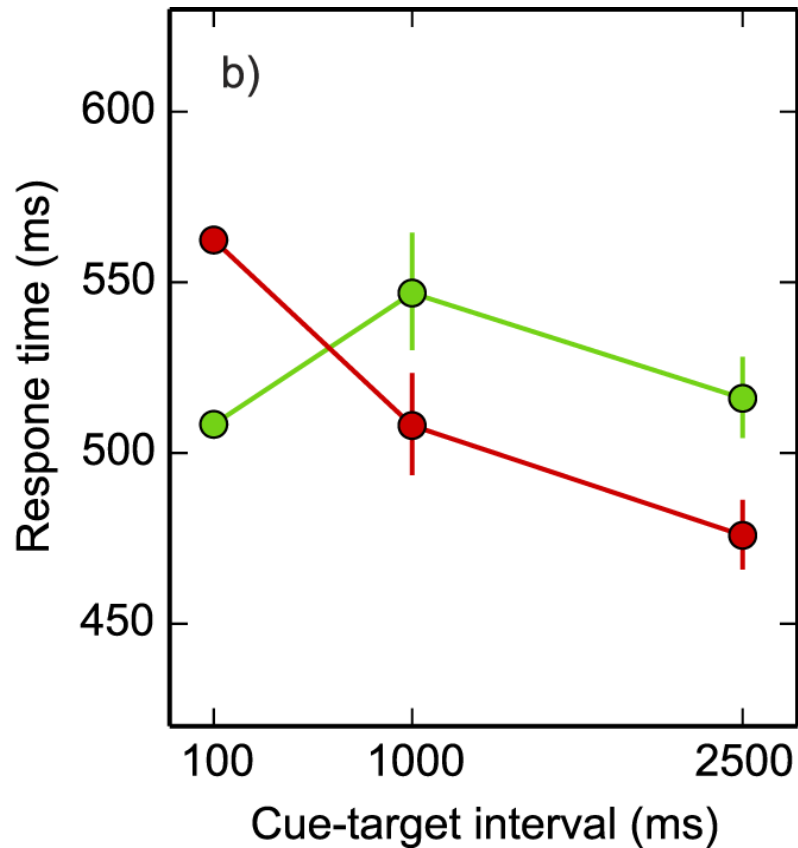
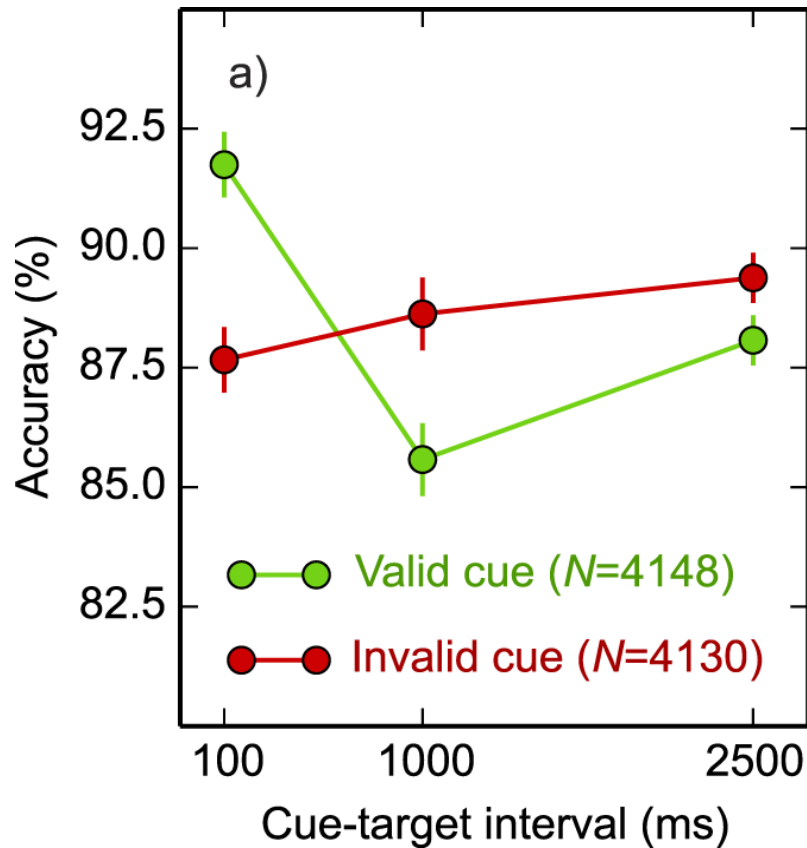


