Introduction

- Speakers must choose the most appropriate words for the concepts they want to express, but this process can be difficult in the face of competition from lexical competitors or from attentional distraction.
- In this study, we used a picture naming task with different types of distractors to investigate if bilinguals deal with conflict. Lexical conflict was introduced using object-name distractors. Attentional conflict was introduced using color-word distractors.
- Bilinguals tend to be slower than monolinguals on naming tasks (e.g., Ivanova & Costa, 2008), but they exhibit more efficient cognitive control systems than monolinguals (e.g., Bialystok, Craik, & Luk, 2006; Morales et al., 2015).
- It is not clear what the source of the bilingual advantage is. The Adaptive Control Hypothesis states that different language situations require different types of control, and speakers adapt their control according to the contextual demands (Green & Abutalebi, 2013).
- To investigate this, we compared two groups with bilingual exposure in early childhood: heritage speakers and overhearers. Heritage speakers were proficient in their heritage language and English. Overhearers were proficient in English, though they may still be able to comprehend both languages.
- If speaking both languages improves cognitive control, heritage speakers should show less interference than overhearers and monolinguals. But if bilingual exposure and comprehension is key, then both heritage speakers and overhearers should perform better than monolinguals.

Research Question

1. Do speakers experience lexical and attentional conflict in this paradigm?
2. Does previous language experience influence how people deal with lexical and attentional conflict during word retrieval?

Participants

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Age - Mean &amp; Range (yrs)</th>
<th>Gender</th>
<th>English Acquisition Age - Mean &amp; Range (yrs)</th>
<th>Average English Proficiency - Mean &amp; Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heritage Speakers</td>
<td>37</td>
<td>19.24, 18 - 26</td>
<td>9m; 28f</td>
<td>2.58, 0 - 6</td>
<td>9.26, 7 - 10</td>
</tr>
<tr>
<td>Monolinguals</td>
<td>38</td>
<td>18.97, 18 - 22</td>
<td>18m; 20f</td>
<td>1.51, 0 - 4</td>
<td>9.30, 7 - 10</td>
</tr>
<tr>
<td>Overhearers</td>
<td>31</td>
<td>19.48, 18 - 25</td>
<td>10m; 21f</td>
<td>2.29, 1 - 6</td>
<td>9.40, 7.75 - 10</td>
</tr>
</tbody>
</table>

Methods

- **Picture Naming Task:** 288 colored line drawings. Each picture was preceded by one of the following distractor words: a semantically related or unrelated object name, the target object name, the target color name or a different color, or a series of X’s. Pictures were presented in four blocks: Blocks 1 and 4 had color and control distractors and Blocks 2 and 3 contained object distractors. Each trial started with a cue instructing the participant to name either the object’s name or its color. The cue was object-naming on 80% of the trials in each block and color-naming on 20% of the trials.
- **Language History Questionnaire:** Assessed participants’ linguistic background. Included questions of daily language exposure, familial language use factors, as well as self-reported proficiency.

Analysis

- **Object Experiment:** The trials were analyzed with repeated measures ANOVA
- For response times, we excluded trials for triggers of response time were inaccurate such answers that were inaccurate, as well as trials < 300 ms and > 5000 ms.
- Participants were classified into three separate groups: Heritage Speakers (hs), Monolinguals (ml), and Overhearers (oh).

Results

Conflict Types

- Participants responded fastest and with the highest accuracy when presented with object match distractors.
- Participants were slower on object mismatch (whether semantically related or unrelated) (p < 0.001).
- Color-word distractors did not differ from the control condition.

Group comparisons

- Monolinguals were fastest to name the pictures, overhearers were slowest, and heritage speakers were in between. These differences were not significant (p = 0.735).
- Unlike our predictions, there were no significant differences in how the three groups responded to the different types of distractors (p = 0.401).

Conclusions

- Results replicate previous studies showing that bilinguals deal with lexical and attentional conflict in this paradigm. Although they are functionally monolingual, overhearers were more like bilinguals in speed of naming. However, none of the group differences were statistically significant.
- Unlike previous studies showing that semantically related distractors interfered more than semantically unrelated distractors (Schriefers, Meyer, & Levelt, 1990), we found that semantically related and unrelated distractors interfered to a similar degree. However, they interfered more than color distractors, suggesting that lexical interference is more problematic than attentional interference.

References & Acknowledgments


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