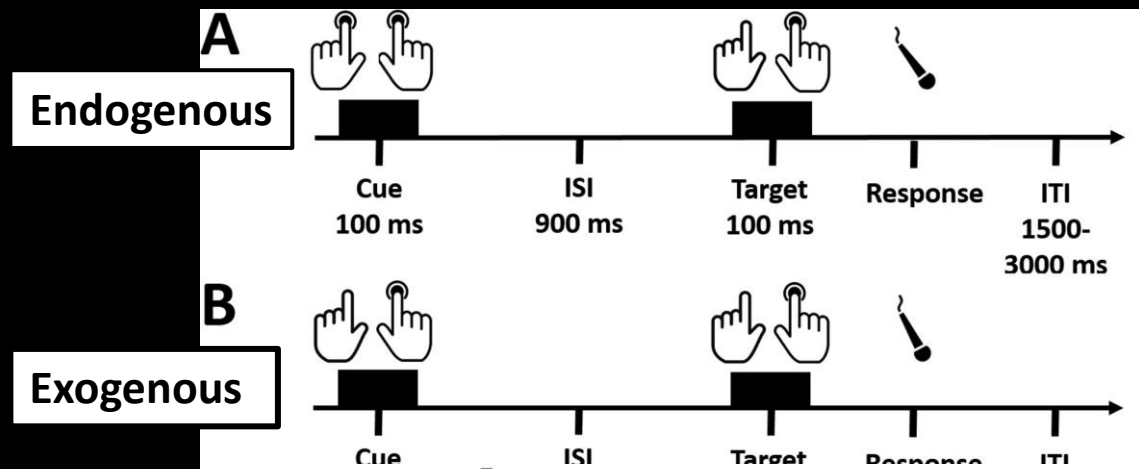


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