Neural Correlates of Auditory Attention in an Exogenous Orienting Task

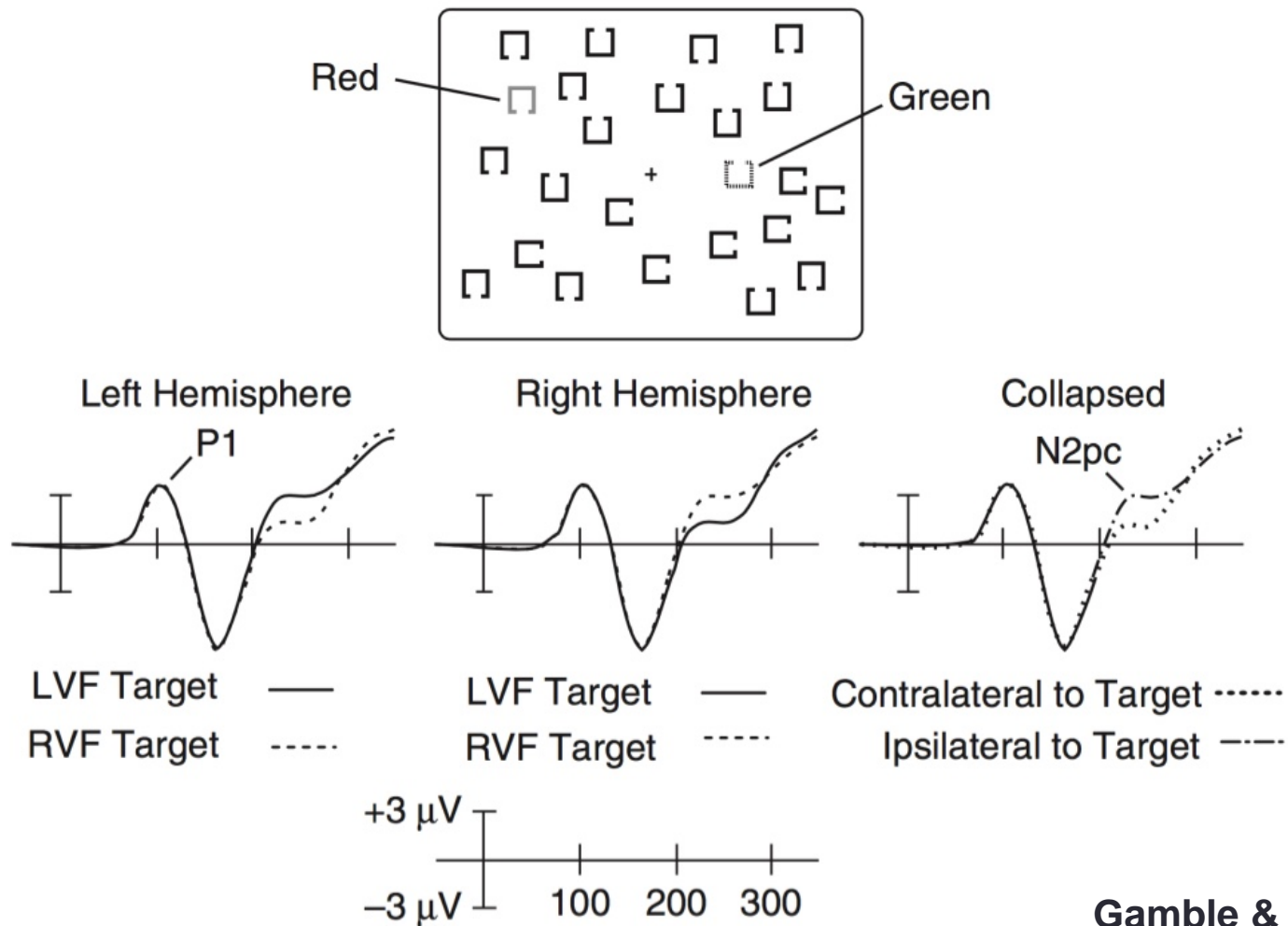


Maia Scarpetta, Michael Pitts,
& Enriqueta Canseco-Gonzalez

Inhibition of return vs. Facilitation

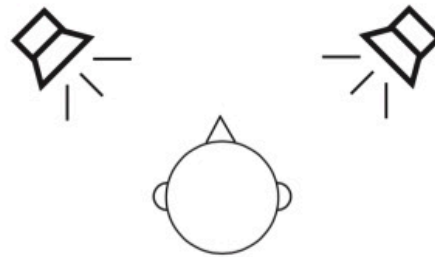


The N2pc

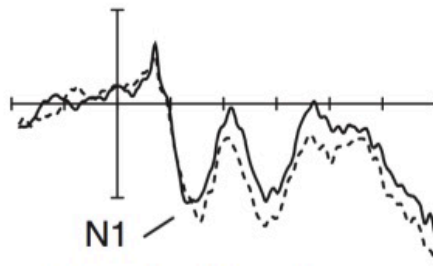


The N2ac

B

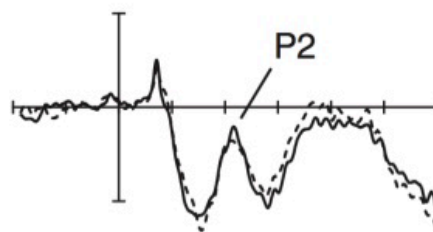


Left Hemisphere



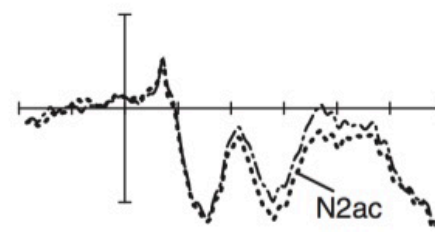
Target from Left Speaker —
Target from Right Speaker - - - -

