L2 INFLUENCE, L1 RESILIENCE: CHANGE AND STABILITY IN EARLY BILINGUAL SPEAKERS OF INDIAN ENGLISH

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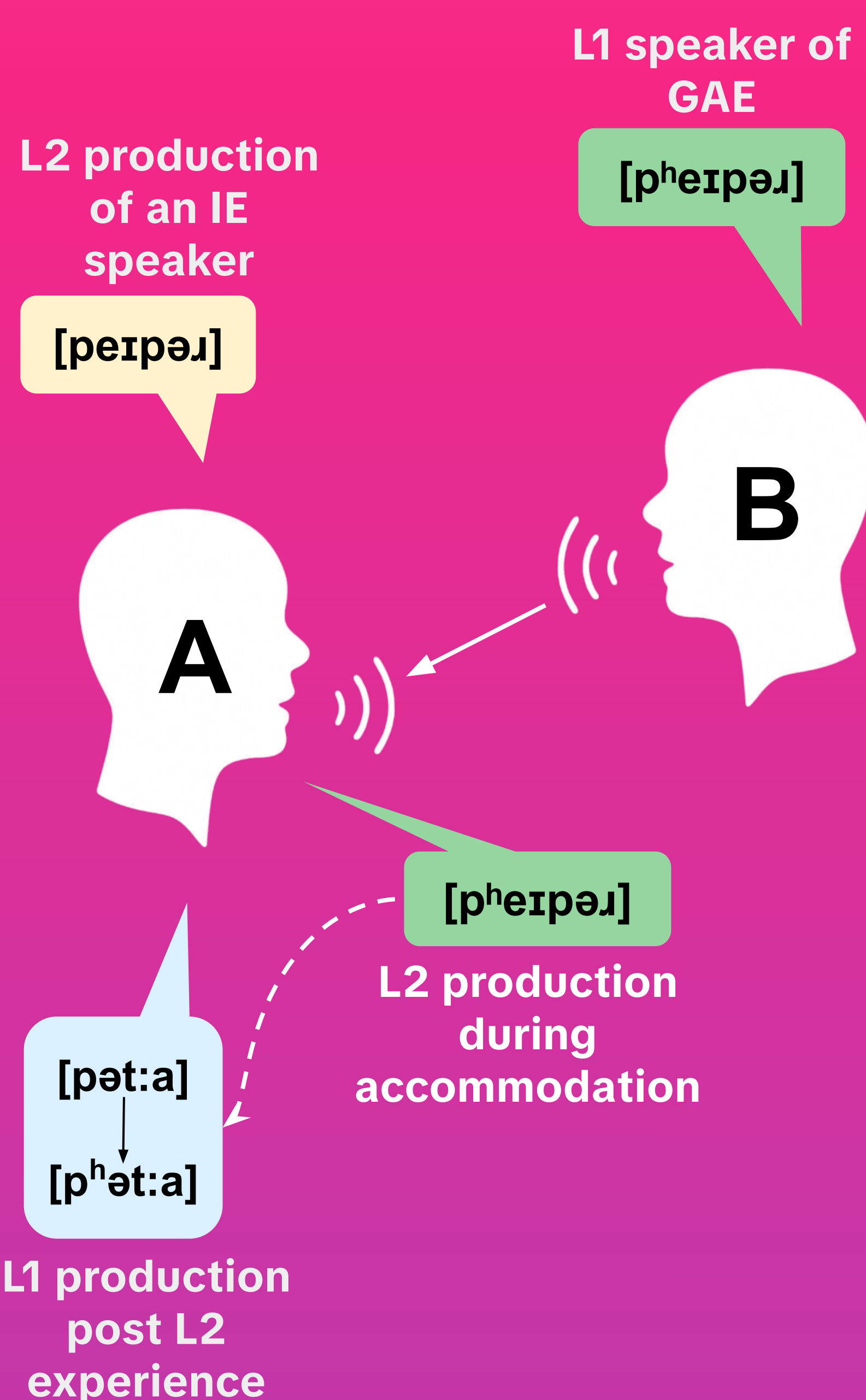Boston University, City University of Hong Kong

Accommodation:
- Interacting talkers may start adapting to their partner's speech to sound more alike[1]
- Well documented in L1-L1 dyads but underexplored in bilinguals interacting in their L2 with L1 speakers[2]

Drift:
- Speech adjustments in a speaker's L1, occurring especially after an L2 experience[3]

L2 accommodation-led L1 drift has not yet been looked at in bilinguals.