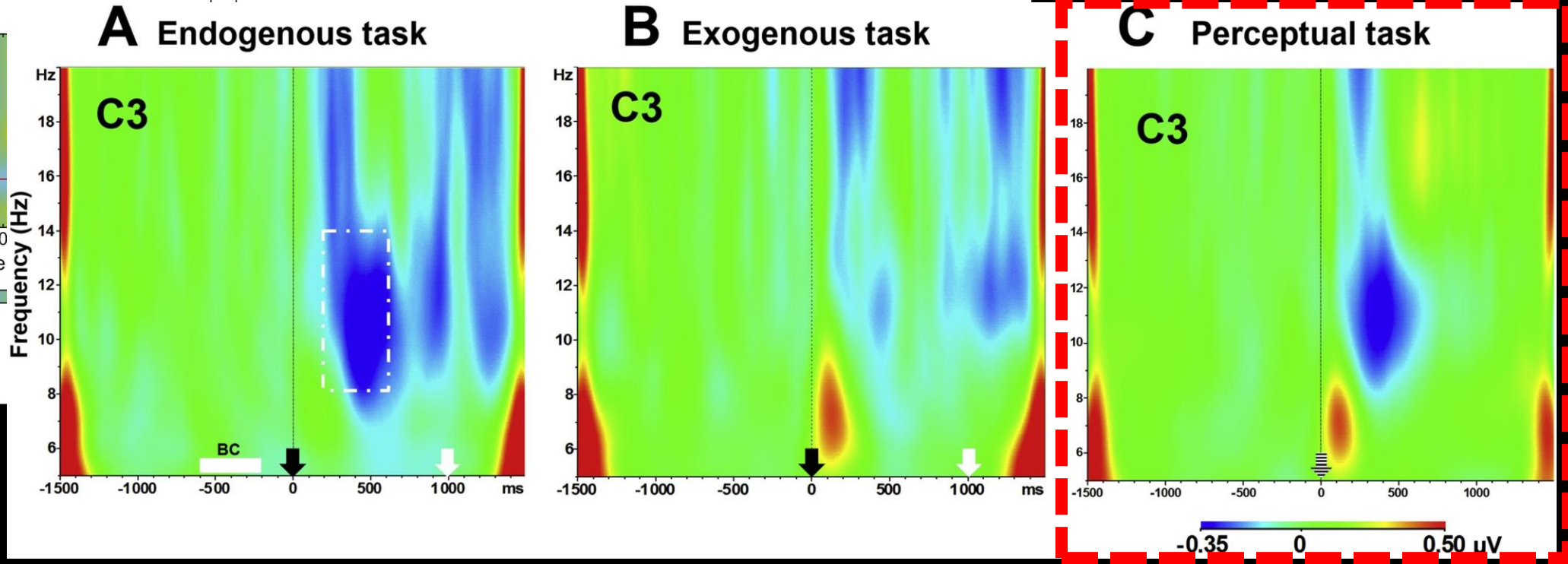
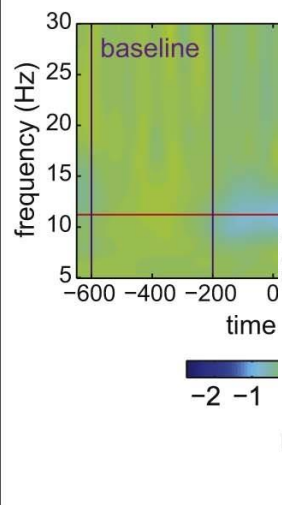
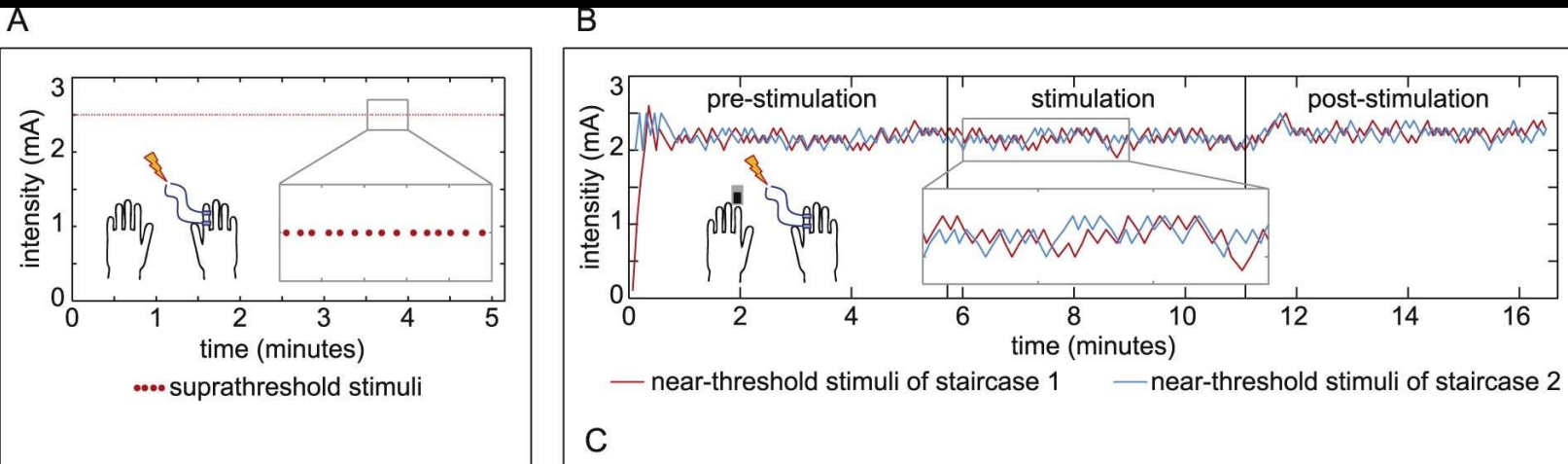


