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www.jswlab.co.uk

Spatial attention not affected by tACS: a registered report

Alex Jones & Jon Silas



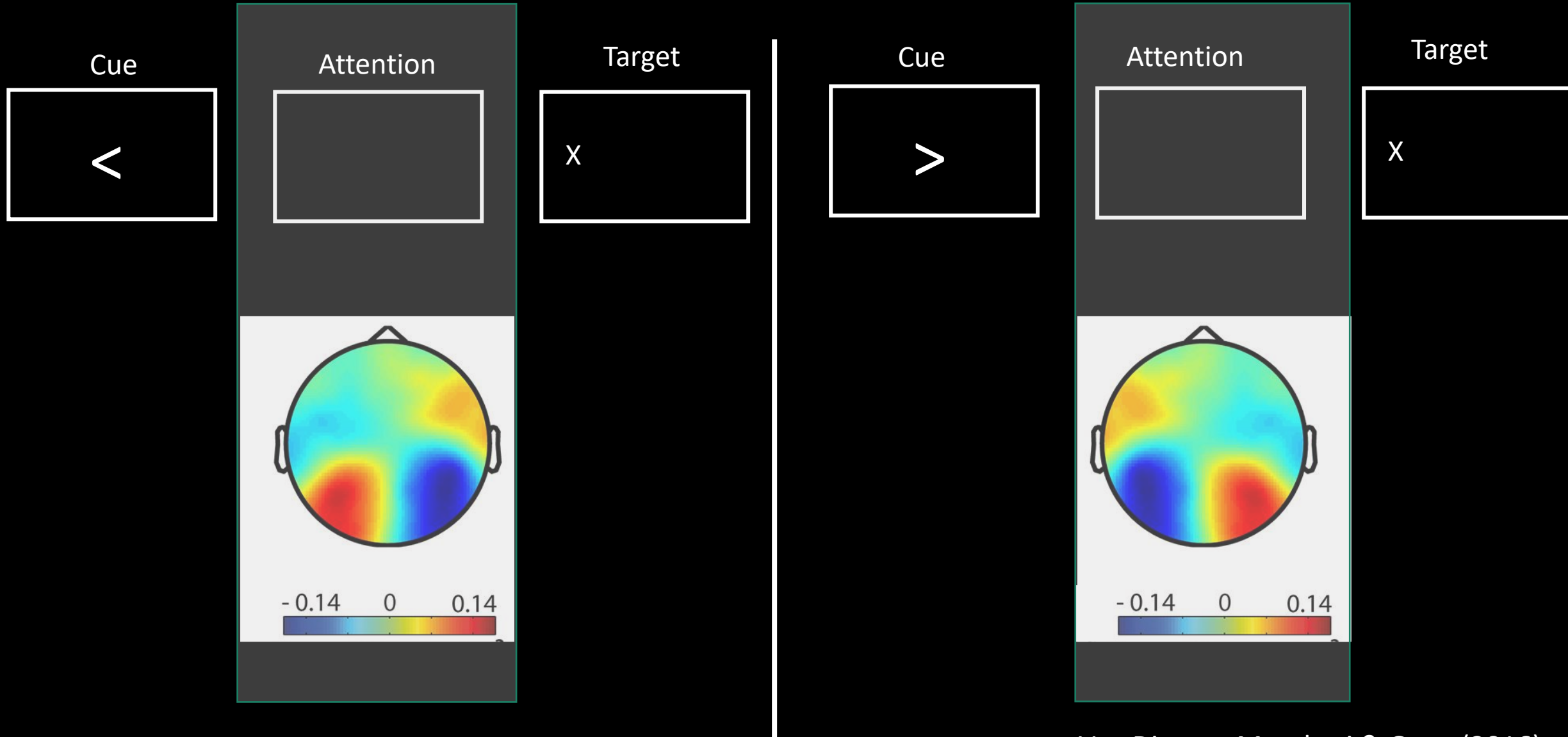
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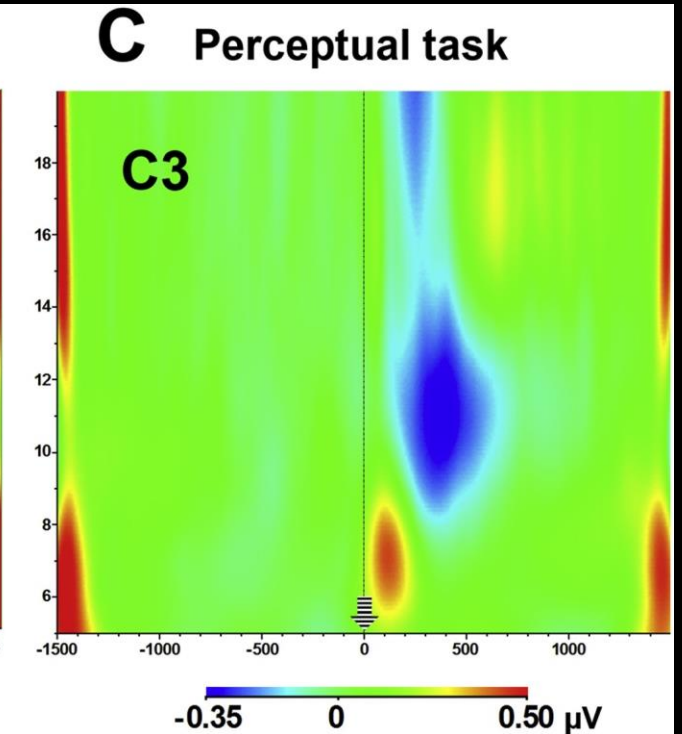
