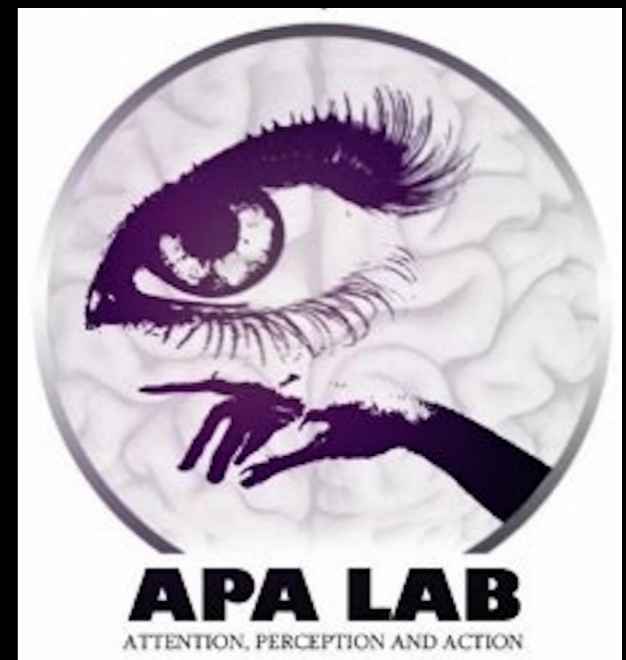


# The Effects of Cerebellar Transcranial Direct Current Stimulation (tDCS) on Voluntary Covert Attention

Nadia Botha

Supervisor: Dr. Chris Striemer

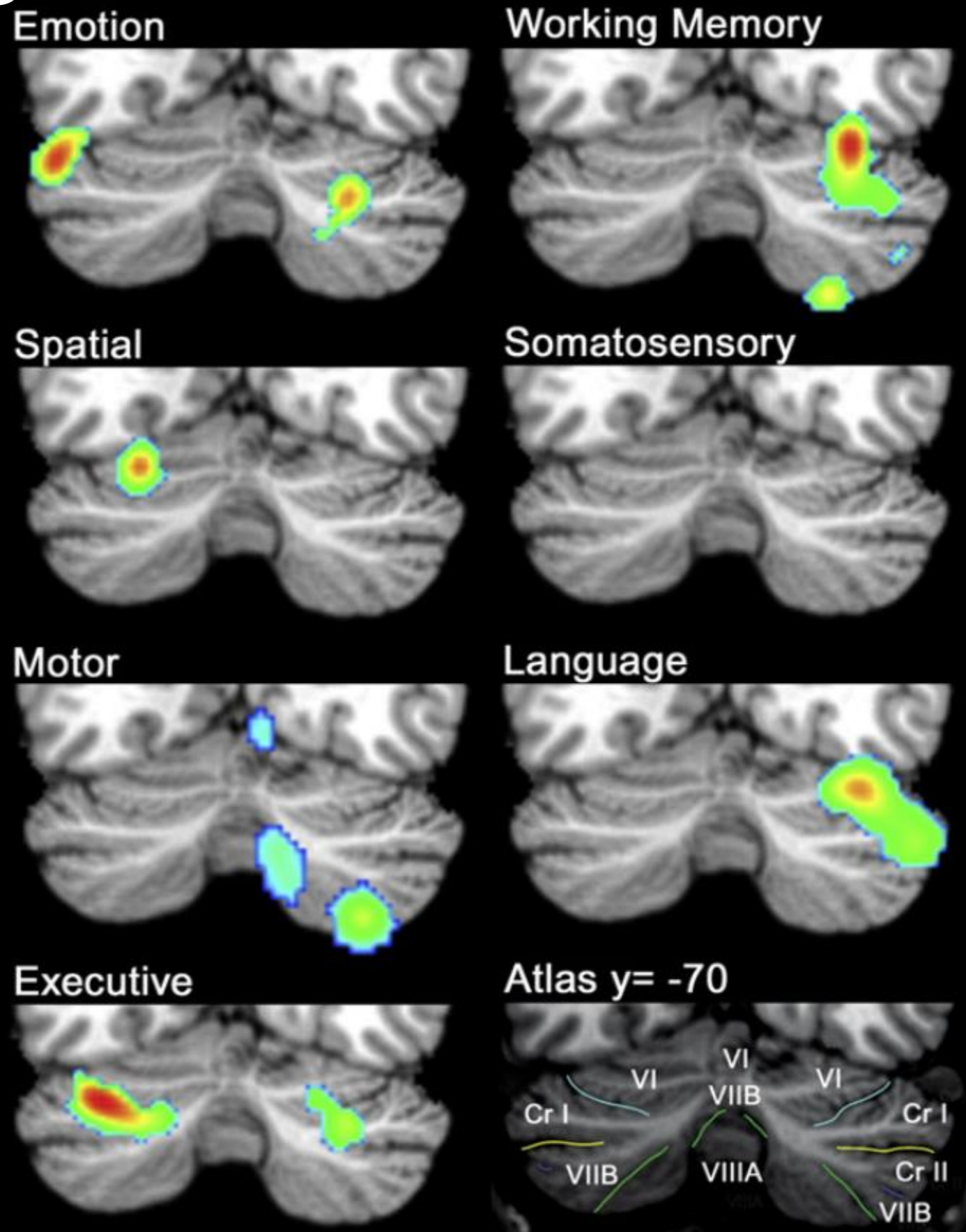


# The Cerebellum



# Imaging Studies

- Functional topography of higher cognitive functions



Stoodley & Schmahmann (2008)



