“I understand everything you say, I just don’t speak it”:

The role of morphology in the comprehension of Spanish by receptive heritage bilinguals

Workshop on Heritage Language Acquisition

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Figure 2
Nativity and Legal Status of Mexican-Origin Population in the U.S., 2011 (%)

- Native born: 65%
- Foreign born: 35%
  - Naturalized citizens: 6%
  - Legal permanent residents: 11%
  - Unauthorized migrants: 18%

Background

Map: Arizona and surrounding states, including Phoenix, Tucson, and New Mexico.
University of Arizona – Spanish as a Heritage Language Program

Must minimally “possess receptive abilities in the heritage language” (Beaudrie & Ducar, 2005) – productive & receptive skills in considerable asymmetry

Are on the “verge of culminating the language shift towards English monolingualism” (Beaudrie 2009)

“…their receptive skills surpass productive skills, they remember common expressions and emotion-laden vocabulary and their productive phonology is advanced” (Basham & Fatham 2008)
SPANISH HERITAGE LEARNERS

Heritage speakers

• L1-like pronunciation
• Cultural connection to Spanish communities of practice
• Naturalistic exposure in the home
• Oral competence

L1 speakers

L2 speakers

• Formal schooling in the language relatively late in life (limited literacy skills)
• Variable input
• Educated in the majority language
• Grammatical difficulties
  – Morphology: Gender agreement/assignment, Tense, Aspect Mood

• Literacy skills as result of formal schooling

Bowles, 2011; Martínez Gibson, 2011; Montrul, 2009; Montrul, Foote & Perpiñan, 2008
SPANISH HERITAGE BILINGUALS
“GRAMMATICAL DIFFICULTY”

Task Type

- Low Analyzed knowledge
- High Analyzed knowledge
- Low control
- High control

- Reading
- Writing
- Metalinguistic skills
  - Written Picture Identification Task
  - Written gender Morphology Completion Task
- Conversation
- Oral Picture Description Task
SHRB Grammatical Abilities

  • Phonology is more “nativelike” (VOT)
  • Perform like L2 learners in their ability to detect morphological errors

• Beaudrie (2009a, 2009b)
  • Gender agreement, subject-verb agreement, and tense/aspect distinctions are difficult
While receptive bilinguals often report that they understand conversational Spanish, the nature of their comprehension is largely unknown. (Au et al. 2002; Beaudrie, 2005; Sherkina-Lieber, 2011)

What is the nature of their underlying, grammatical competence?

Does grammar (morphology, specifically) form a part of this system and play a role in their comprehension?

How do we test learners with very limited speaking skills and literacy?
Does morphology constitute part of SHRBs’ underlying grammatical competence? (Are SHRBs sensitive to morphological well-formedness?)

Task 1: Self-paced, aural grammaticality judgment task

Is morphology used to interpret meaning?

Task 2: Morpheme interpretation task

Is sensitivity to morphosyntactic violations and/or the ability to utilize morphosyntax to interpret meaning correlated to better performance in a more global comprehension task?

Tasks 3: Global comprehension task & correlations

What socioeducational factors in SHRBs’ language histories in childhood might correlate to better performance on any of the above tasks?

Task 4: Biographical questionnaire & correlations
PARTICIPANTS

- Receptive bilinguals enrolled course for receptive, heritage bilinguals: N = 30
- Receptive bilinguals recruited from undergraduate psychology pool: 12
- Advanced heritage recruited from undergraduate psychology pool: N = 38
- L1 raised Spanish-speakers N = 10
- Total N = 90
• Born in the US, of Mexican descent (age $M = 18.63$)

• Heard Spanish in the home while growing up (between ages of 0-5)

• Spoke English while growing up, educated in English

• Rated current Spanish speaking skills as “Beginning”, or “I don’t currently use Spanish”

• Level of listening skill when overhearing a conversation in Spanish rated as “the general idea”, “almost everything” or “everything”

• No immersion experience in a Spanish-speaking country

• Global comprehension task used to determine they were truly receptively bilingual
Research Question: Does morphology constitute part of SHRBs’ underlying grammatical competence? (Are SHRBs sensitive to morphological well-formedness?)
Self-paced listening task (Waters & Caplan, 2004) presented with PsychoPy software (Peirce, 2007)

