**BACKGROUND**

**A BILINGUAL DISADVANTAGE FOR NOUNS**
- Bilingual speakers are slower and less accurate in word retrieval than monolinguals, even in their first language (e.g., Ivanova & Costa, 2008).

**BILINGUAL DISADVANTAGE FOR VERBS IS UNCLEAR**
- Verb advantage is found in bilingual children (Klassert et al., 2014) but disadvantage in bilingual aphasia (Farooqi-Shah, 2012).
- No explicit study comparing verb-noun retrieval in healthy bilingual adults.

**EXPLANATIONS OF THE BILINGUAL DISADVANTAGE**
- Weaker links hypothesis: bilinguals “have a lower usage frequency in each language” (Gollan et al., 2008).
- Interference from translation equivalents (Sandovall et al., 2010).

**PURPOSE & HYPOTHESES**

1. **Investigate if the bilingual disadvantage is influenced by grammatical category**
   - Weaker links hypothesis → similar disadvantage for nouns and verbs; frequency effect.
   - Cross-language interference hypothesis → smaller disadvantage for verbs due to lower cross-linguistic overlap in verb meanings.

2. **Compare effects of elicitation task on bilingual disadvantage**
   - Verbal fluency will show smaller effects because of greater reliance on cognitive control.

3. **Establish bilingual normative data for object and action naming measures commonly used in neuropsychology.**

**PROCEDURES**

<table>
<thead>
<tr>
<th>TASKS</th>
<th>Verbs</th>
<th>Nouns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal Fluency</td>
<td>Action</td>
<td>Animals</td>
</tr>
<tr>
<td>Picture Naming</td>
<td>Verb Naming Test (VNT) (Cho-Reyes &amp; Thompson, 2012)</td>
<td>Boston Naming Test (BNT) (Goodglass et al., 2001)</td>
</tr>
</tbody>
</table>

**RESULTS**

- **Verbal Fluency**
  - Monolingual
  - Bilingual

- **Picture Naming**
  - Monolingual
  - Bilingual

**DISCUSSION**

- **Influence of grammatical category**
  - Smaller/no bilingual disadvantage for verbs is consistent with other findings in healthy speakers (Klassert et al., 2014; Farooqi-Shah, Li, Yoon, in prep).
  - Supports cross-language interference hypothesis based on fewer cross-language competitors for verbs (Butina et al., 2013; Gentner, 1981).
- **Partial support for weaker links hypothesis – frequency effect for noun picture naming**
- **Influence of elicitation task**
  - Verbal fluency showed smaller (or no) bilingual disadvantage compared to picture naming.
  - Action naming tasks (especially action fluency) may be more reliable for neuropsychological testing of fluent bilinguals.

**Normative data**

- Specific picture items were especially challenging for bilinguals.
- Norms will be published.

**Conclusions**

- Retrieval significantly differs for verbs vs. nouns in bilinguals.
- Bilingual language models need to accommodate grammatical category differences.

**REFERENCES & ACKNOWLEDGEMENTS**


**PARTICIPANTS**

<table>
<thead>
<tr>
<th>Neurologically healthy speakers</th>
<th>Monolingual</th>
<th>Bilingual (2nd language – English)</th>
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</thead>
<tbody>
<tr>
<td>Number</td>
<td>41</td>
<td>33 (19 Asian-Indian L1, 14 Spanish L1)</td>
</tr>
<tr>
<td>Age Yr. Mean (Range)</td>
<td>64 (22-95)</td>
<td>55 (22-82)</td>
</tr>
<tr>
<td>Education Yr. Mean</td>
<td>16.5</td>
<td>17.5</td>
</tr>
<tr>
<td>Proficiency Rating</td>
<td>Native</td>
<td>Mean 5 out of 6 (High proficiency)</td>
</tr>
</tbody>
</table>

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