Phonetic Accommodation in Hindi-English and Telugu-English Early Sequential Bilinguals: The Roles of Category Establishment and Phonetic Dissimilarity

Jupitara Ray, Charles B. Chang
Boston University, City University of Hong Kong
jupitara@bu.edu, cbchang@post.harvard.edu

How does the L1 of early sequential Hindi-Indian English bilinguals (HEBs) and Telugu-Indian English bilinguals (TEBs) affect their L2 English during accommodation to American English (AE)?

Hypotheses

Based on phonetic dissimilarity-led L2 accommodation[4], we predict the following:

- **H1:** Because HEBs' L2 /s/ (COG ~6000 Hz) is more dissimilar from AE, HEBs will accommodate to AE /s/ more than TEBs L2 /s/ (COG ~7500 Hz)[1,2].
- **H2:** Because TEBs have no L1 /z/[7], TEBs will accommodate to AE /z/ more than HEBs (who have L1 /z/)[8].
- **H3:** Because HEBs' word-final [l] is more dissimilar from AE word-final [ɬ], HEBs will accommodate to AE word-finally more than TEBs [3].

Methods

- 50 participants (25 HEBs & 25 TEBs) tested in India; AoA: >10 years
- Tasks: Baseline Production Task: read words off a screen & Accommodation Task: repeat words spoken by an AE interlocutor[5]
- Speech materials & Analysis:
  - Words with /s/ and /z/ in word-initial position: seat, sad, suit, set, zap, zen, zoo, zeal
    - Centre of Gravity (COG) measured over the whole fricative; for non-target affricate-like productions, only fricative portion after the stop was measured
      - A Praat script was used for extracting Centre of Gravity over the whole duration
  - Words with /l/ in initial and final positions: lateral, lentil, lethal, loofah
    - Mean F1 & F2 measured within a 10-ms steady-state interval annotated for each lateral [6]
- Statistics: COG/F1/F2 ~ Task * Phoneme * Group + (1 + Task | Participant) + (1 | Word)

Findings

Figure 1. Centre of Gravity of L2 English by group, phoneme, task, and AE interlocutor means.

