



What Did You Say? A Web-Based Validation of a Speech-In-Noise Task

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Open-Set vs. Closed-set SiN Tasks

- Open-set

PLAY

Closed vs. Open-Set Tasks

- Closed-set
 - Fall
 - *Ball*
 - Shawl
 - Wall

Issues

- Sentence based (open-set) tasks are generally preferred as they are the most ecologically valid
- However:
 - Open-set tasks are difficult to use experimentally
 - Engages a whole host of processes not related to speech perception
- We need a closed-set task that better approximates everyday listening situations
 - Lexical competition
 - Talker variability

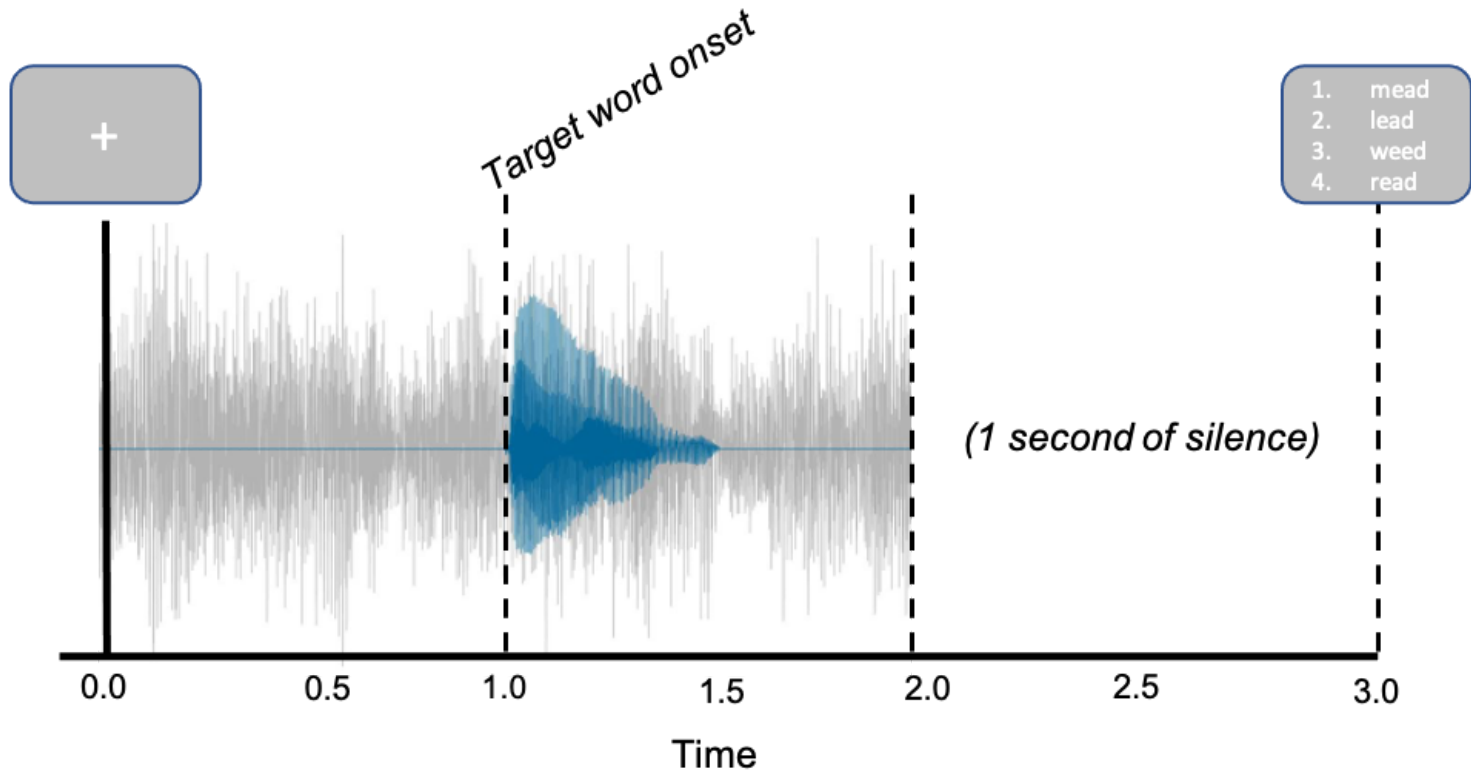
Iowa Test of Consonant Perception

- 4-AFC closed-set (single word) SiN task
 - 120 target words
 - Each target word belongs to a set and within the set appears as target and foil
 - Each word spoken by 4 speakers (2 women)
 - Minimal pairs differing by first consonant
- Uses multi-speaker babble