L1 speaker of GAE
[pʰeɪpəɹ]

L2 production of an IE speaker
[peɪpəɹ]

B

A

[pʰeɪpəɹ]
L2 production during accommodation

[pət̪a]
[pʰət̪a]
L1 production post L2 experience

QUESTIONS

1. Do early sequential bilinguals of Indian English (IE) show accommodation to General American English (GAE)?

2. Does the accommodation of an L2 lead to changes in the production of L1?

HYPOTHESIS

As GAE exhibits longer voice onset time (VOT) for /p/ and shorter VOTs for /b/ than Hindi, Telugu, & IE [4,5,6], accommodation to GAE would **lengthen L2 /p/** and **shorten L2 /b/**, thereby producing **parallel adjustments in L1 VOT** for both groups.

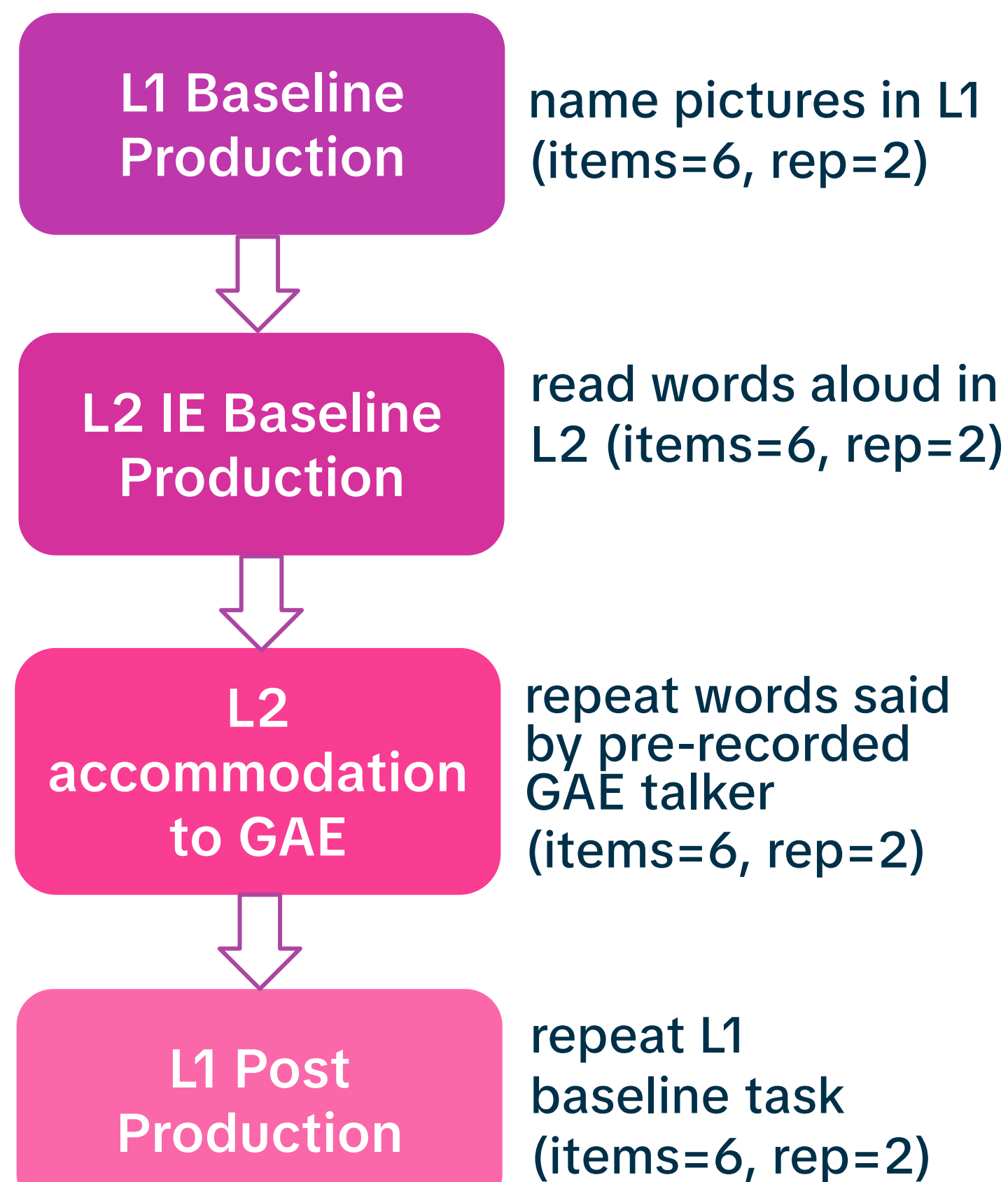| Phoneme	Hindi	Telugu	IE	GAE
/p/	12	22	16	89
/b/	-96	-131	-99	13