Right Hemisphere

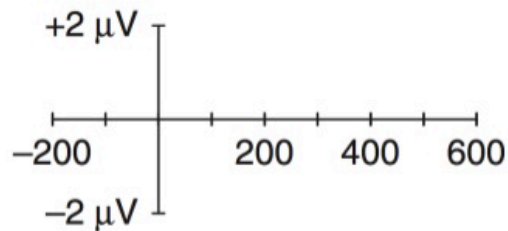


Target from Left Speaker —
Target from Right Speaker - - - -

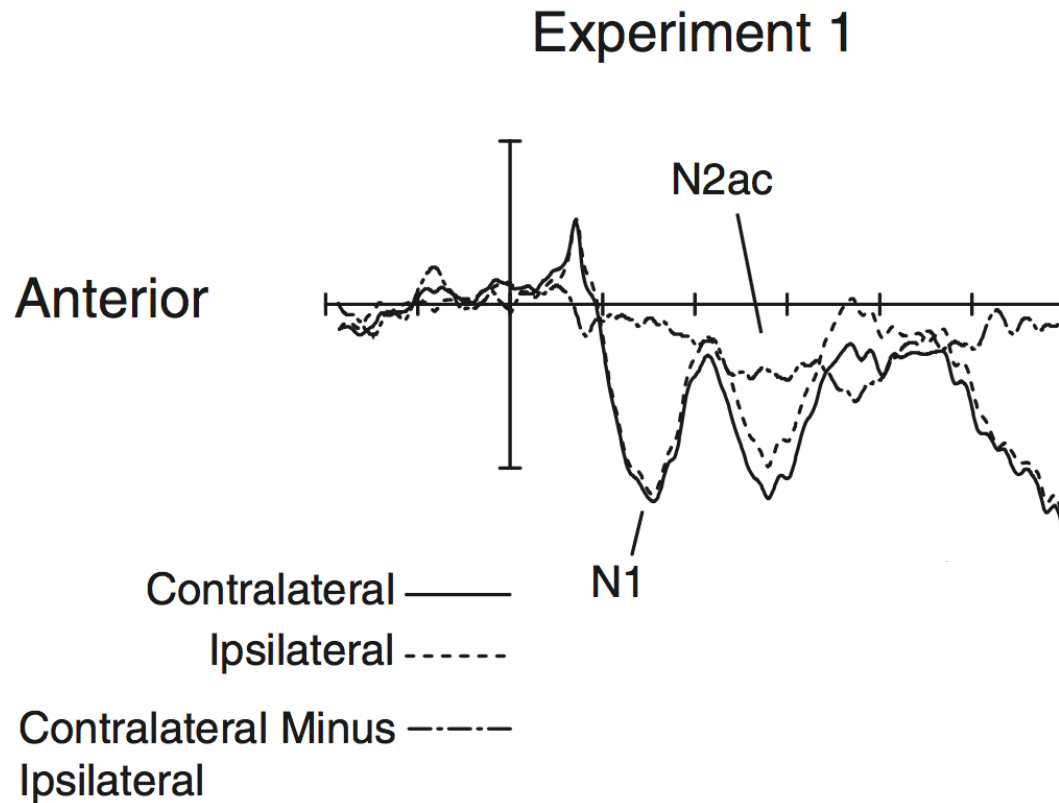
Collapsed



Contralateral to Target - - - -
Ipsilateral to Target - - - -



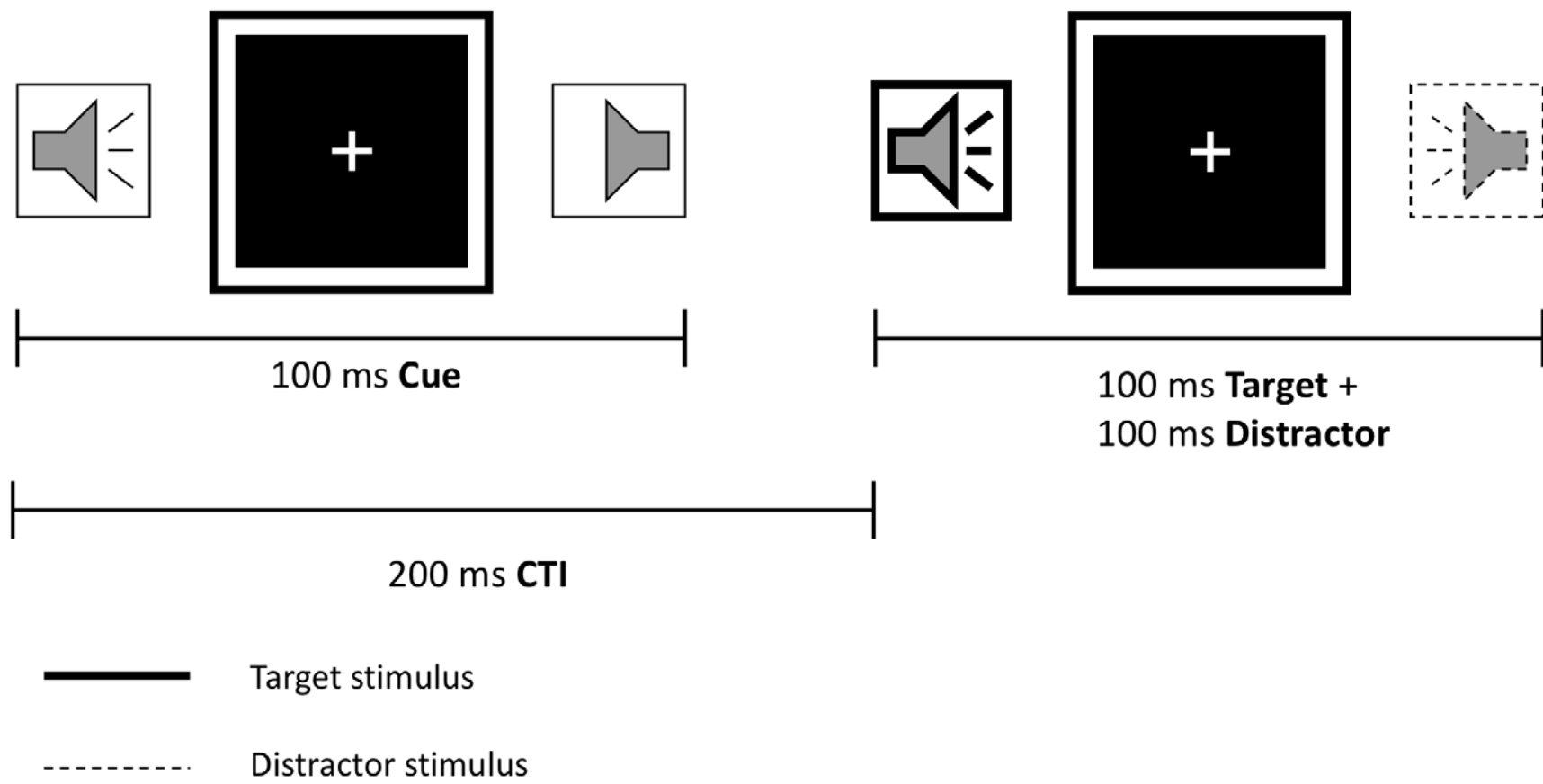
The N2ac



Our Study

- Design:
 - 2 CTIs: 200 ms (short) and 700 ms (long)
 - Discrimination task instead of detection task
 - 2 possible targets: low pitch and high pitch
 - Distractor stimulus (white noise) presented simultaneously on the opposite side of the target
- Nineteen subjects (Reed College students)