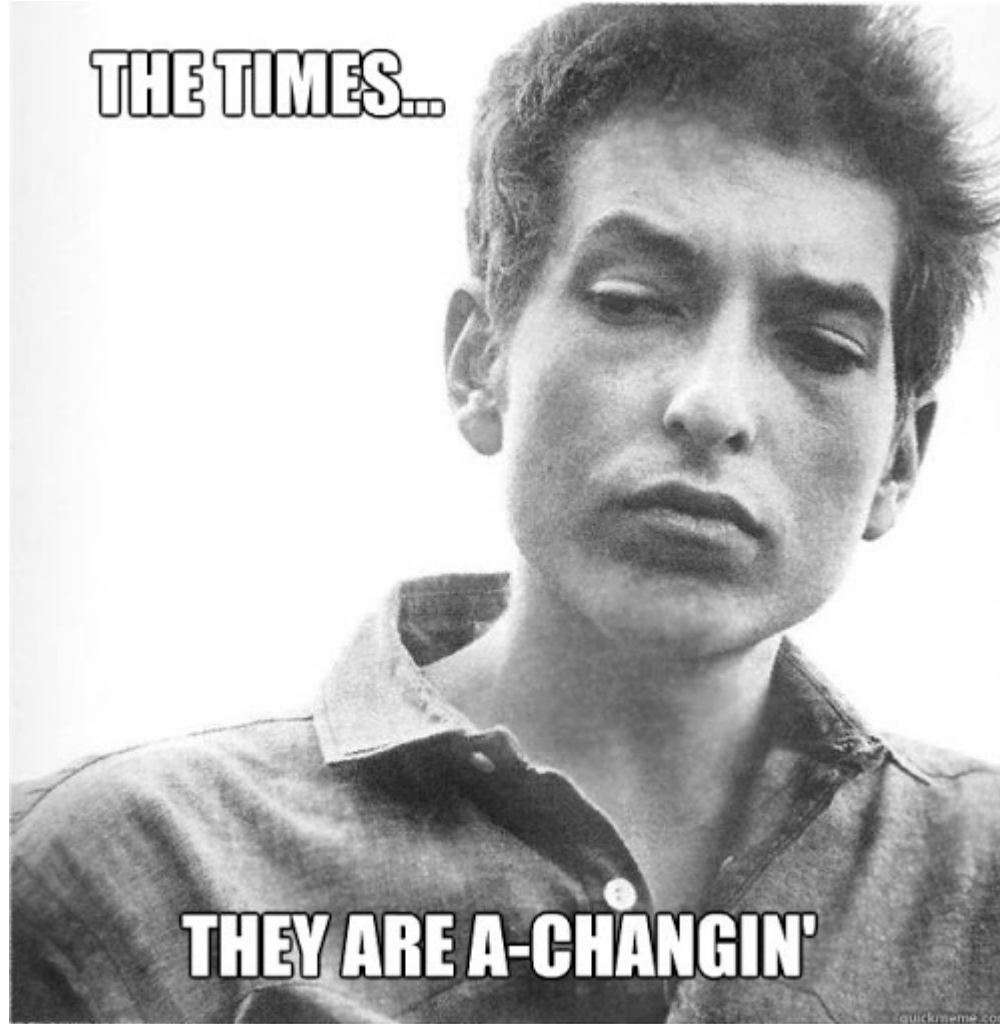
PLAY

- All analysis scripts, materials, and data are available on our OSF page.