Table 1: VOT measures (in ms) across Hindi, Telugu, IE, GAE

METHODS

Participants
- 50 participants: 25 Hindi-IE bilinguals (HEBs), 25 Telugu-IE bilinguals (TEBs)
- Mean age: 21.2 yrs (HEB), 22.6 yrs (TEB); 42 female, 8 male speakers
- L2 AoA English: ~10 years old
- TEBs reported knowing some Hindi
- Recruited and tested in India

Tasks

L1 Baseline Production → name pictures in L1 (items=6, rep=2)

L2 IE Baseline Production → read words aloud in L2 (items=6, rep=2)

L2 accommodation to GAE → repeat words said by pre-recorded GAE talker (items=6, rep=2)

L1 Post Production → repeat L1 baseline task (items=6, rep=2)

Analysis

VOT duration (in ms) was extracted using a Praat script
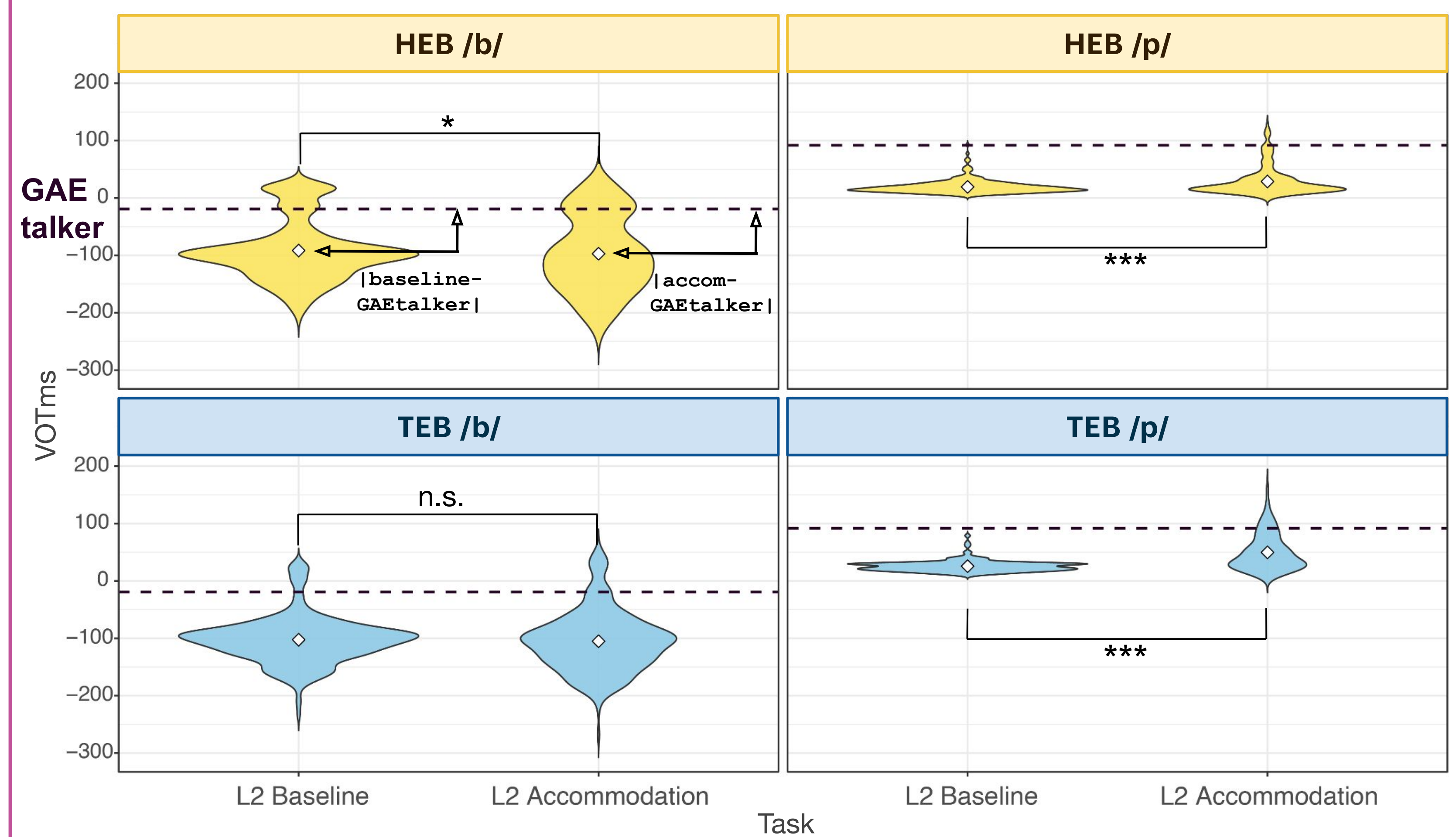
- L2 accommodation as difference-in-distance:
  `|accomm-GAE talker|-|baseline-GAE talker|`
- L1 drift as change over time:
  `post-baseline`

Mixed-effects linear regression model:

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Change/Diff_in_Distance ~
Group * Phoneme +
(1|Participant) + (1|Item)
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RESULTS

Figure 1: L2 Voice Onset Times of HEBs and TEBs

/b/: HEBs showed significant accommodation away from the GAE talker (β=7.4, p=0.02), whereas TEBs showed non-significant accommodation in the same direction (β=0.67, p=0.14).