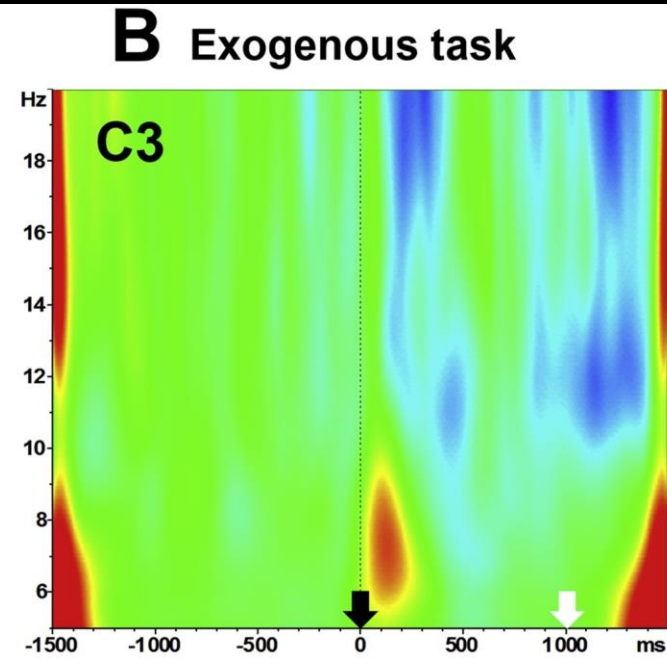
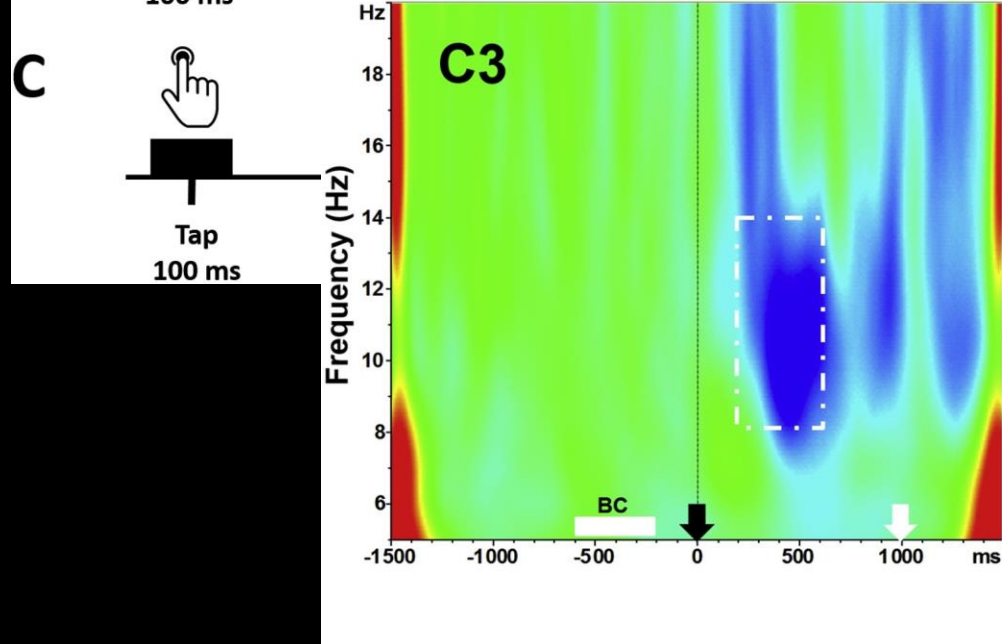
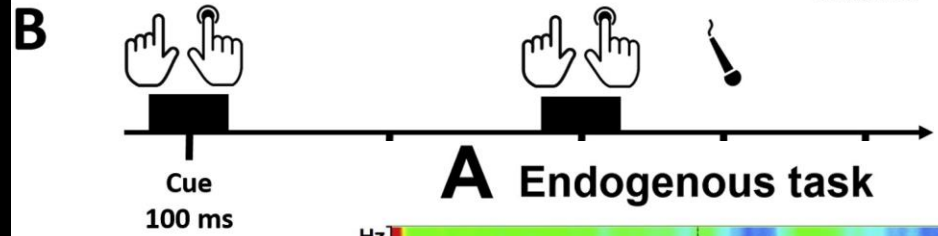
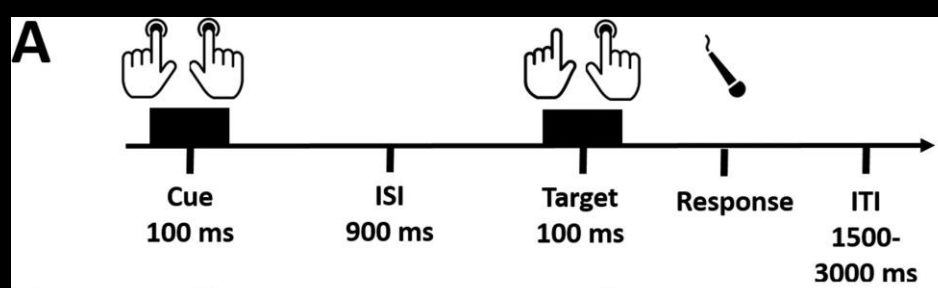