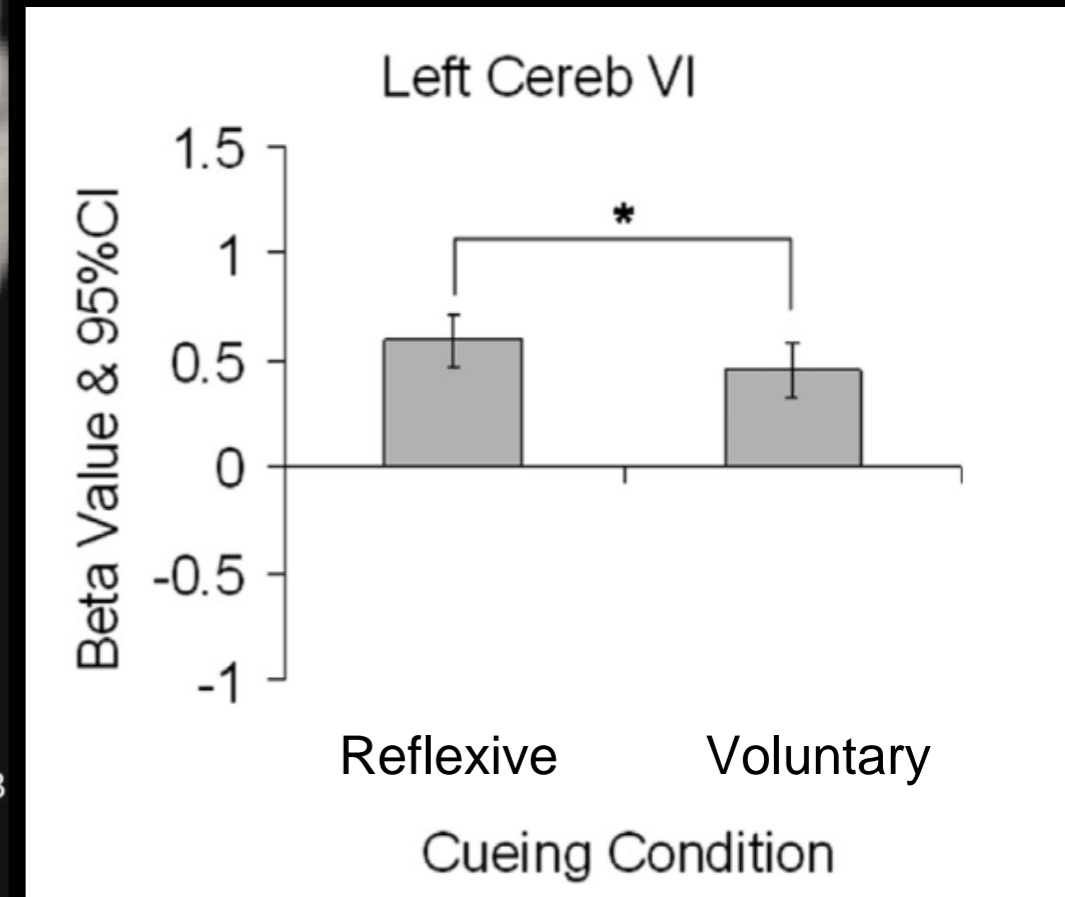
