Do Familiar Sounds Aid Language Learning? Support for Exemplar-based Memory Models for Spoken Language Processing

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Poster Session II: Psycholinguistics II
#2231
Accent and Language Acquisition Theories

• Models of L2 word memory (see Ernestus & Baayen, 2011)
  • Exemplar-based models: semantic meaning + learning context
  • Abstract generalization models: semantic meaning - phonological details

• Role of accent familiarity in language processing
  • Information processing: Familiar > Unfamiliar
    • Sentence judgments (Adank et al., 2009; Munro & Derwing, 1995)
    • Word identification (Floccia et al., 2006; Rogers et al., 2006; Song & Iverson, 2018)
  • Memory: Familiar < Unfamiliar
    • Recognition (Cho & Feldman, 2013, 2016; Romero-Rivas et al., 2019)
    • Source memory (Cho & Feldman, 2016)
  • However, can depend on language congruency (Major et al., 2002)
The Present Study

**Question:** Does accent familiarity influence L2 acquisition efficacy?

**Design:** Within-subjects accent presentation (Marathi, American, Irish)

**Participants:** N = 64 undergraduates in an English dominant region

<table>
<thead>
<tr>
<th>Accent Familiarity (1 = low; 7 = high)</th>
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<tbody>
<tr>
<td>Marathi</td>
</tr>
<tr>
<td>mode = 1</td>
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<tr>
<td>median = 1</td>
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</tbody>
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<tr>
<th>Language History</th>
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<tbody>
<tr>
<td>89% U.S. native</td>
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<tr>
<td>Mean languages known = 1.67</td>
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<tr>
<td>&gt; 95% English L1</td>
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</tbody>
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**Stimuli:** 15 Marathi words spoken in Marathi, American, and Irish accents

Word blocks equated based on English translations for letter count, phonological and phonographic neighbors, number of phonemes and syllabi, and mean naming time

<table>
<thead>
<tr>
<th></th>
<th>Marathi</th>
<th>American</th>
<th>Irish</th>
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</thead>
<tbody>
<tr>
<td>Familiar</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Congruent</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
**Learning Phase**

- **Trial**
  - 1500ms
  - 2000ms
  - 6000ms

- **Randomized trial order, accent blocks counterbalanced between-participants**

**Test Phase**

- **Recall memory**
  - Hear Marathi word, in the same accent as learned
  - Type English translation

- **Source memory**
  - See Marathi-English translation pairings
  - Indicate if correct translations
    - If yes, report the accent in which the Marathi word was presented

- **Language History & Demographics Questionnaire**

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Results

Unfamiliar accents enhanced learning a new language, $F(1.73, 108.82) = 11.50$, $MSE = .78$, $p < .005$ ($\eta^2_p = .15$).

Pairing translations to speaker qualities is accent dependent, $F(1.74, 109.86) = 34.35$, $MSE = 2.46$, $p < .005$ ($\eta^2_p = .35$).

Confidence was not influenced by study context, $F(2, 124) = .66$, $MSE = 90.145$, $p = .52$ ($\eta^2_p = .35$, power = .16).
Discussion & Future Directions

• Supports exemplar-based memory models for spoken word processing
  • Accent presentation differentiated learning ability

• Impact on second language learning
  • Phonetic distinctiveness & encoding effort
  • Intentional versus incidental learning
  • Support for immersion learning environments

• Are there accent thresholds?

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