Alpha & attention

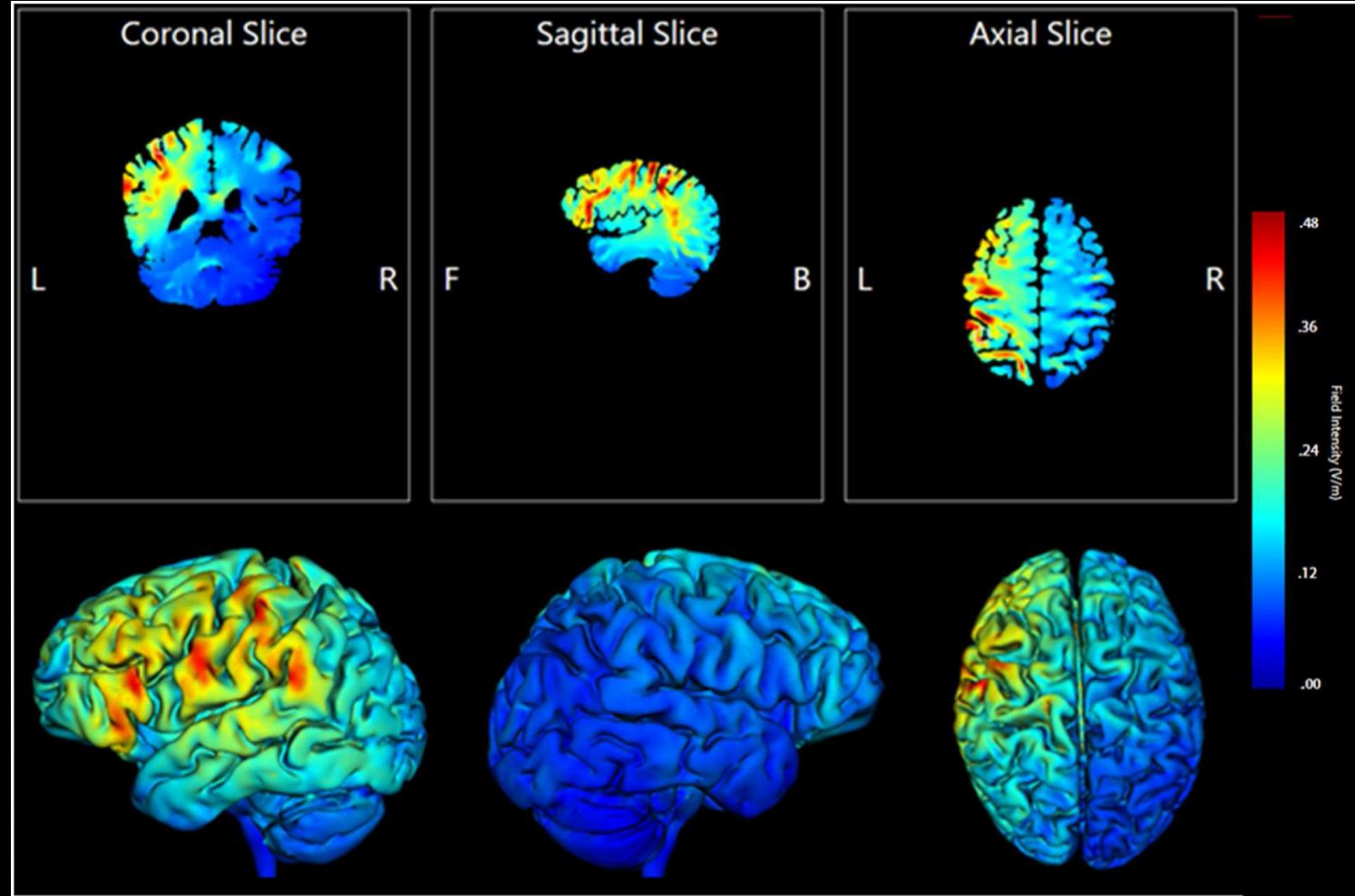
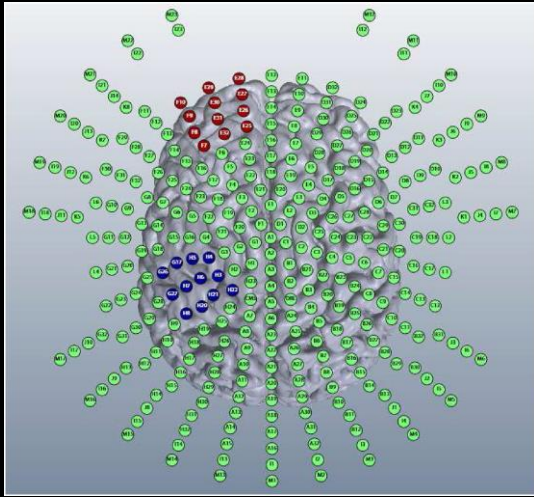




