Analysis of the Influence of Word Frequency in Auditory Perception

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Ganong effect:
- Lexicality has a top-down influence on people’s perception of sounds (Ganong, 1980).
- If a sound is ambiguous between being a good token of /t/ and a good token of /d/, people tend to hear it as /t/ in contexts where /t/ would make it a real word (task), and as /d/ when /t/ would make it a nonword (*tash).

Present Study: Does word frequency also influence perception this way?

Prediction: People will hear /t/ more often when it makes a high-frequency word than when it makes a low-frequency word.

Materials:
- Mandarin disyllabic words starting with tui

<table>
<thead>
<tr>
<th>Context</th>
<th>Pinyin</th>
<th>Chinese</th>
<th>Meaning</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>t=low frequency</td>
<td>duihua</td>
<td>对话</td>
<td>conversation</td>
<td>716</td>
</tr>
<tr>
<td>t=high frequency</td>
<td>duyi</td>
<td>对弈</td>
<td>play chess</td>
<td>7</td>
</tr>
<tr>
<td>t&amp;d=nonwords</td>
<td>*duchi</td>
<td>退役</td>
<td>retire</td>
<td>0</td>
</tr>
<tr>
<td>t=real word</td>
<td>*duihua</td>
<td>退出</td>
<td>quit</td>
<td>1322</td>
</tr>
<tr>
<td>t=nonword</td>
<td>duijiang</td>
<td>对方</td>
<td>counterpart</td>
<td>2036</td>
</tr>
</tbody>
</table>

Discussion: Difference between high- and low-frequency words will influence individual’s speech perception. This result extends the understanding of top-down processing in speech perception.

Open question: Nonword=word with 0 frequency?
Supportive: the real word line standing for *tuichu (退出) is higher than the high frequency line standing for *tuiyi (退役).
Against: the nonword line standing for *tuifang is higher than the low frequency line standing for tuihu (退化).

Reference: