Limited prediction in sentence comprehension of a verb-first language: The case of Tagalog

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RESEARCH QUESTION: Do comprehenders use grammatical cues like verbal agreement to make predictions in Tagalog sentence processing?

1. Sentence processing is predictive

- Long distance dependencies (LDD): languages have grammatical constructions where a noun phrase is displaced from its expected position; instead, it appears to the left of the verb
  - (1) The boys knew that their mom speaks two languages fluently.
  - (2) Which languages did the boys know that their mom speaks fluently?

- Comprehenders parse LDDs incrementally and predictively
  - (3) Which book did he read last night?
  - (4) Which book did he read a review of last night?

- Evidence comes mostly from verb-second and verb-last languages, like English [1], Dutch [2], and Japanese [3]
- Evidence from verb-first Chamorro: prediction is conservative, only with disambiguating grammatical cues [4]
- Predictions based on partial input may be wrong
- Revisions are needed as new evidence arises

2. Verbal agreement as a predictive cue

- Tagalog is a verb-first language spoken in the Philippines
- Like English, verbs may agree with their subject
  - (5) The child eat [A] jackfruit
  - The children eat [A] jackfruit

- Unlike English, verbs may also agree with their object
  - (6) The child(ren) eat(s) [A] jackfruit

- Only the nouns with which verbs agree can participate in LDDs [5]
  - (7) The child(ren) eat(s) [A] jackfruit

3. Isolating agreement’s contribution

- Compare the time course of how speakers comprehended sentences with um/in (+AGR) and those without (-AGR)
- -AGR imposes comparable restrictions, as in (8) and (9)

<table>
<thead>
<tr>
<th>Subject LDD</th>
<th>Object LDD</th>
</tr>
</thead>
<tbody>
<tr>
<td>+AGR um-verbs</td>
<td>in-verbs</td>
</tr>
<tr>
<td>form</td>
<td>kumain</td>
</tr>
<tr>
<td>-AGR iteratives</td>
<td>recent perfectives</td>
</tr>
<tr>
<td>form</td>
<td>kain-nang-kain</td>
</tr>
</tbody>
</table>

Iterative: base form of verb + nang + base form of verb
Recent perfective: kana + base form of verb

4. Subject-agreement is predictive

- Design: 2 (FILLER PLausibility: +, −) × 2 (AGR: +, −)

<table>
<thead>
<tr>
<th>WH</th>
<th>Filler</th>
<th>ang</th>
<th>VERB</th>
<th>V+1</th>
<th>V=n</th>
<th>END</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which</td>
<td>young girl</td>
<td>(part)</td>
<td>drink [+AGR]</td>
<td>water</td>
<td>…</td>
<td>?</td>
</tr>
</tbody>
</table>

Why is there an asymmetry?

- Subject/object asymmetry: not unique to this study. Reported in acquisition studies, too! [8,9]
- Contra previous descriptions, speakers vary w.r.t. what noun they allow to participate in LDDs when verbs agree with the object [10]
- Possible cause: availability of other continuations

5. Object-agreement is weakly predictive

- Same procedure as Experiment 1
- Design: 2 (FILLER PLausibility: +, −) × 2 (AGRAM: +, −)

<table>
<thead>
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<th>ang</th>
<th>Region</th>
<th>VERB</th>
<th>V+1</th>
<th>V=n</th>
<th>END</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which</td>
<td>wine</td>
<td>(part)</td>
<td>drink [+AGR]</td>
<td>his</td>
<td>…</td>
<td>?</td>
<td></td>
</tr>
</tbody>
</table>

More reliable rejections of implausible sentences when verb had um than in iteratives at the verb

HYPOTHESIS

Tagalog verbal agreement facilitates prediction of incoming material by signaling the identity of the noun that participates in LDDs.