**Introduction**

- **PIN-PEN merger**
  - Most advanced in monosyllabic words without consonant clusters.
  - Originated in Southern US, known to be spread in African American varieties throughout the US.

- Koops et al. (2005): In Houston, TX, the merger is associated with rural, less educated relatively older speakers.

- **Dialectal Adaptation and Lexical Processing**
  - Hain et al. (2008): /l/ raised to /l/ in front of g (e.g., bag - bag) learning dialect/speaker-specific /l/.
  - Less looks to the competitor BACK.
  - Less looks to /l/ upon listening to BACK.
  - Adaptation => lexical re-organization.

- Trude & Brown-Schmidt (2012): /l/ raised to /l/ in front of g (e.g., bag - bag) more looks to the competitor BAG.

**Research Question**

Do listeners own pronunciation patterns of front vowels /l/ - /l/ predict how they adapt to pin-pen merger?

**Experiment**

- **Auditory Stimuli**
  - 2 merged and 2 non-merged speakers recruited in central Ohio.
  - "Click on the XXX.
  - 6 critical pairs: pencil-pins, bench-bench, fence-fins, men-min, tant stake-tan, sign-sil.
  - 32 distractors.

- F1 and F2 distributions of the critical words.

- **Offline judgment of critical stimuli**

- **Visual Analogue Scale Task**

Click on the line to indicate how likely the given syllable /CVn/ is extracted from the two opposing words.

- Vowels in -en words were produced within their /n/ spaces.

- **Eye-tracking Experiment**

  - **Subjects:** 80 OSU undergraduate students.
  - **Task:** Listen to auditory instructions "Click on the XXX." and click on the object.
  - **Eye-tracking:** Tobii 1750, Sampling rate 50 Hz.

- **Eye-tracking Experiment**

  - **Block 1**
  - **Non-Merged**
    - [bench][fins]
    - [bench][fins]
  - **Merged**
    - [bench][fins]
    - [bench][fins]

- **Adaptation to voice-specific pronunciation should lead to:**

  - **Non-merged Voices:** faster target detection in Block 3 than in Block 1.
  - **Merged Voices:** SLOWER target detection in Block 3 than in Block 1.

- **Visual Stimuli:** 8 object photos including the -en & -in pair (e.g., pencil – pins)

- **Facial photos:** RACE (Black or White) X OUTFIT (Unprofessional or Professional)

**Results from the 80 participants:**

- **Log ratio Target/Competitor**

- **Block 1**
  - Null effect of voice in both groups.

- **Block 2**
  - Robust effect of voice in both groups:** (p<01)
  - Slower responses with merged voice.

- **Block 3**
  - Slower responses with merged voice in both groups:** (p<05).

- **Block 1 vs. 3**
  - **Merged voices:** relatively fewer looks to the –en target in Block 3.
  - **Non-merged voices:** faster fixations to the target in Block 3.

- **Participants**

  - **Participants**
    - **Most Merged vs. Least Merged**
      - **Most Merged**
        - Block 1
        - Null effect of voice in both groups.
      - **Block 2**
        - Robust effect of voice in both groups:** (p<.01)
        - Slower responses with merged voice.
      - **Block 3**
        - Slower responses with merged voice in both groups:** (p<05).

- **Professional outfit led to faster detection of target for Black faces.**
  - **Outfit had the opposite effect for White faces.**

**Conclusion**

**Listeners’ pronunciations and how they perceive pin-pen merger**

Kiwako Ito & Kathryn Campbell-Kibler

Ohio State University

Participants were ranked by degree of merger, by the Pillai’s trace statistic -in and -en tokens in F1/F2 space (Hall-Lew, 2009; Hay et al 2006).

15 most merged and 15 least merged participants were selected.

Participants showed higher sensitivities to the voices with the pronunciation patterns closer to their own.

In addition, only Most Merged participants showed Race x OUTFIT interaction in:

- **Block 2 (p<1)**
- **Block 3 (p<.05)**

Professional outfit led to faster detection of target for Black faces.

Outfit had the opposite effect for White faces.

Listeners learned speaker-specific pronunciation patterns (in Block 2) and this changed their responses to the voices that had pronunciation patterns similar to their own.

Listeners’ pronunciation patterns may also affect how they process sociolinguistic cues.