Iowa Test of Consonant Perception





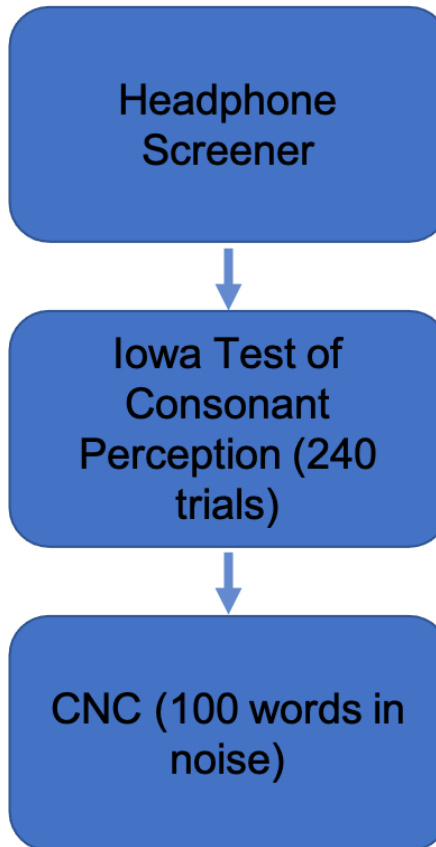


Procedure

- Two sessions (1 week apart)
 - Used Gorilla and Prolific

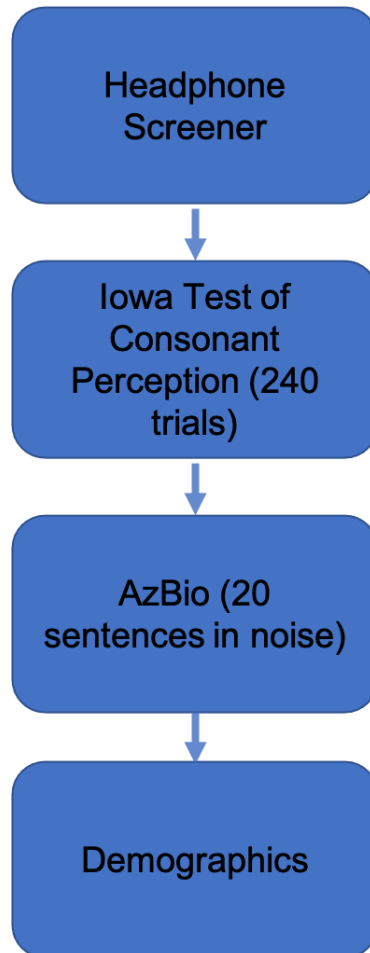
Procedure

- Session 1 ($N=199$)



Procedure

- Session 2 ($N = 98$)



Procedure

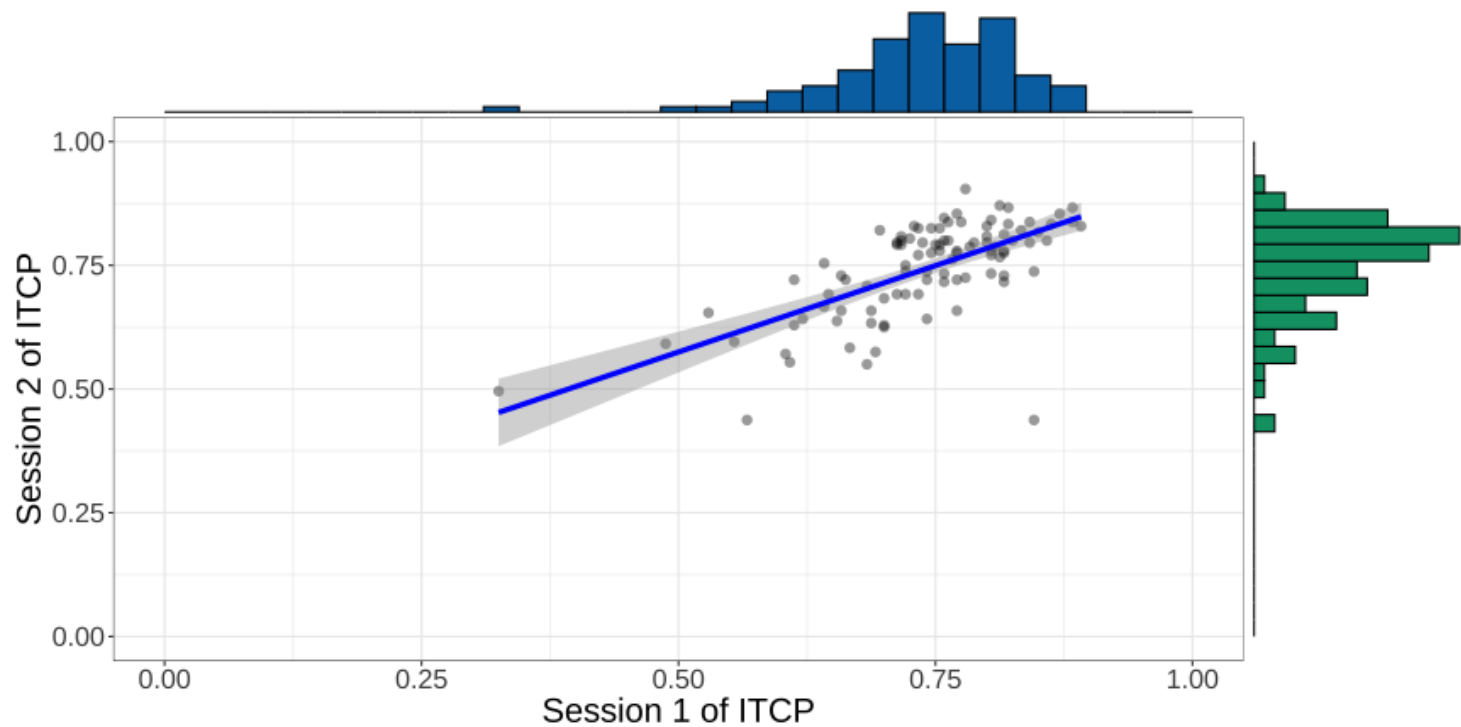
- Let's try it out! <https://app.gorilla.sc/openmaterials/97811>