Silas, J., Tipple, A., & Jones, A. (2019). Event-related alpha desynchronization in touch—Comparing attention and perception. *Neuroscience Letters*.



Gundlach et al. (2016). Phasic modulation of human somatosensory perception by transcranially applied oscillating currents. Brain stimulation.






Pre-registration

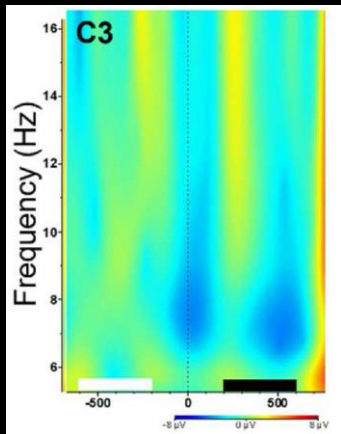
Design

- Alpha + sham 
- Alpha + sham + control (beta) 

Sample size estimation

- Powering critical effect of interest = 43 
- Powering smallest effect of interest = 56 
- Modelling sample size based on pilot data = 77 

EEG: Individual alpha frequency



Silas, J., Jones, A., Yarrow, K., & Anderson, W. (2023). Spatial attention is not affected by alpha or beta transcranial alternating current stimulation: A registered report. *Cortex*, 164, 33-50.