Valid Left Short CTI trial



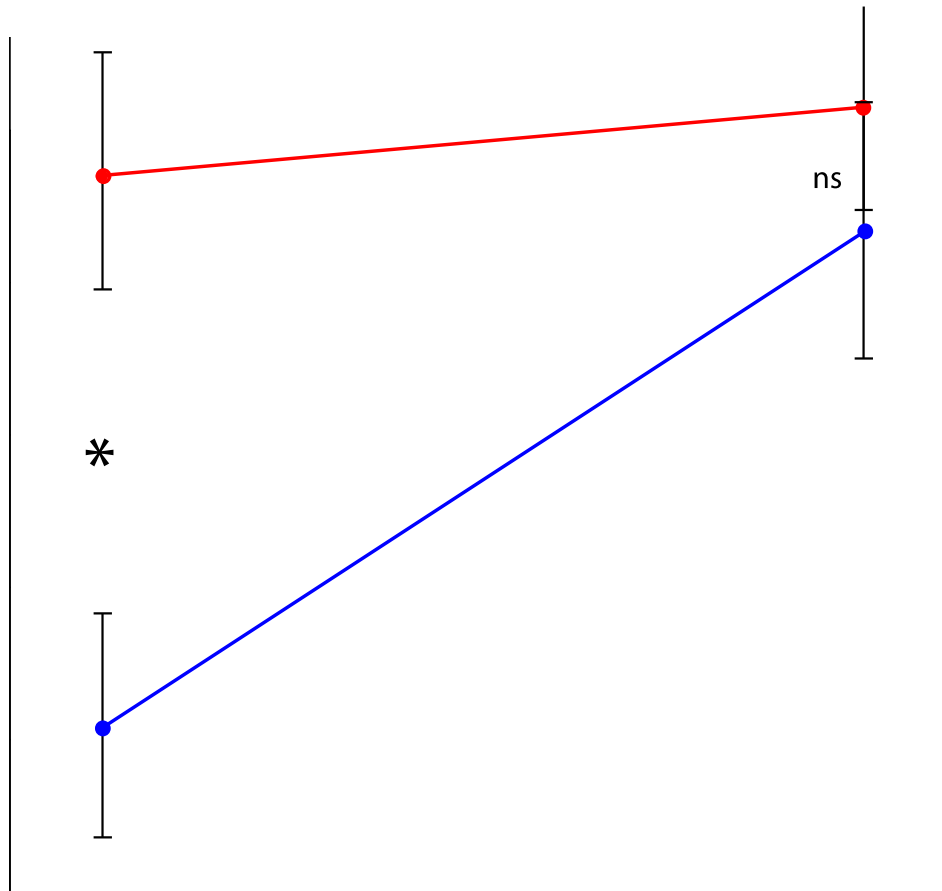
Hypotheses

- Will the IOR or facilitation phenomenon elicit the N2ac?
 - Gamble & Luck 2011
- Will the N2ac with long CTI show a difference in amplitude to valid vs. invalid trials?
 - McDonald et al. 2009
- Will the N2ac with a long CTI show a difference in latency to valid vs. invalid trials?
 - Yang et al. 2012

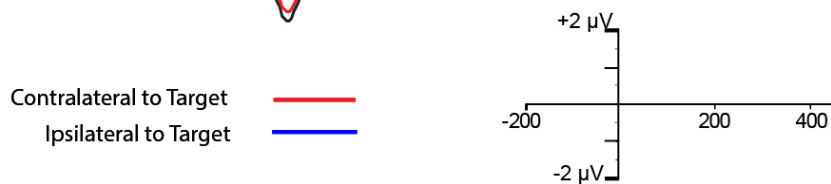
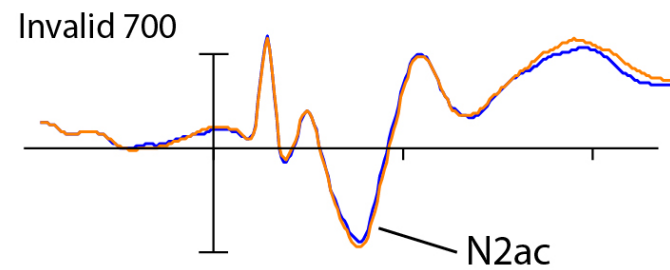
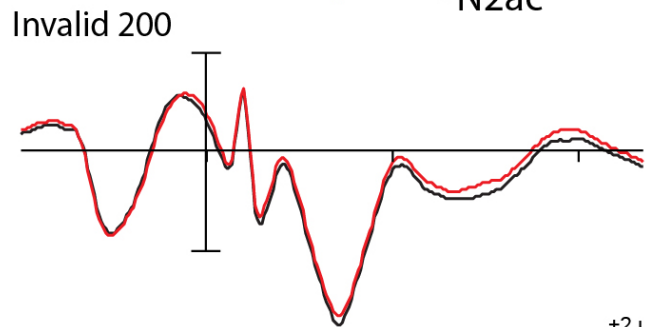
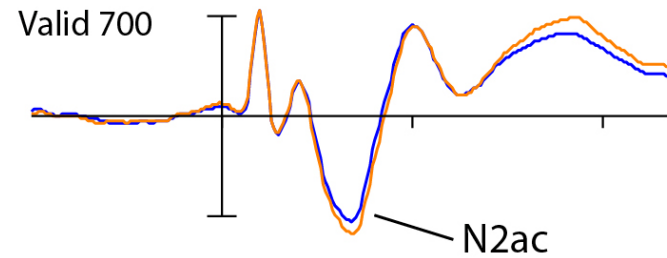
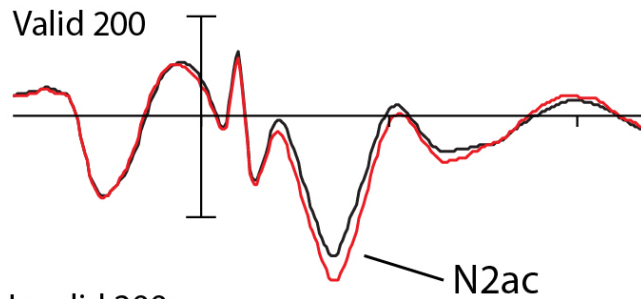
N2ac Predictions