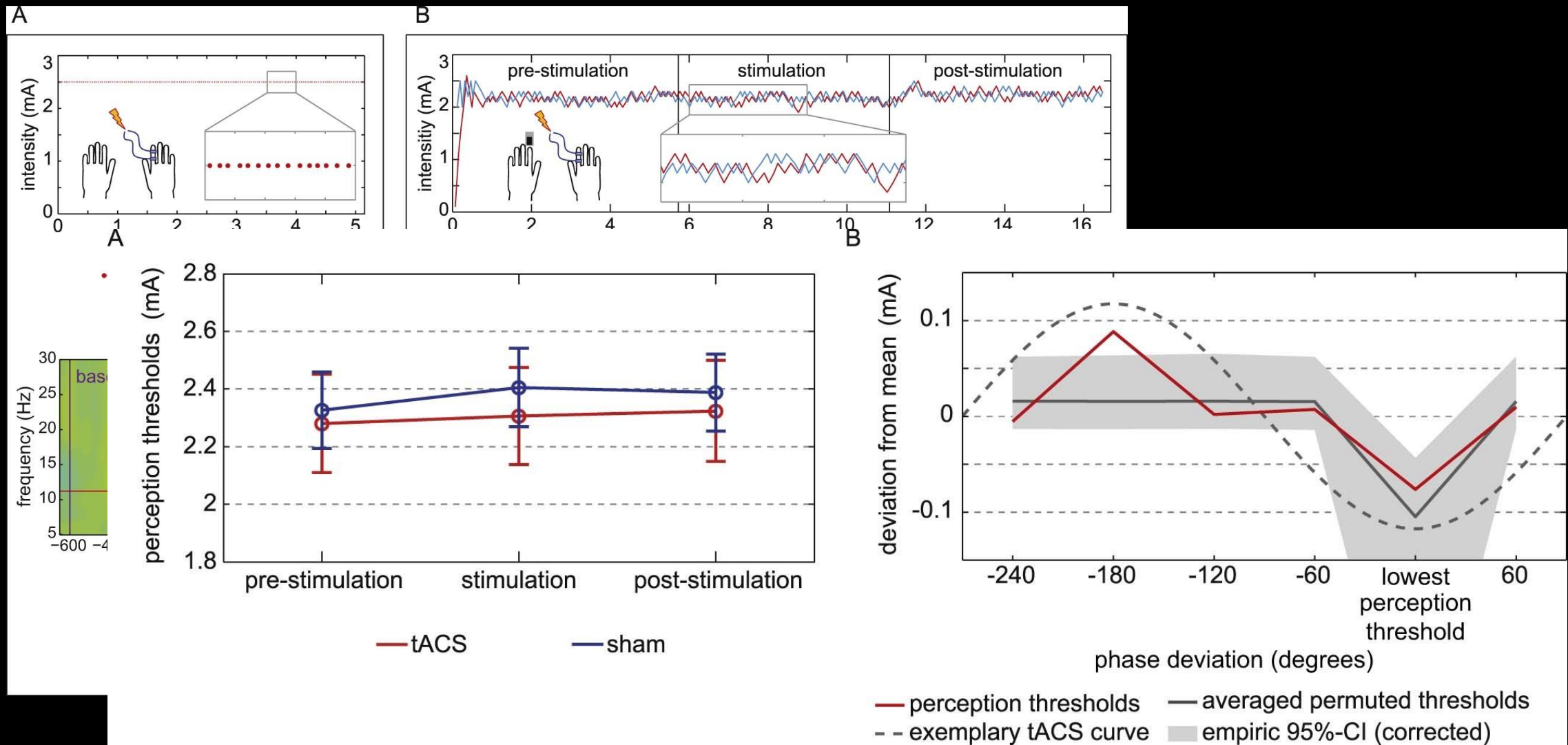
Alpha & attention



Van Diepen, Mazaheri & Geng (2016)

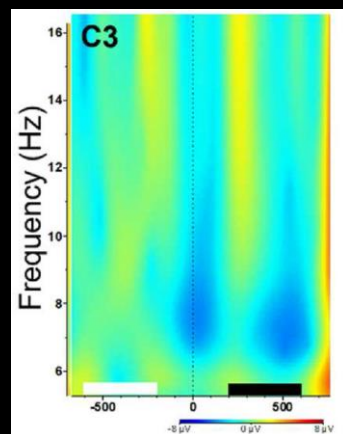
Silas, J., Tipple, A., & Jones, A. (2019). Event-related alpha desynchronization in touch—Comparing attention and perception. *Neuroscience Letters*.





