Variability in the input: The role of multiple talkers in a statistical language learning paradigm
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Introduction

- Statistical learning refers to the discovery of patterns in the input (Reber, 1967).
- The learning of word boundaries can occur through an implicit computation of transitional probabilities, which are statistically predictive relationships between syllables (Saffran et al., 1996). This process has been widely demonstrated in previous research.
- Artificial language stimuli used in statistical language learning paradigms often use one voice or talker. Our goal was to investigate whether learning in this paradigm is affected by having multiple talkers of different genders.

Method

Participants
- 42 young adults
- English monolingual; normal hearing/vision

Procedure

Artificial Language Stimuli
- Six trisyllabic “words” generated from 12 CV syllables
- Unsegmented language stream: Only cue to word boundaries were the transitional probabilities between syllables

Test Phase

Artificial Language Stimuli Recording

<table>
<thead>
<tr>
<th>Condition</th>
<th>Talker</th>
<th>Mean Duration (Ms) (SD)</th>
<th>Mean Pitch (Hz) (SD)</th>
<th>Pitch Peak (Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>0.562</td>
<td>192.78 (11.13)</td>
<td>473.73</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>0.618</td>
<td>98.78 (14.84)</td>
<td>491.21</td>
<td></td>
</tr>
</tbody>
</table>

Note: Bolded values are significantly different, p < .05

Conclusions

- Participants in either condition did not differ in their word identification scores
- Average performance in either condition was statistically above chance, demonstrating successful learning across conditions with sufficient exposure
- This finding runs contrary to previous work where words were better recognized when produced by the same talker (Craik & Krisner, 1974; Palmeri et al., 1993)
- However, some studies have shown talker specific characteristics do not influence recognition (Houston & Jusczyk, 2000; van Heugten & Johnson, 2012)
- Word segmentation may involve the formation of abstract categorical representations
- After a sufficient number of diverse words, a distinct category may be formed

References


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