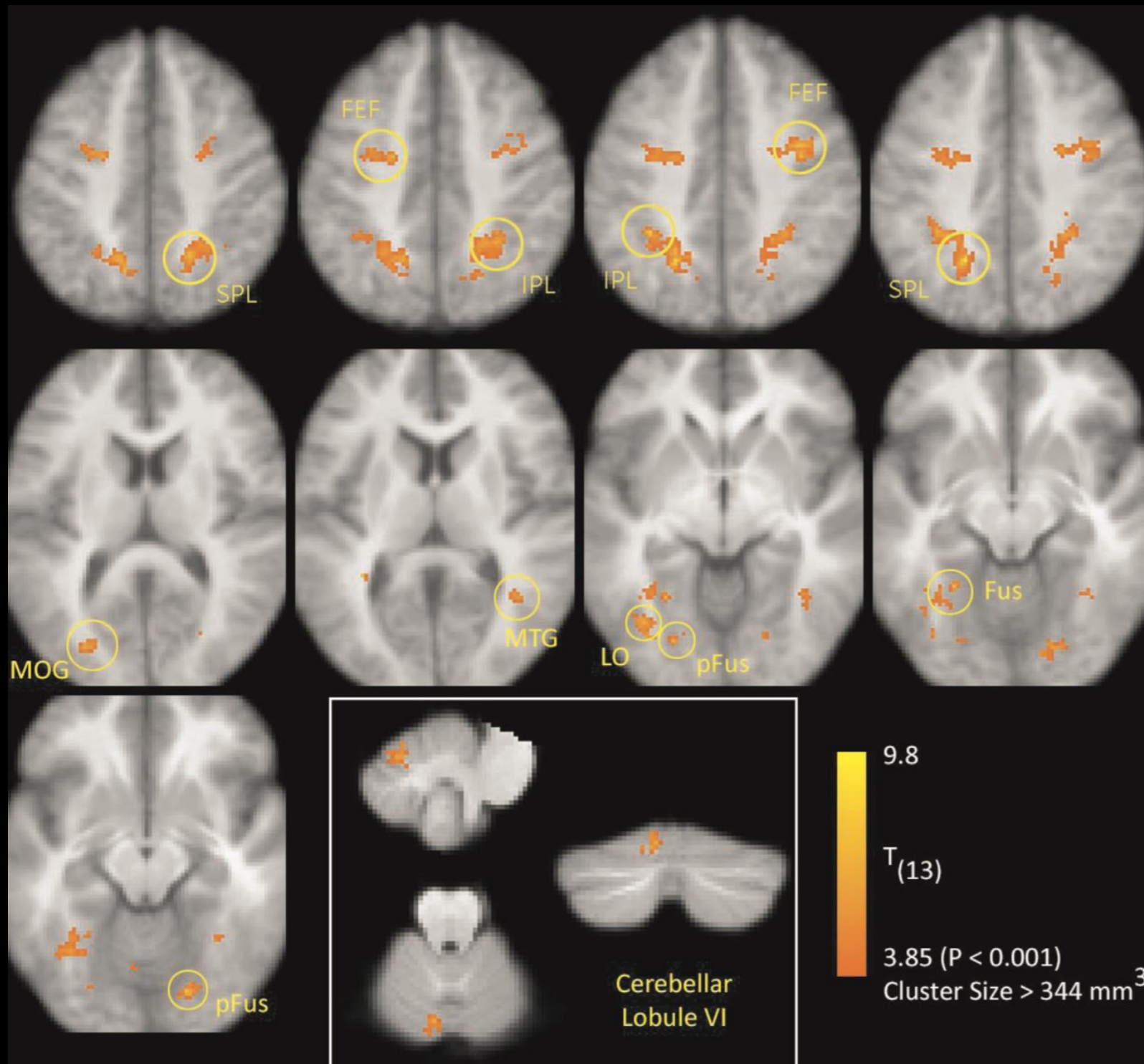
# Voluntary Covert Attention