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

EEG: Individual
alpha frequency



ALPHA

BETA

SHAM

tACS = 2mA

> 12 hours

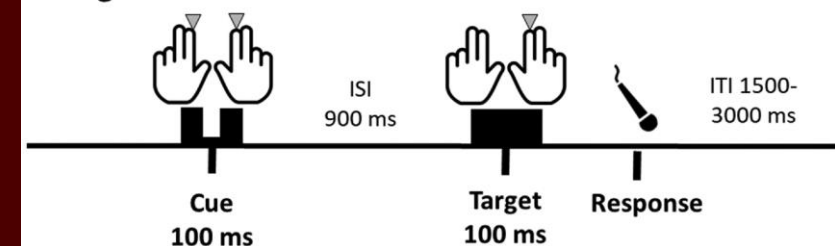
> 12 hours

tACS:
Endogenous &
Tactile Attention

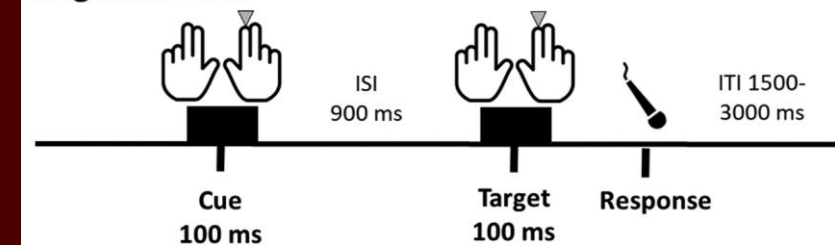
tACS:
Endogenous &
Tactile Attention

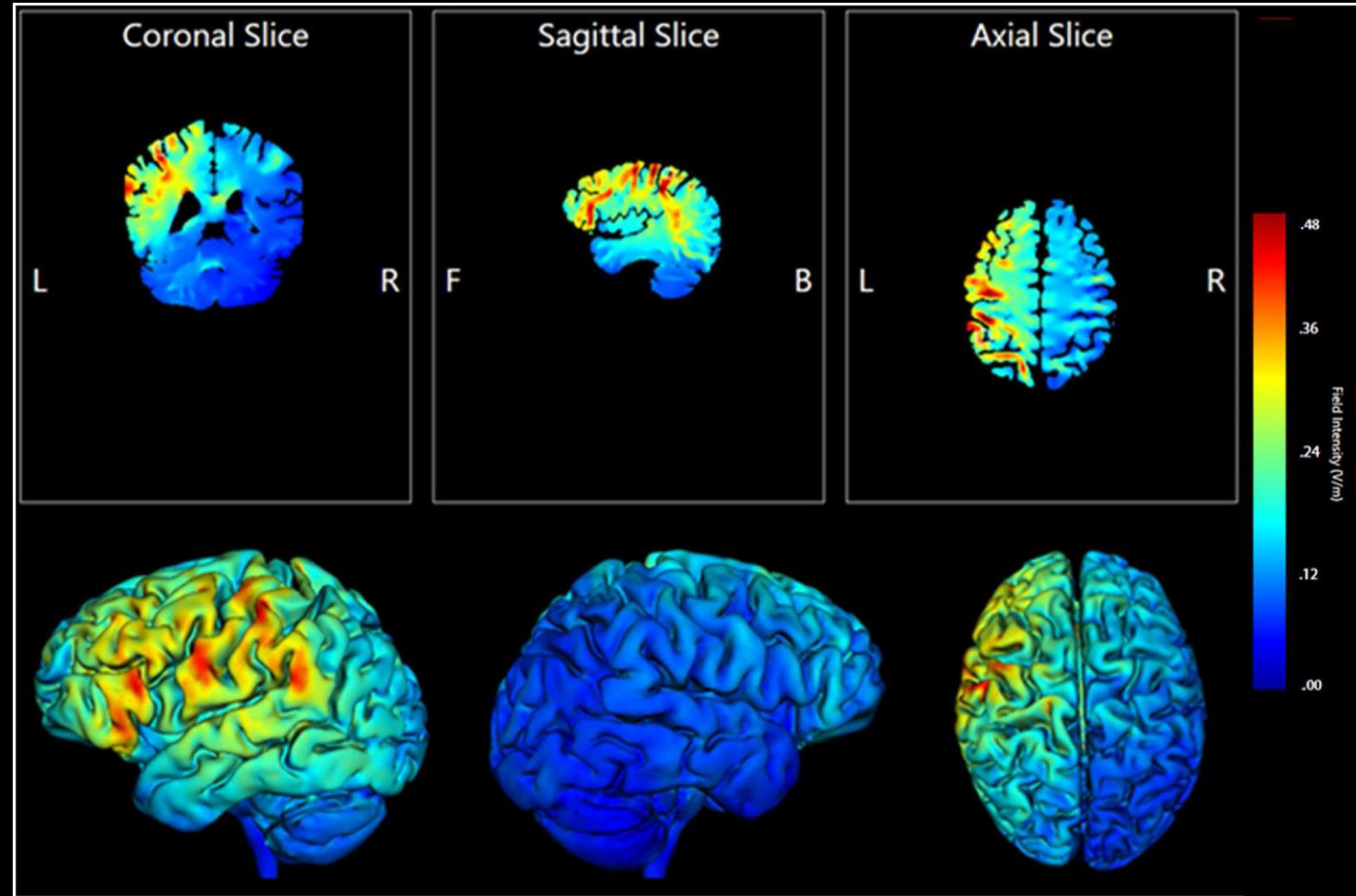
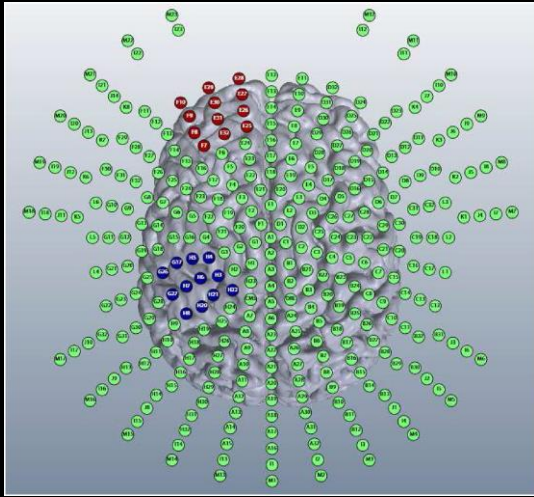
tACS:
Endogenous &
Tactile Attention