/p/: HEBs showed significant accommodation towards the GAE talker (β=-8.7, p<0.001) and TEBs showed even more accommodation towards the GAE talker (β=-21.1, p<0.001).
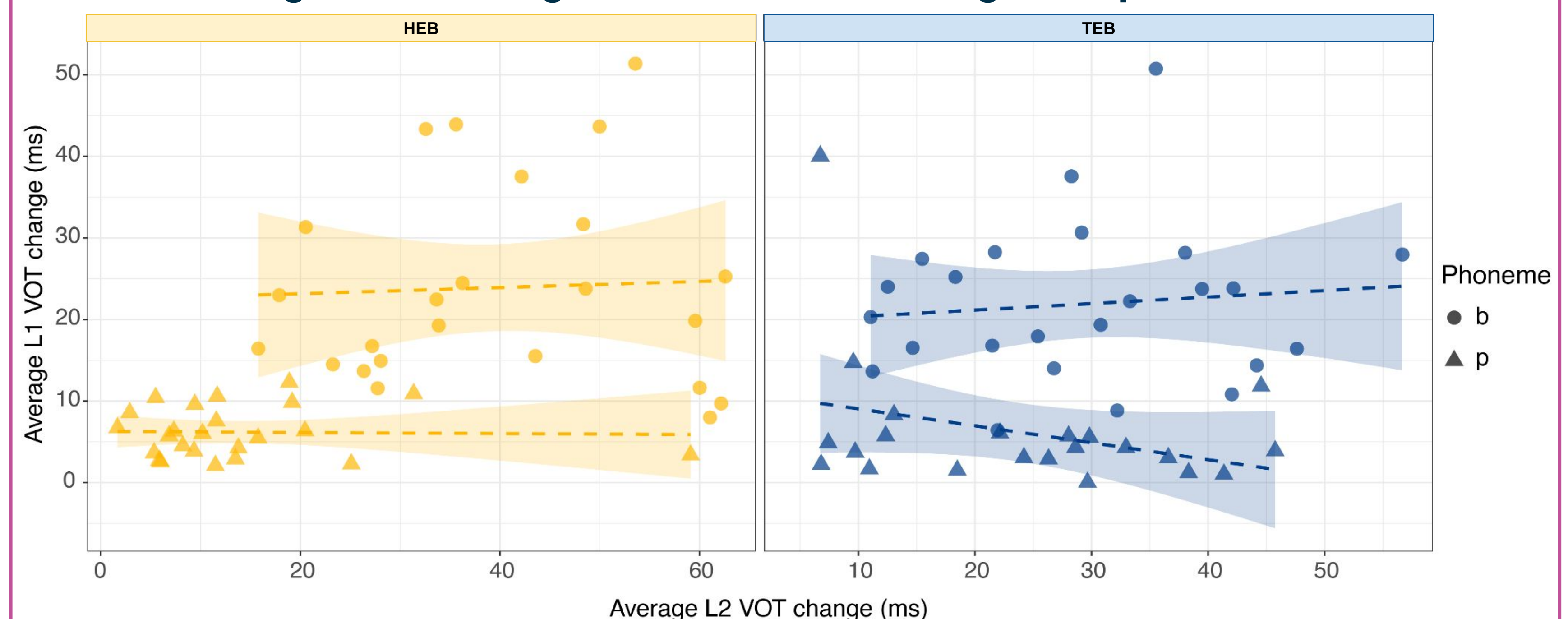