- Overt vs.  
Covert
- Voluntary vs.  
Reflexive



# Imaging Studies

Strierner, Chouinard, Goodale & de Ribaupierre (2015)



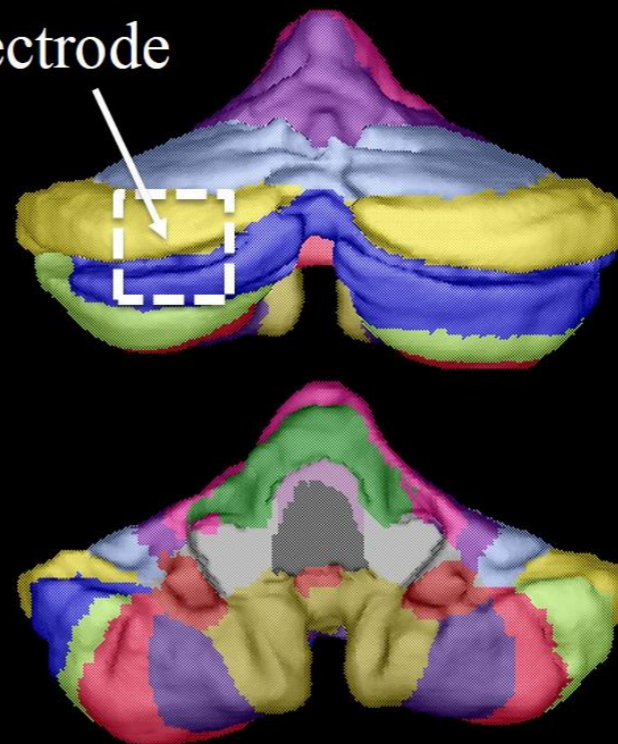


# tDCS and the Cerebellum

- Anodal (+), Cathodal (-), Sham
- 20 minutes, 2mA (Pope, 2015)