	200 CTI	700 CTI
Valid	N2ac Larger amplitude Earlier latency	N2ac Smaller amplitude Delayed latency
Invalid	N2ac Smaller amplitude Delayed latency	N2ac Larger amplitude Earlier latency

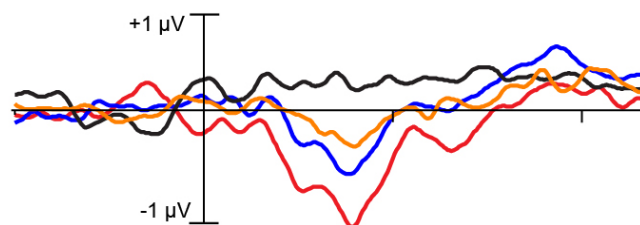
Results: Reaction Times



Results: the N2ac

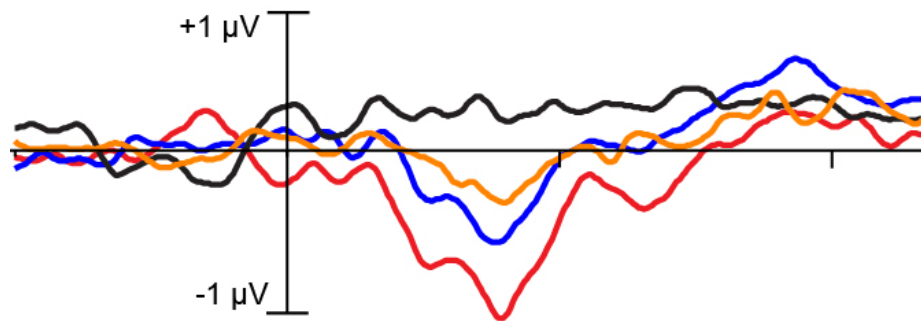


Contralateral to Target ————
Ipsilateral to Target ————

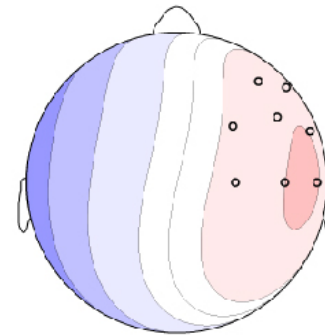


Valid 200 ————
Valid 700 ————
Invalid 200 ————
Invalid 700 ————

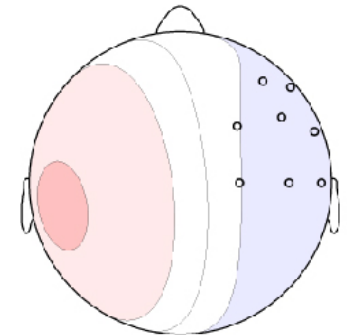
Results: Difference waves



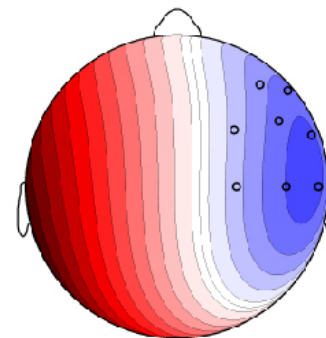
Valid 200 —
Valid 700 —
Invalid 200 —
Invalid 700 —



