THE ADVANTAGE FOR HERITAGE SPEAKERS OF KNOWING TWO GRAMMARS

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BACKGROUND

- Heritage speakers are individuals who acquire a language at home in early childhood that is not the societal language.
- Heritage grammars show influence from the second language. This influence is often interpreted as a negative outcome of language contact and incomplete acquisition (e.g., Montrul, 2010).
- However, cross-linguistic influence is not always negative. Bilinguals’ knowledge of syntactic constructions from both languages may be harnessed when trying to comprehend sentences in either language.

RESEARCH QUESTION AND HYPOTHESES

Are the grammars of both languages “online” during language comprehension in either language?

- If both grammars are “online,” English-specific syntactic structure (induced motion causative) in Spanish sentences should be rated as more natural and not elicit typical ERP markers of ungrammaticality (such as a Left Anterior Negativity or P600).
- Heritage speakers may be more likely than late second-language learners to have both grammars “online” during language comprehension.

STIMULI

- **Causative** (Experimental) n = 48
  "Los maestros trotaron a los niños alrededor del pato durante el recreo. [The teachers jogged the kids around the playground during recess.]

- **Pseudo-causative** (Ungrammatical control) n = 48
  "Los maestros sudaron a los niños alrededor del pato durante el recreo. [The teachers sweated the kids around the playground during recess.]

- **Transitive** (Grammatical control) n = 48
  "Los maestros persiguieron a los niños alrededor del pato durante el recreo. [The teachers chased the kids around the playground during recess.]

PARTICIPANTS

- 16 heritage Spanish speakers living in the U.S.
- Learned Spanish first (at home)
- Born in the US or moved to US by age 8

<table>
<thead>
<tr>
<th>Self-rated Proficiency (1-7)</th>
<th>6</th>
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<tbody>
<tr>
<td>Spanish</td>
<td>4.3</td>
<td>4.3</td>
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<tr>
<td>English</td>
<td>5.6</td>
<td>5.6</td>
</tr>
</tbody>
</table>

N = 16 MEAN (SD)
- Age 25.1 (6.7)
- Gender 8m:8f
- Age of English Acquisition 5.6 (1.9)

PROCEDURE

- All sentences were presented auditorily in Spanish during EEG data acquisition.
- Participants rated the naturalness of each sentence (1 = unnatural, 5 = natural).
- Inter-trial interval = 1000 ms

**Data Acquisition**
- EEG data collected from 64-channel or 128-channel electrode caps (EGI, Inc.)
- Nine regions of interest (ROIs) identified using Principal Components Analysis. Data were averaged across electrodes within each ROI
- Sampling rate: 250 Hz
- Filter: 0.1-100 Hz (online), 0.3-30 Hz (offline)
- Reference: Cz (online), average reference (offline)

RESULTS

- **Direct object noun**
- **Preposition**

<table>
<thead>
<tr>
<th>Condition</th>
<th>CAUSATIVE</th>
<th>UNGRAMMATICAL</th>
<th>GRAMMATICAL</th>
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<tbody>
<tr>
<td>Mid Central</td>
<td>2.7</td>
<td>1.3</td>
<td>4.5</td>
</tr>
<tr>
<td>Mid Posterior</td>
<td>2.7</td>
<td>1.3</td>
<td>4.5</td>
</tr>
<tr>
<td>Left Anterior</td>
<td>2.7</td>
<td>1.3</td>
<td>4.5</td>
</tr>
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</table>

The differences between all pairs of conditions were significant at p < .05.

SENTENCE INTERPRETATIONS

- Participants interpreted most causative sentences as causative events, as evidenced by their use of the following types of verbs:
  - Hacer (make)
  - Llevar (bring)
  - Forzar (force)
  - Causar (cause)
- Ungrammatical control sentences were not interpreted as causative events.

DISCUSSION

- Bilinguals have two mental grammar systems. These systems are not completely independent of each other.
- This study showed that knowing two grammar systems provides additional tools for interpreting unfamiliar sentence constructions.
- Heritage speakers did not detect ungrammaticality in the causative sentences, though they appear to have experienced some difficulty integrating semantic information after the preposition.
- Although they rated the causative sentences as somewhat odd, they tended to arrive at a causative interpretation of events.
- Heritage speakers are not always disadvantaged compared to their monolingual peers. Instead, they have a richer set of “tools” to aid in difficult language comprehension.
- These findings question whether we should consider sentence constructions of this type to be “ungrammatical” for bilinguals. The status of these constructions may just be “unnatural” or “unfamiliar” but not ungrammatical.
- Thus, the bilingual grammar may be different from a monolingual grammar. Assessments of bilinguals should take into account how knowledge of other languages may influence language processing.

REFERENCES


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