ALPHA

BETA

SHAM

tACS = 2mA

> 12 hours

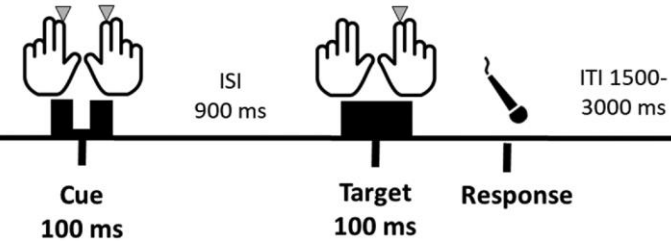
> 12 hours

tACS:
Endogenous &
Exogenous

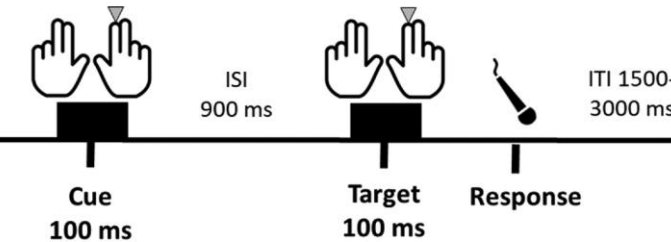
tACS:
Endogenous &
Exogenous

tACS:
Endogenous &
Exogenous

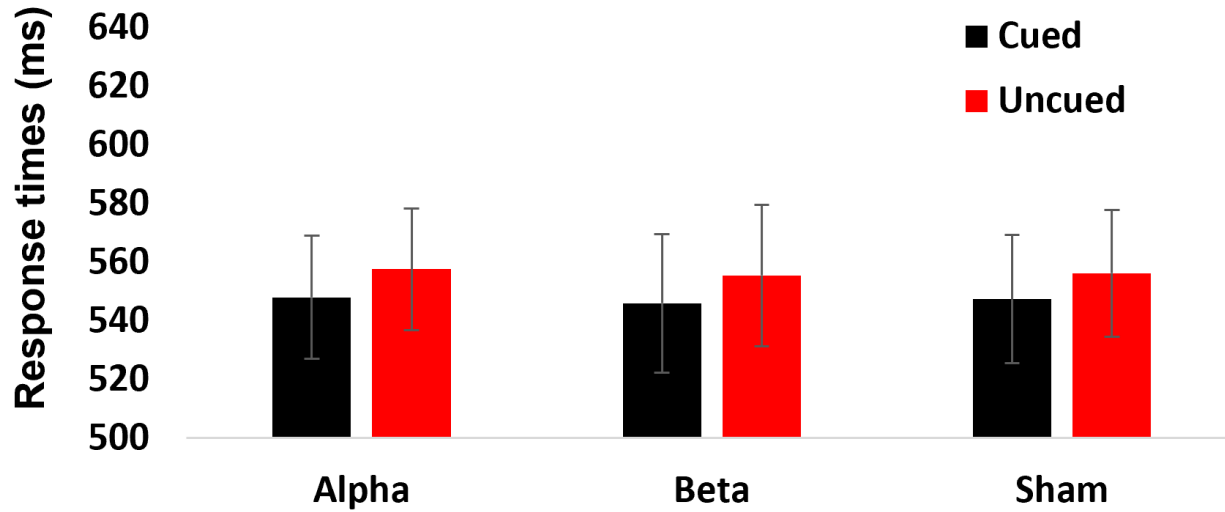
Endogenous task



Exogenous task



Endogenous task

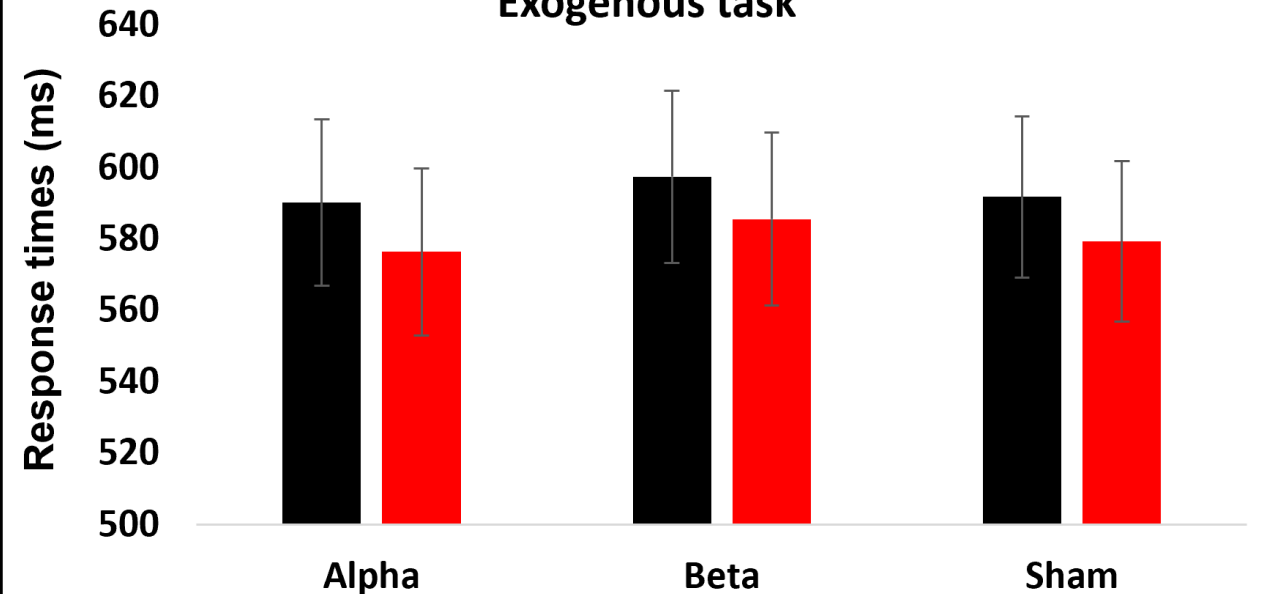


Task*Cue*Stimulation interaction
 $F = .21, p = .182 \eta_p^2 = .003.$

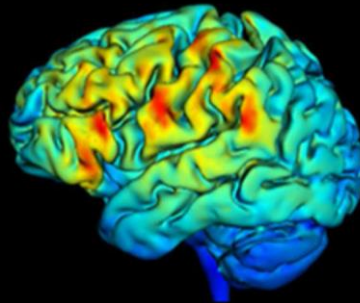
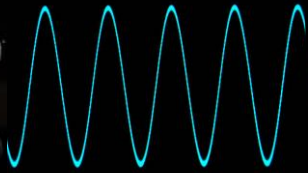
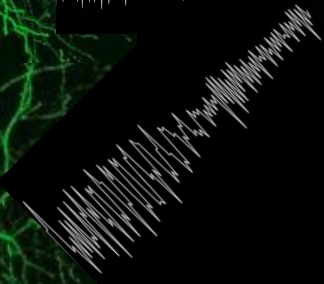
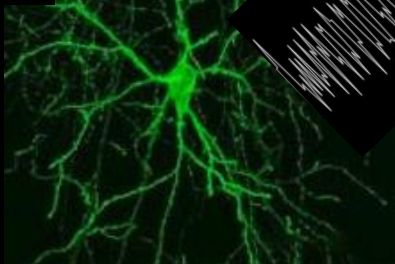