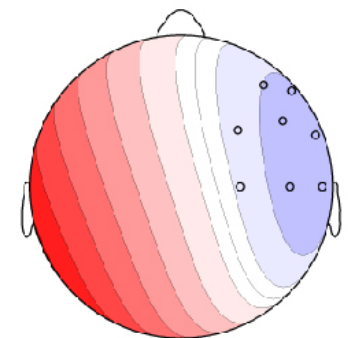
Invalid 200



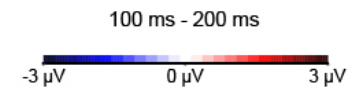
Invalid 700



Valid 200



Valid 700



N2ac Findings

	200 CTI	700 CTI
Valid	N2ac Largest amplitude	N2ac Smaller amplitude
Invalid	No N2ac	N2ac Smaller amplitude

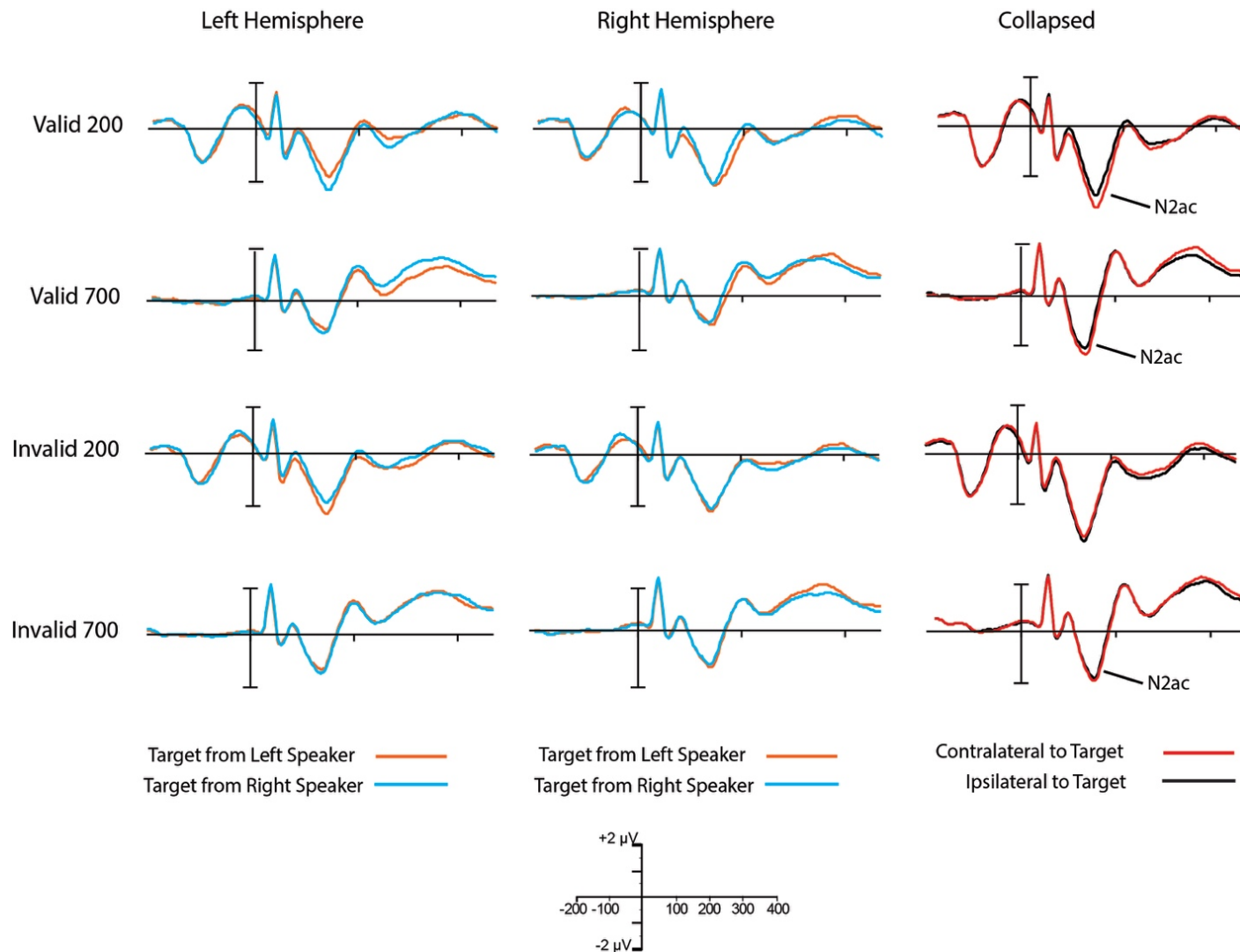
Conclusion

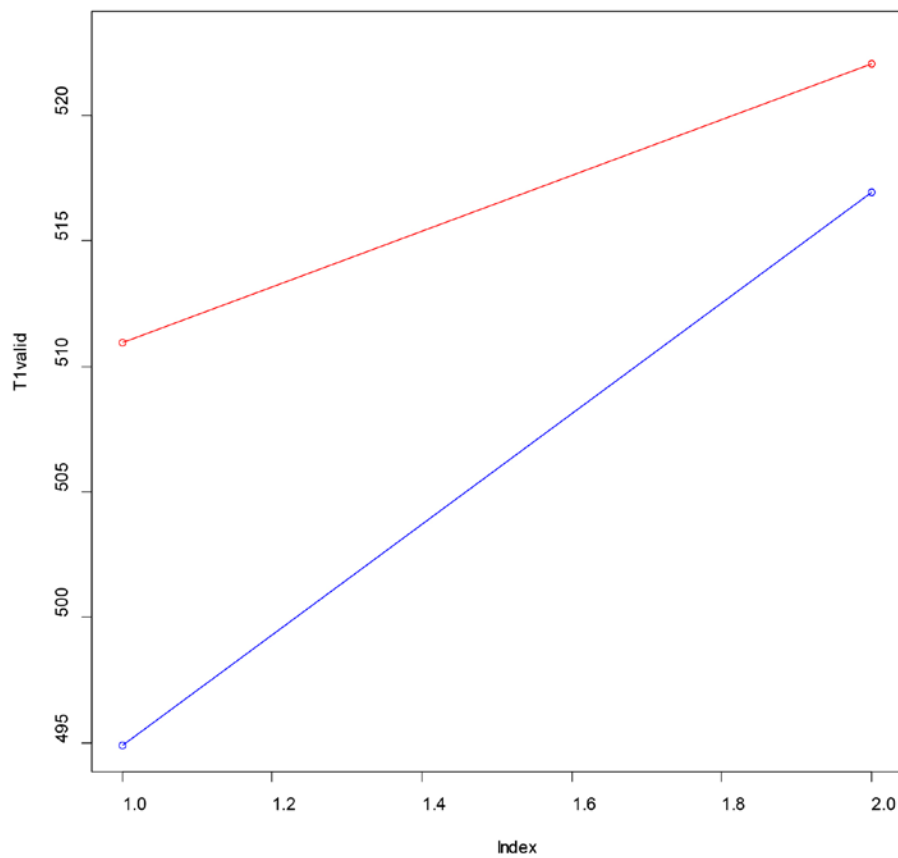
- Facilitation elicits the N2ac
- The N2ac was not observed in the Invalid 200 condition
- IOR may elicit the N2ac in a modified task

Thank you so much for your time!

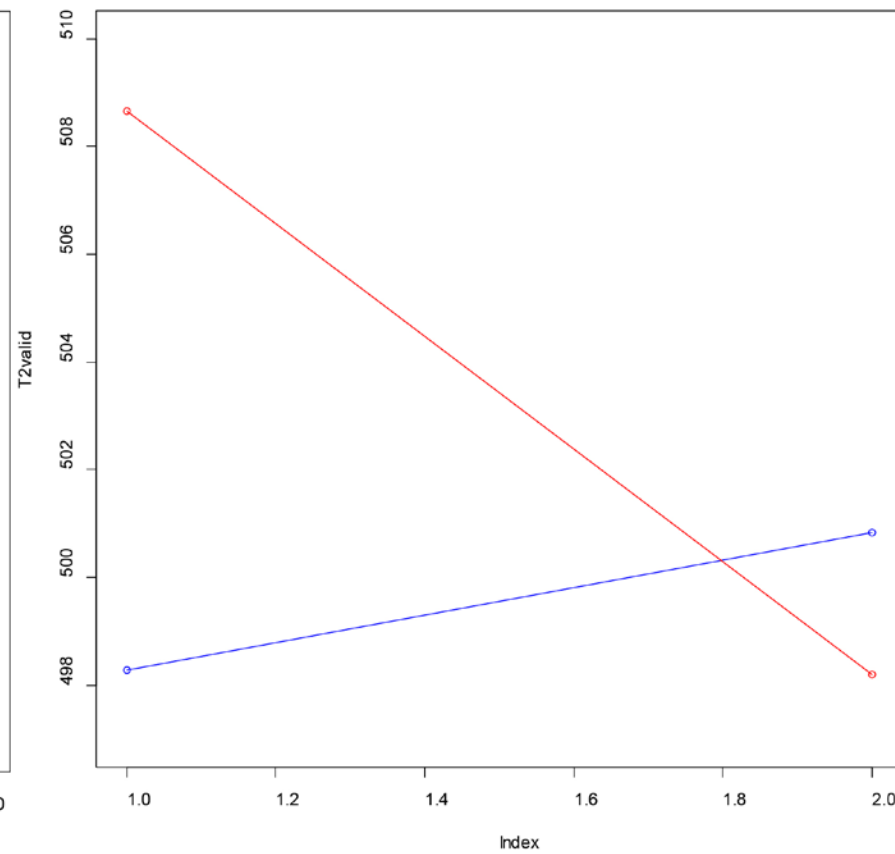
Any questions?

Results: the N2ac





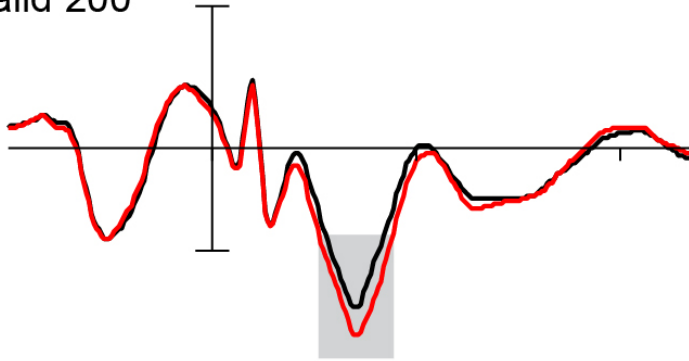
Target 1



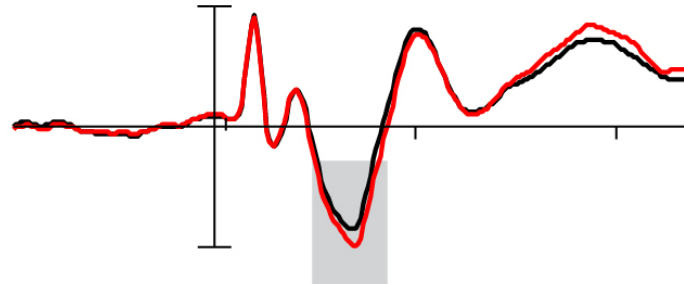
Target 2

Target 1

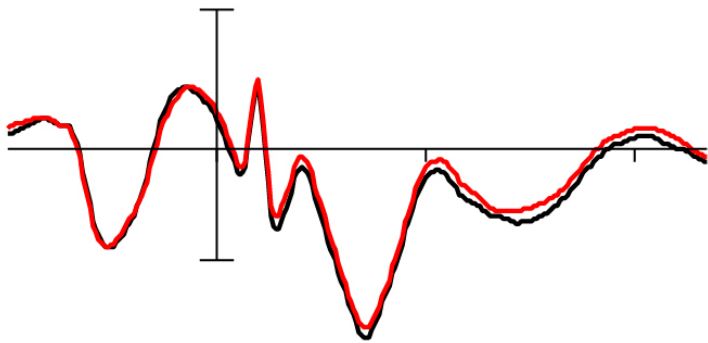
Valid 200



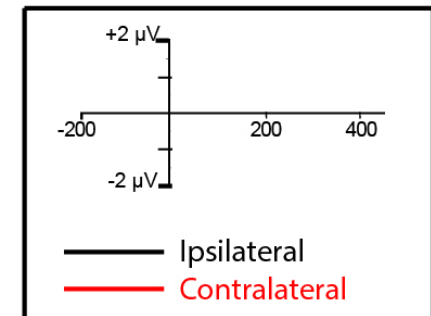
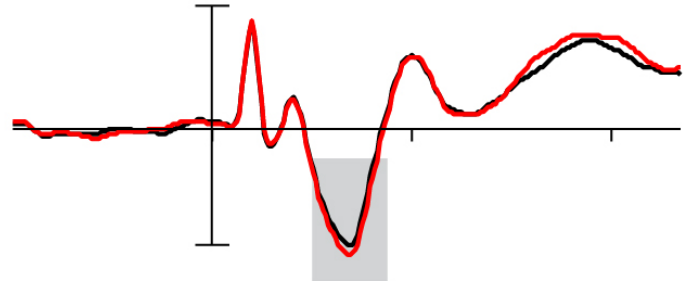
Valid 700



Invalid 200

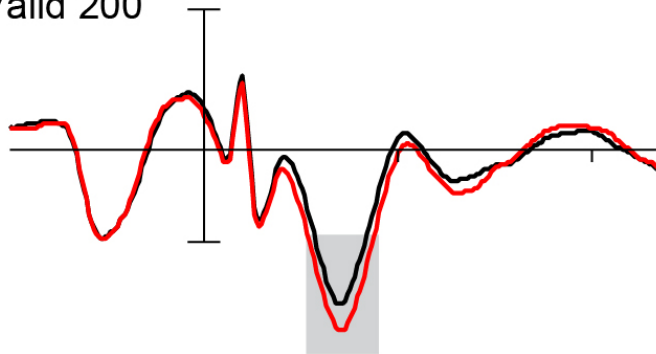


Invalid 700

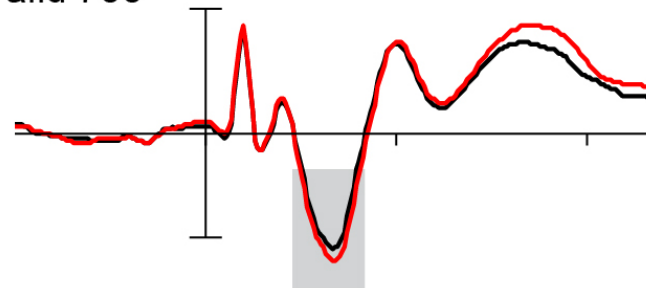


Target 2

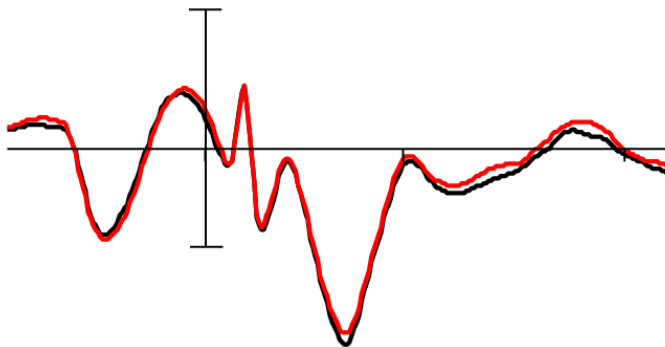
Valid 200



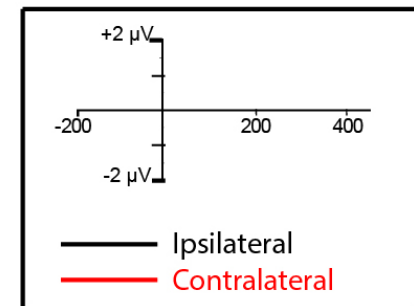
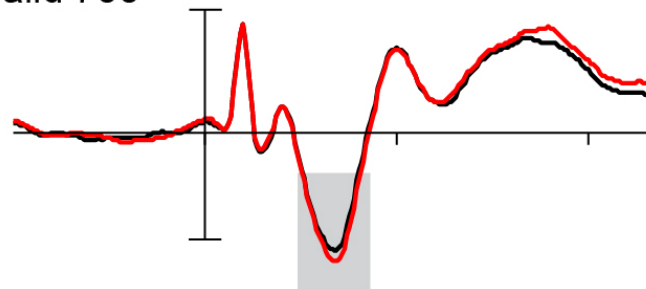
Valid 700



Invalid 200

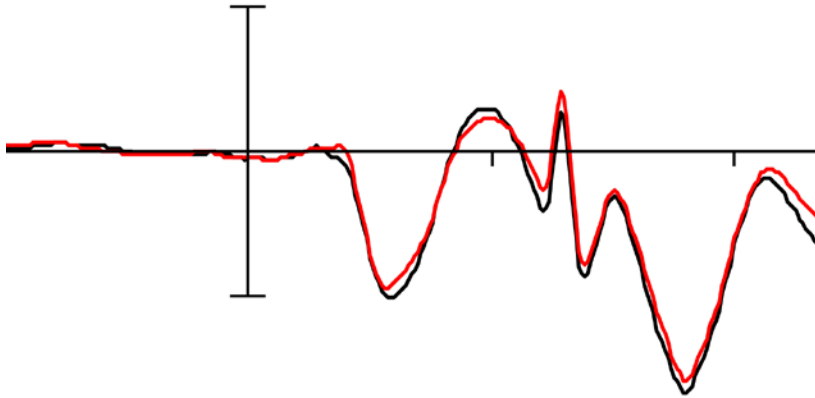


Invalid 700

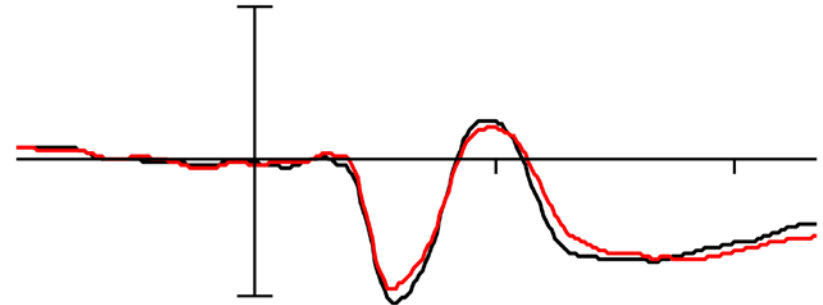


Cue-locked

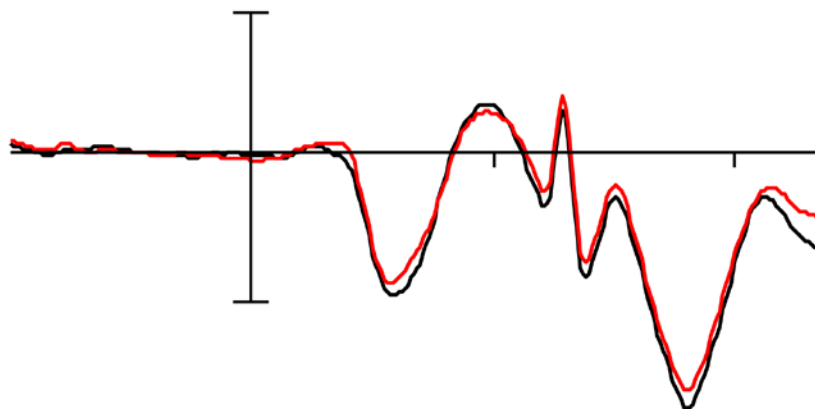
Valid 200



Valid 700



Invalid 200



Invalid 700