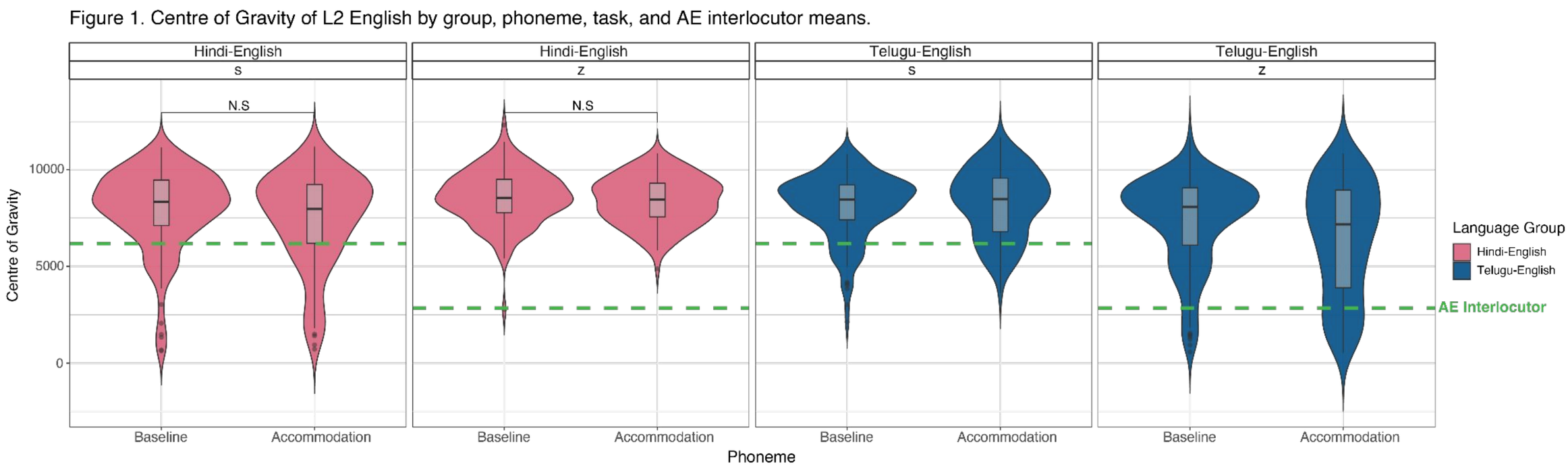
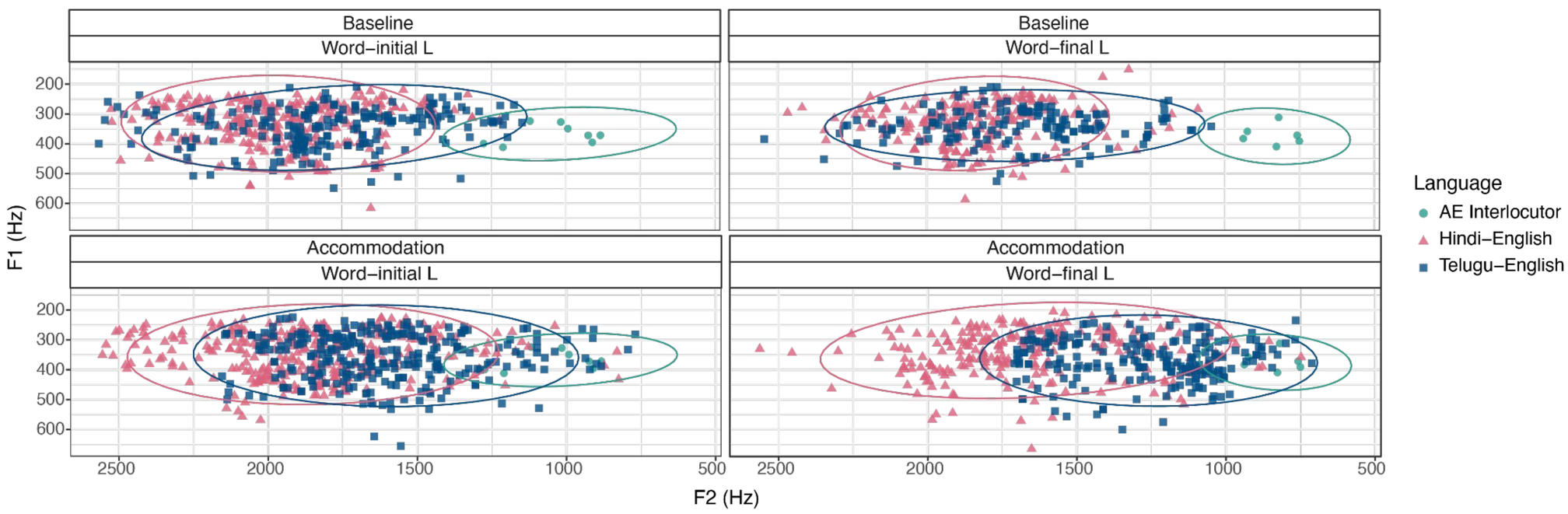


Figure 2. F1 x F2 in English laterals (tokens), by word position, task, and group



Summary of Findings:

L1 accommodation in COG of sibilant fricatives:

- TEBs showed slightly significant accommodation towards AE /z/ (β = *-1090.93, p=0.01*)
- HEBs did not show any significant changes in their L2 /s/ and /z/

L2 accommodation in formants of laterals:

- TEBs showed slightly significant accommodation in F1 than HEBs for word-initial L (β*=24.3, p=0.01)*
- TEBs showed significant accommodation in F2 than HEBs for word-final L (β*=-171.15, p=0.0001*)

➔ **Results partially support H1, H2 & H3:**

HEBs **did not** show any accommodation for /s/. TEBs **showed significant accommodation** for /z/. TEBs **accommodated significantly** more on word-initial and word-final L than HEBs.

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