Endogenous task






Exogenous task





Pre-registration

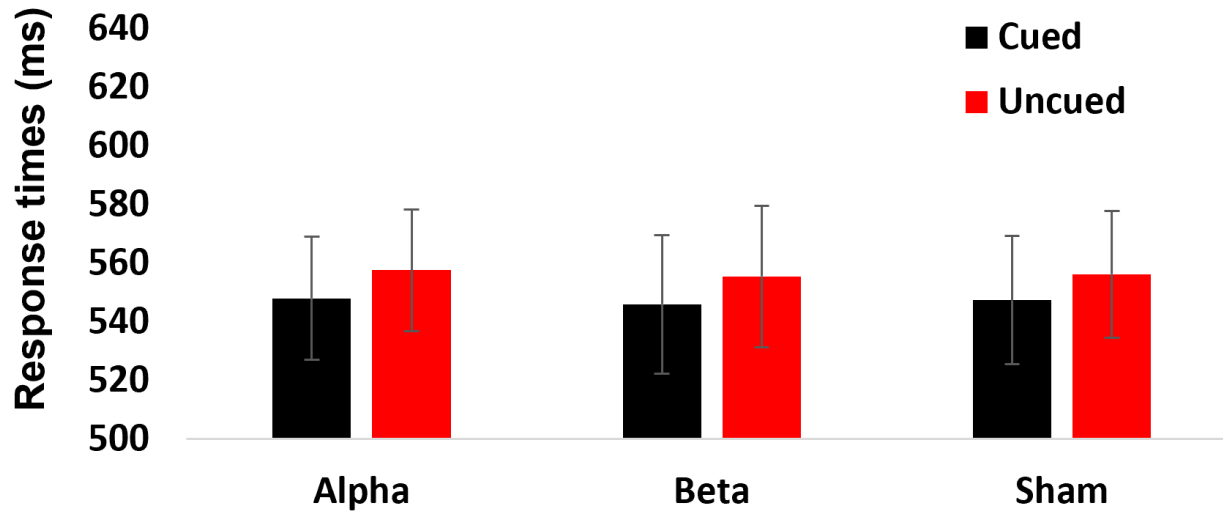
Sample size estimation

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

Design

- One sham 
- One sham + one control 

Endogenous task

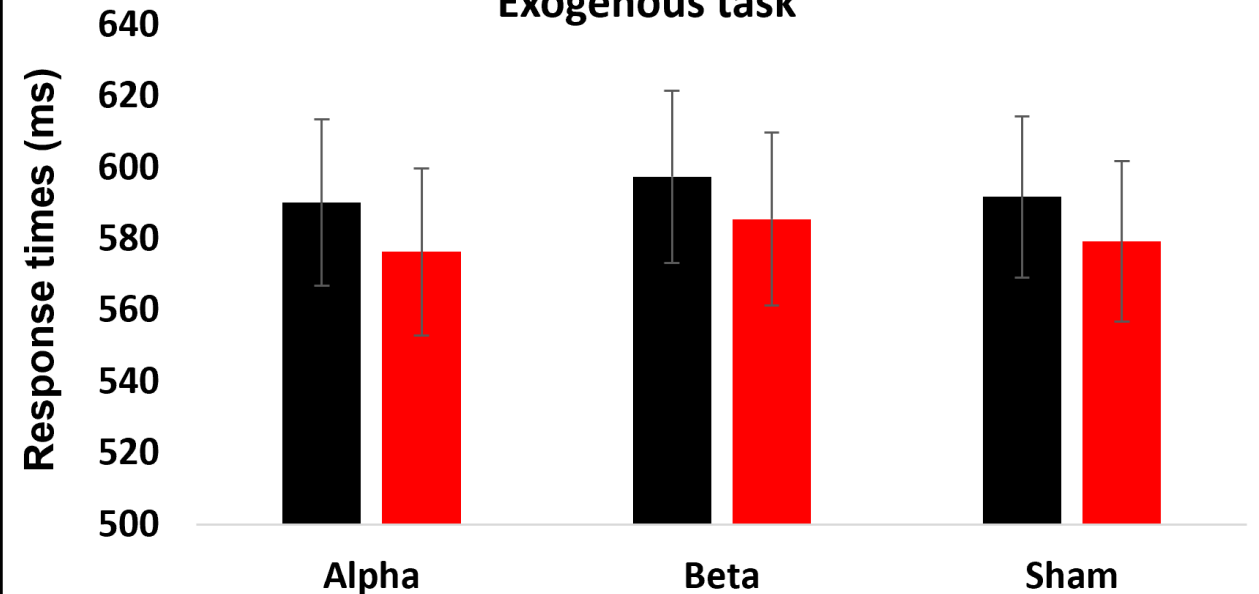


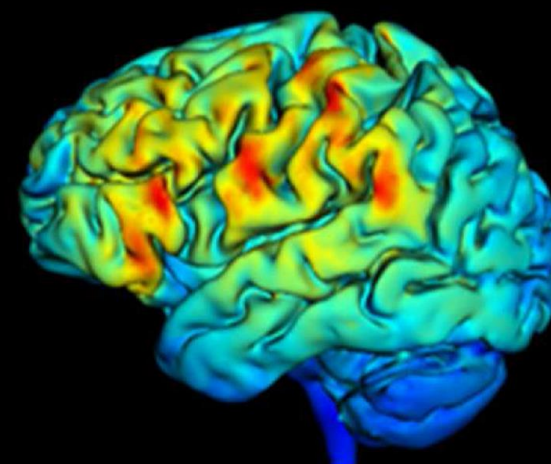
Task*Cue*-Stimulation interaction
 $F = .21, p = .182 \eta_p^2 = .003.$

