Development of familiar word recognition in preschoolers

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Background

- Recent work suggests word recognition efficiency—which well children map incoming speech to words—may help identify early differences in children’s language trajectories.
- We do not know, however, how word recognition itself develops over time or how individual differences in word recognition change over time.

Current study

- How does familiar word recognition develop over the preschool years?
- Are individual differences in word recognition stable over developmental time?
- How does children’s sensitivity to lexical competitors change with age?

Method

Participants

- Data were collected during a three-year longitudinal study.

<table>
<thead>
<tr>
<th>Time Point</th>
<th>Children</th>
<th>Age (months) Mean ± SD</th>
<th>Age (months) Range</th>
<th>EVT-2 standard Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 3</td>
<td>149</td>
<td>33 ± 3.5</td>
<td>38–39</td>
<td>113 ± 18</td>
</tr>
<tr>
<td>Age 4</td>
<td>162</td>
<td>45 ± 3.5</td>
<td>39–52</td>
<td>118 ± 16</td>
</tr>
<tr>
<td>Age 5</td>
<td>153</td>
<td>57 ± 3.7</td>
<td>51–66</td>
<td>118 ± 15</td>
</tr>
</tbody>
</table>

Procedure

- Children heard a familiar word in a carrier phrase (e.g., “find the bell”) and saw an array of photos, including a target, a semantic, a phonological, and an unrelated competitor.
- Tobii T60XL eyetracker measured children’s patterns of looking to the images over the course of a trial.
- This procedure measures a child’s real-time comprehension of words by capturing how the child’s gaze location changes over time in response to speech.

“Find the bell!”

Unrelated competitor (swing)

Target noun (bell)

Phonological competitor (bee)

Semantic competitor (drum)

Conclusions

- Children’s recognition of familiar words improved each year.
- Individual differences in word recognition were stable over time, so that relatively fast children at Age 3 remained relatively fast at Age 5.
- As children grew older, they were more likely to look to the phonological and semantic competitors, compared to the unrelated word. When children err, they are more likely to err on a lexically relevant word.
- Children become more efficient at recognizing familiar words by becoming more efficient at activating the target word and related words.

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