Pilot

- Performance in Silence
 - $N = 50$
 - $M = 95\%$

Reliability

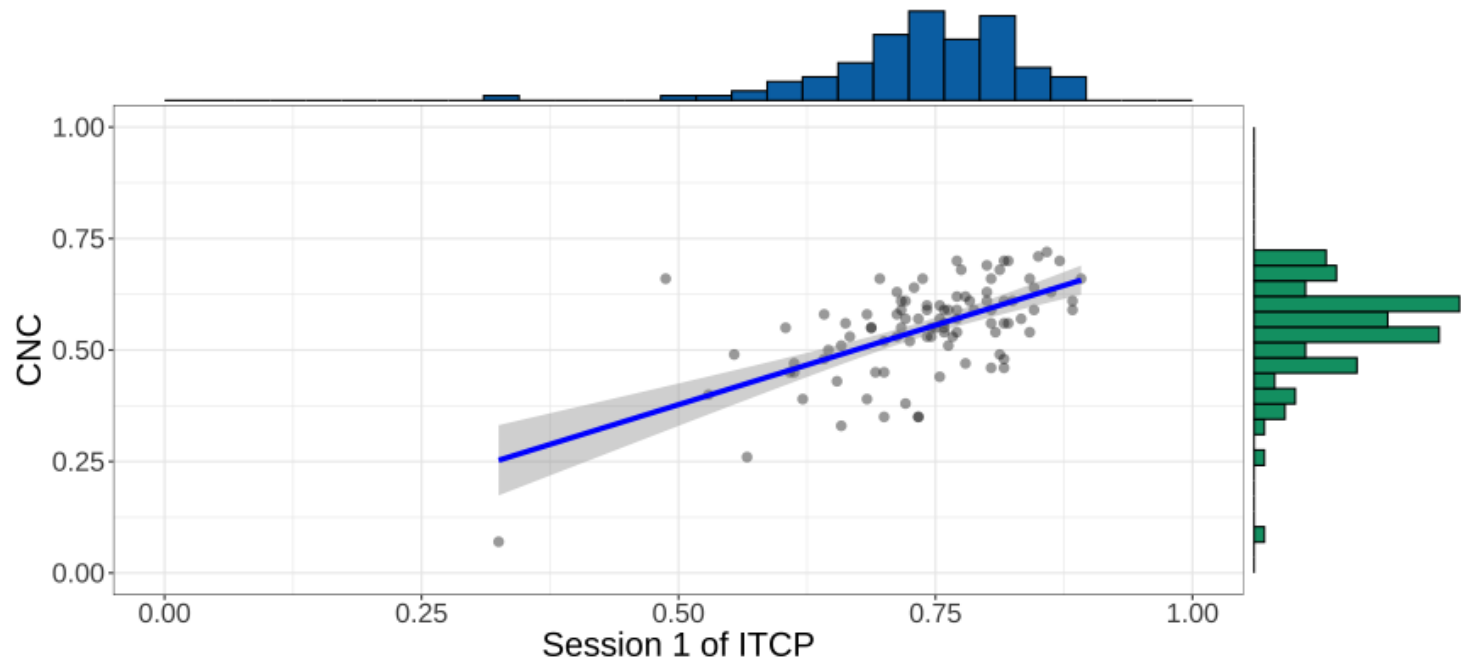
- Test-Retest
 - ICC = .80



Validity

- Session 1 of ITCP and CNC