Figure 2: L1 Voice Onset Times of HEBs and TEBs
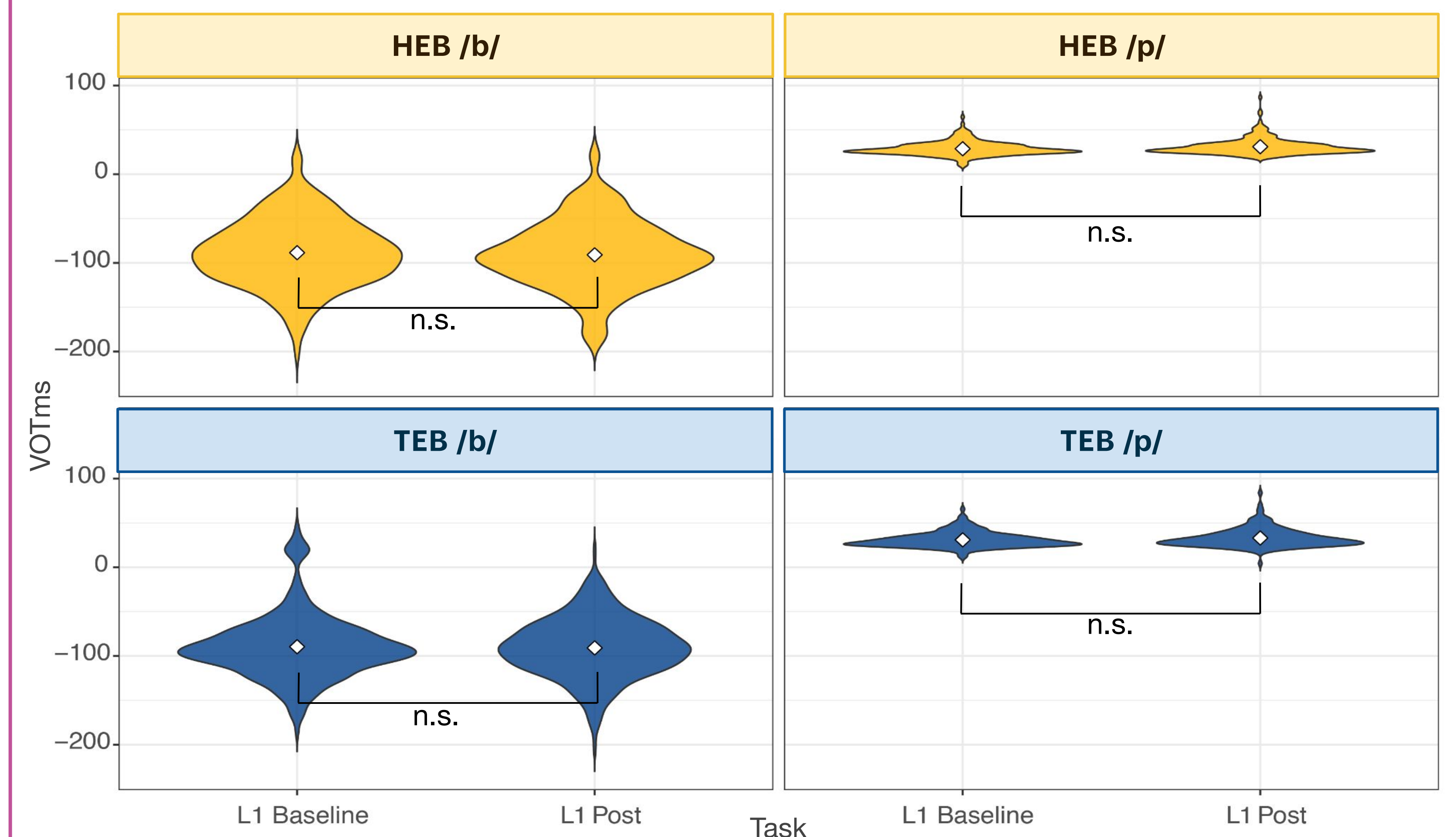
/b/: HEBs showed non-significant VOT shortening by -2.7 ms (p=0.35) from Baseline to Post, and TEBs showed non-significant VOT shortening by -2.8 ms (p=0.9).