tDCS  
electrode

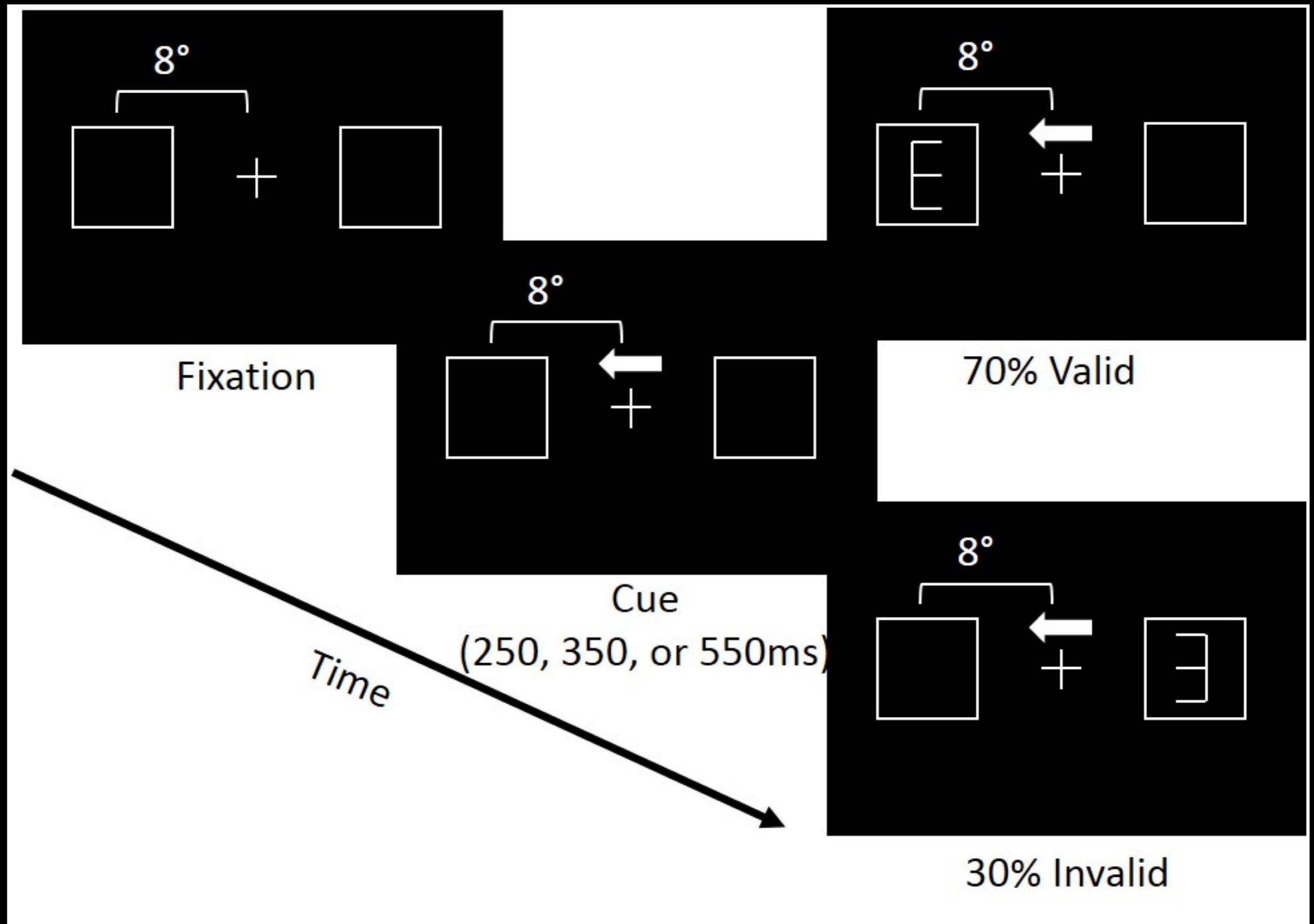


- Lobe I & II
- Lobe III
- Lobe IV
- Lobe V
- Lobe VI
- Lobe CR I & VII Af
- Lobe CR II & VII At
- Lobe VII B
- Lobe VIII A
- Lobe VIII B
- Lobe IX
- Lobe X
- White matter / brainstem
- Fourth ventricle