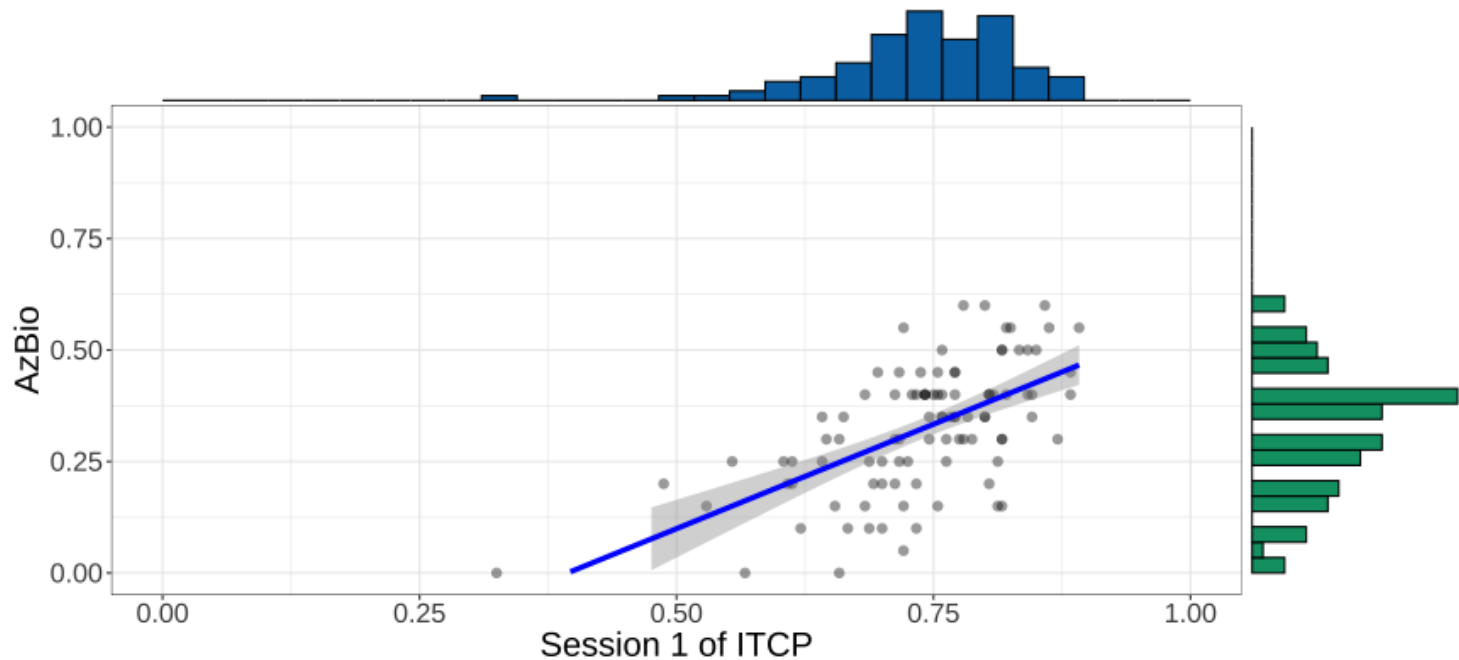
$t_{\text{Student}}(96) = 6.25, p = 1.11\text{e-}08, \hat{\rho}_{\text{pb}} = 0.54, \text{CI}_{95\%} [0.38, 0.67], n_{\text{pairs}} = 98$



