The Role of Exposure to Accented English on Novel Speech Sound Acquisition

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Background
Role of accent suggests that the speech sounds that children are exposed to during the critical period of language acquisition become the foundation for learning (Kuhl, 1993). In the early stages of language development children can detect phonemic variation across languages. However, with increased exposure to speech they become less sensitive to phonemic differences outside of their native language, and they show increased sensitivity towards the language with which they are most exposed (Werker & Tees, 1984). This sensitivity specialization is demonstrated by the difficulty adults have learning speech sounds of a second language (Striane & Oittman, 1984).

Research Question
Does having a parent with a native language other than English improve ability to learn non-native speech sounds?

Participants
Participants were selected for the Accent Exposed cohort of this study. Any participant who completed all sessions of a speech sound training study through the MAPS were eligible for this research. Accept Exposed participants were selected for the Accent Exposed cohort of this study. We matched participants with parents who have a native parent with a native language other than English were selected for the Accent Exposed cohort of this study. Participants were matched on the basis of age, sex, and hearing screening to ensure that there were no initial differences between cohorts in auditory acuity.

Demographics

<table>
<thead>
<tr>
<th>Accent Exposed</th>
<th>English Only</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Female</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Age 1-5</td>
<td>23.5</td>
<td>23.5</td>
</tr>
<tr>
<td>Age 6-12</td>
<td>1.5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Stimuli
5 unique tokens each of the dental /ɖug/ and retroflex /ɖug/ were spoken by a native speaker of Hindi in a sound-proof booth. The tokens were cut to the onset of the burst and resampled to match on mean amplitude.

Procedure
Participants are presented with nonreal objects that match the contrast sounds. They are asked to match the word they hear to the correct nonreal object on the screen. Participants complete 200 trials of this task with feedback during training, and complete 50 trials without feedback during the test phase. tests.

Results

- On the identification portion of the task, participants from the Accent Exposed cohort achieved significantly higher accuracy scores than those in the English Only cohort, based on a comparison of average total identification accuracy.
- Additionally, an independent sample t-test shows that the difference between cohorts occurs at a rate different from chance.
- These results suggest participants who have been exposed to an accent can learn to identify novel speech sound contrasts more accurately than those who do not experience an accent.