# Voluntary Covert Attention Task

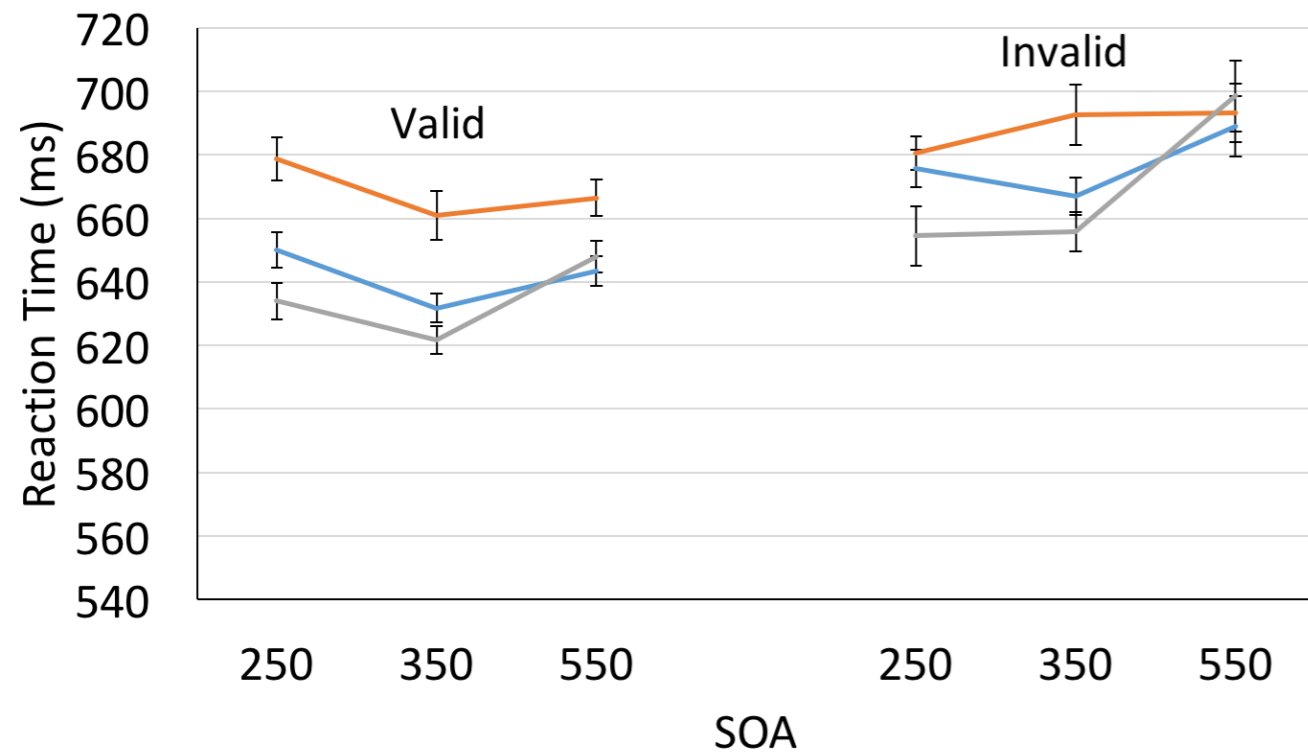


# Results

- 21 participants

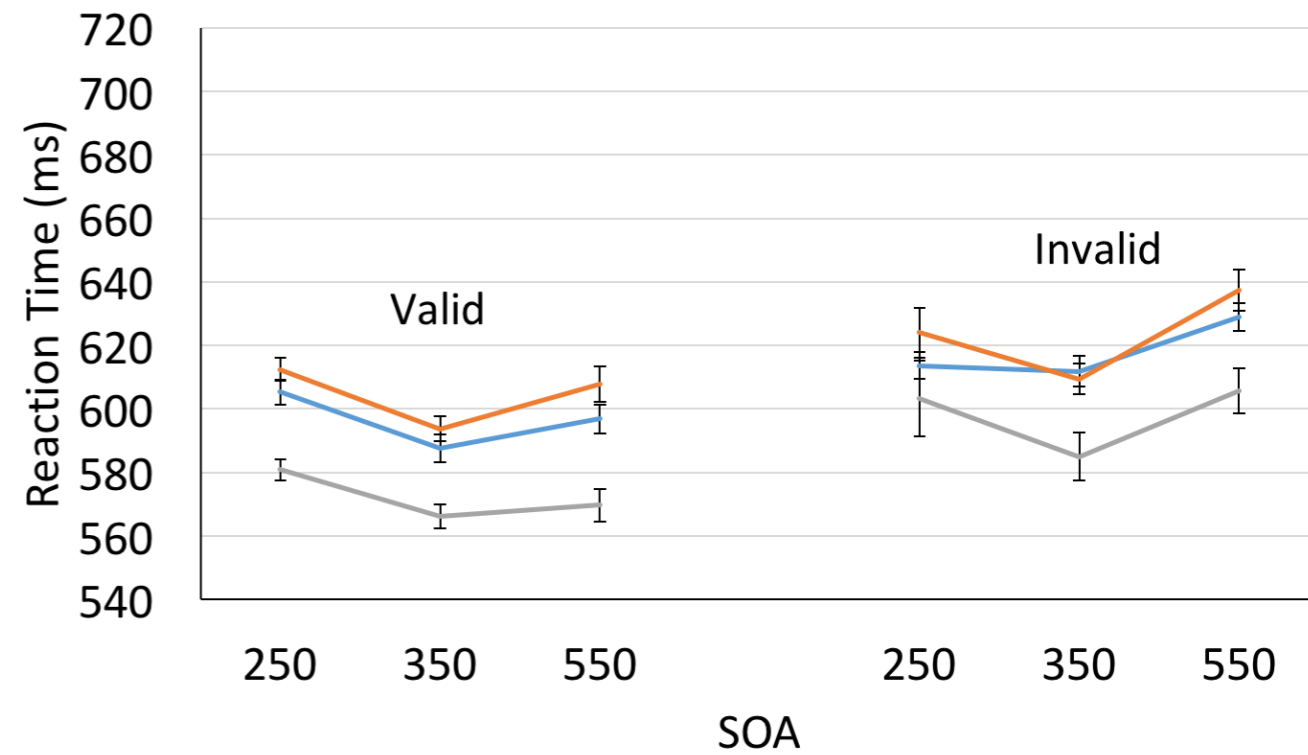
Pre: tDCS x Cue x SOA

— Sham — Anodal — Cathodal



Post: tDCS x Cue x SOA

— Sham — Anodal — Cathodal





# Future Considerations

- **Cerebellum involvement in voluntary versus reflexive attention**
- **Measuring performance *during* tDCS**

Thank you 😊