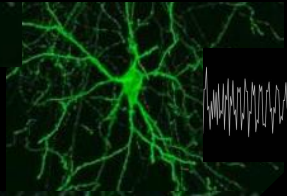
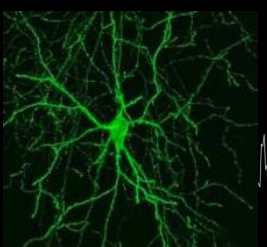
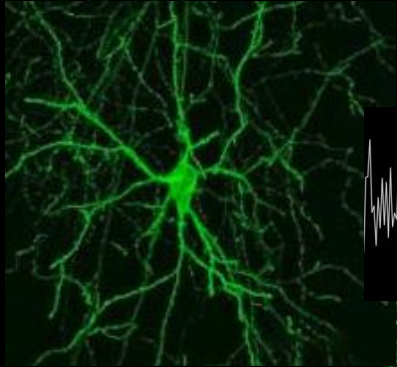
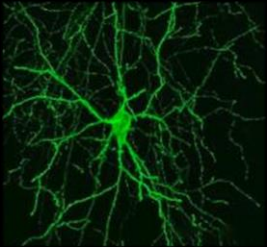
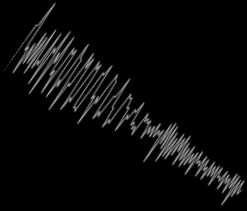
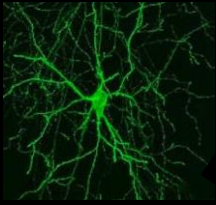
$BF_{10} = .047$

-> strong/moderate evidence for null

Exogenous task





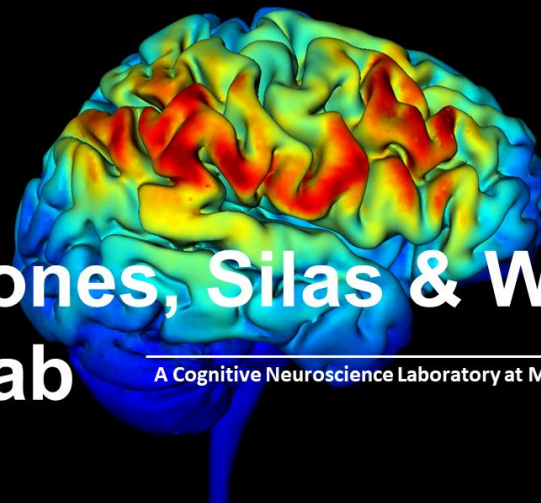




Wayne
Anderson



Kielan Yarrow



Jones, Silas & Ward Lab

A Cognitive Neuroscience Laboratory at Middlesex University



Middlesex
University
London



Thanks!



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