/p/: HEBs showed non-significant VOT lengthening of 1.66 ms (p=0.16) while TEBs showed non-significant VOT lengthening of 3.74 ms (p=0.64).

Figure 3: Average L1 and L2 VOT change for /p/ and /b/

Magnitude of change (absolute values) in L2 VOT and L1 VOT do not appear to show any correlation between L2 VOT accommodation and L1 VOT drift.

DISCUSSION

- Our results partially supported our hypothesis: L2 VOT of /p/ significantly lengthened in both groups during accommodation, while significant /b/ accommodation only happened in HEBs.
  - Contrary finding: L1 VOT did **not** lengthen significantly in either group or across phonemes.
- Absolute distance capturing the magnitude of change for both L1 groups did not show any correlation between the two VOT changes.
- While L2 VOT may be unstable during L2 accommodation, early bilinguals prove to be less susceptible to L1 drift.

REFERENCES

[1] Babel, M. (2010). Dialect divergence and convergence in New Zealand English. *Language in Society*. [2] Cao, G. W. (2024). Phonetic dissimilarity and L2 category formation in L2 accommodation. *Language and Speech*. [3] Chang, C. B. (2012). Rapid and multifaceted effects of second-language learning on first-language speech production. *Journal of Phonetics*. [4] Shimizu, K. (1989). A cross-language study of voicing contrasts of stops. 音声科学研究. [5] Reddy, M. (2014). Voice onset time across gender and different vowel contexts in Telugu. *Language in India*. [6] Chodroff, E., & Wilson, C. (2018). Predictability of stop consonant phonetics across talkers: Between-category and within-category dependencies among cues for place and voice. *Linguistics Vanguard*.