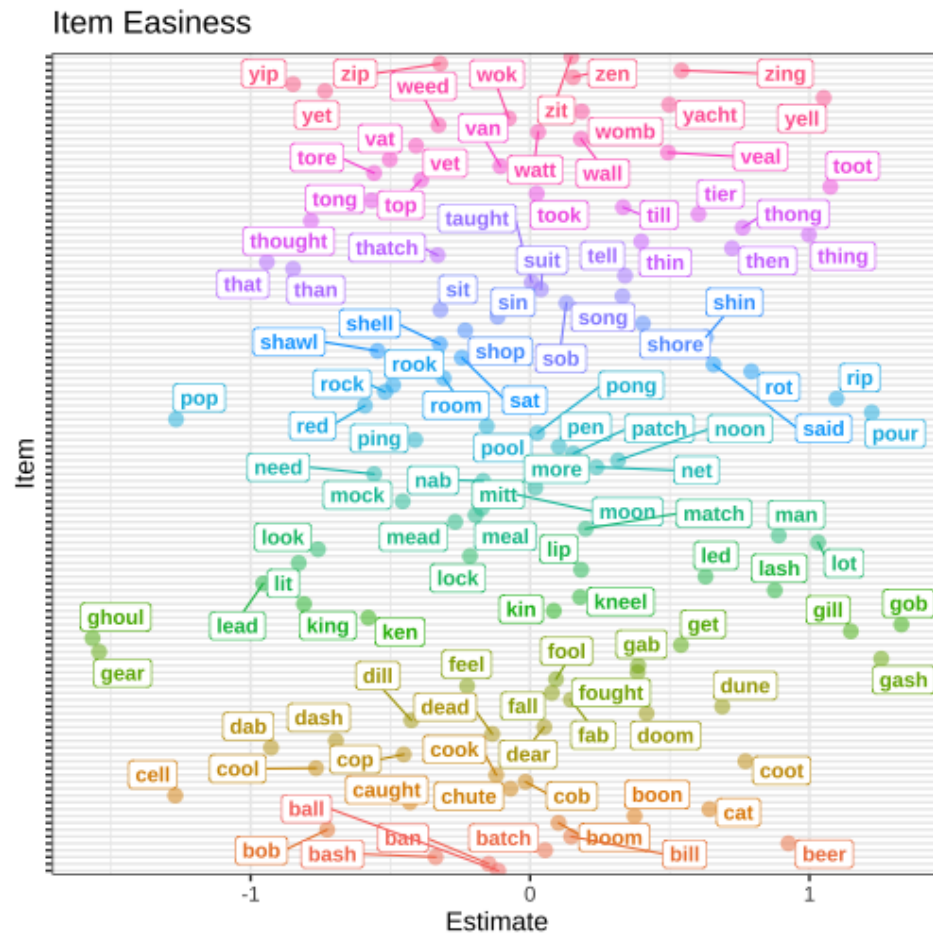
Validity

- Session 1 of ITCP and AzBio

$t_{\text{Student}}(96) = 7.10, p = 2.12\text{e-}10, \hat{\rho}_{\text{pb}} = 0.59, \text{CI}_{95\%} [0.44, 0.70], n_{\text{pairs}} = 98$

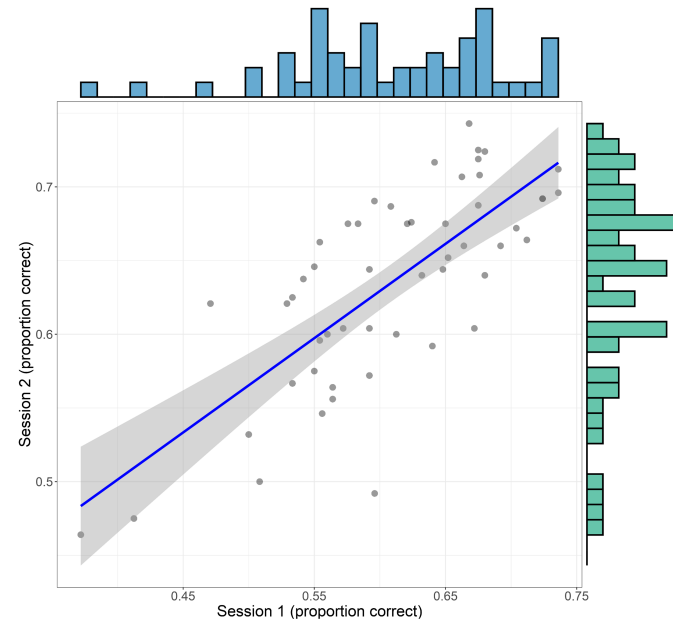


IRT Model



Future Plans

- Validation in lab
 - We do have data from 50 participants and data look comparable.
- Online testing for patients (e.g., hearing aid and cochlear implant users)
- Use it Experimentally
 - Already being used in EEG and PET



What Present Me Learned From Past Me

- Give bonuses for completing second session - *set up separate studies on recruitment platform.*
- Be explicit in your study description.
- Email subjects multiple times to remind them of an upcoming session.
- Try to make experiment length reasonable

Thank You

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