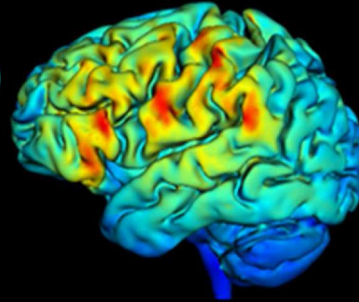
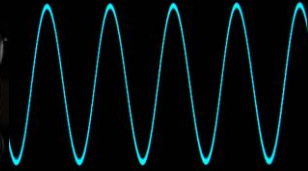
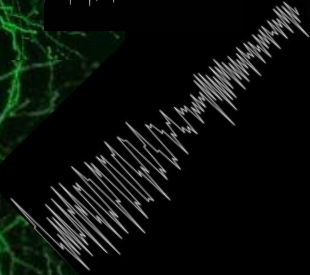
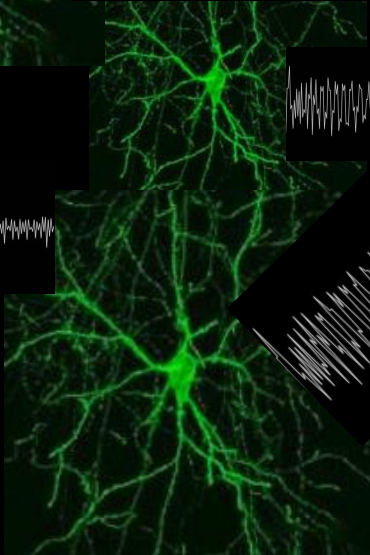
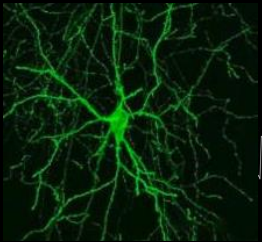
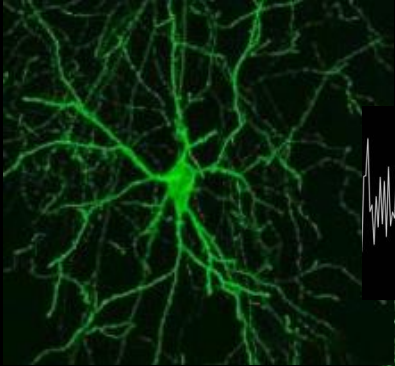
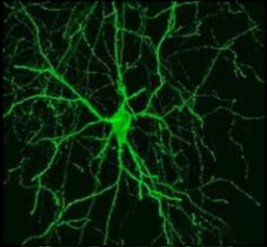
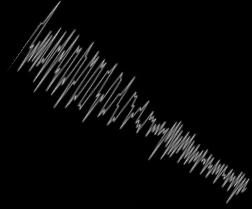
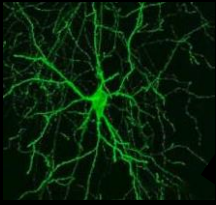
$BF_{10} = .047$

-> strong/moderate evidence for null

Exogenous task







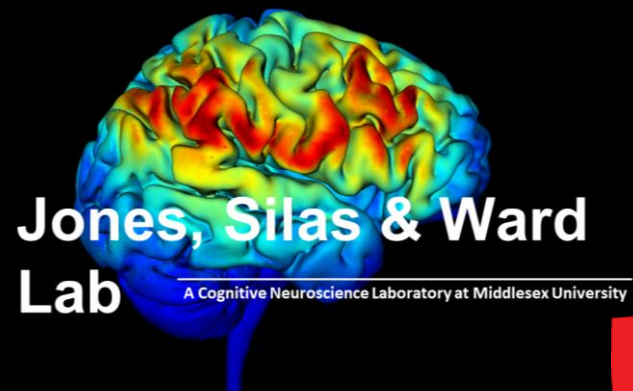
Thanks



Wayne
Anderson



Kielan Yarrow



Middlesex
University
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