Participants were seated at a computer and used the space bar to progress through randomized, pre-recorded sentence pairs divided into 3 phrases

Stimuli controlled for dialect and frequency Corpus del Español en el Sur de Arizona (Carvalho, 2012)

Reaction times and binary responses as to whether or not sentence sounded “right” to participants were recorded

8 phrases per morpheme condition
TASK 1: SELF-PACED AURAL GRAMMATICALITY JUDGMENT TASK

- **Gender assignment/agreement**: Se vende ---la casa blanca/*blanco ---en la esquina ‘*The white house is on the corner is for sale’

- **Subject/verb agreement**: Los sábados ---el muchacho corre/*corren ---por el parque (subject/verb agreement) ‘On Saturdays the boy runs through the park’

- **Present vs. preterit tense**: La semana pasada ---María llamó/*llama ----a su madre. ‘*Last week María called her mother’

- **Preterite/imperfect aspect**: Cuando venimos a Tucson ---nosotros fuimos/éramos ---niños pequeños. ‘*When we came to Tucson we were little kids’

- **Indicative/subjunctive mood**: Quiero que ---vienes/*vengas ---a la fiesta. ‘*I want you to come to the party’

- **Distractor condition**
When you are ready, press the spacebar to proceed to four practice sentences before the actual task starts.

<Press Space to Continue>
TASK 1: LISTENING TIMES
AGREEMENT < GENDER < TENSE < ASPECT < MOOD

Grammaticality
- Grammatical
- Ungrammatical
TASK 1: ACCURACY
AGREEMENT > TENSE > GENDER > MOOD > ASPECT
Research Question: Is inflectional morphology used to interpret meaning?
Task 2: Aural Morpheme Comprehension Task

- Morpheme interpretation task (Sherkina-Lieber 2011a, 2011b) presented with PsychoPy software (Peirce, 2007)

- Participants were seated at a computer and listened to a series of “mini stories” presented aurally in Spanish

- Sentences were constructed so that if the target morpheme is not processed, the information elicited by follow up questions will be ambiguous

- Stimuli controlled for dialect and frequency *Corpus del Español en el Sur de Arizona* (Carvalho, 2012)

- Accuracy scores were recorded

- 12 stories per morphological condition
**TASK 2: AURAL MORPHEME COMPREHENSION TASK**

**Gender**

Angela está estudiando con Marcos para la prueba. Está muy preocupada<sub>fem</sub> / preocupado<sub>masc</sub>.

Angela is studying with Marcos for the test. Is very worried<sub>fem</sub> / worried<sub>masc</sub>.

According to the sentence, who is very worried?

A. Angela  
B. Marcos  
C. Both of them  
D. It's not clear from the sentence

**Grammatical person/number**

Estudio<sub>1st per-sing</sub> / Estudiamos<sub>1st per-plural</sub> para el examen en la biblioteca.

I study<sub>1st per-sing</sub> / We study<sub>1st per-plural</sub> for the exam in the library.

According to the sentence, who studies in the library?

A. We do  
B. You do  
C. I do  
D. It's not clear from the sentence

fem / masc noun-adj concord

first person-sing / plural
**Task 2: Aural Morpheme Comprehension Task**

**Tense**

- Ana trabajaba / trabajó en una tienda de ropa.
- Ana worked / worked in a clothing store.
- According to the sentence, when does Ana working in a clothing store?
  - A. She worked there in the past
  - B. She will work there in the future
  - C. She currently works there
  - D. It's not clear from the sentence

**Aspect**

- Durante las vacaciones, los niños fueron / iban a la casa de sus abuelos.
- During vacation, the children went / went to their grandparents' house.
- According to the sentence, when did the children go to their grandparents house?
  - A. It's not clear from the sentence
  - B. Never
  - C. Regularly in the past
  - D. Once in the past
Task 2: Aural Morpheme Comprehension Task

Mood

<table>
<thead>
<tr>
<th>Test item</th>
<th>Follow up question</th>
<th>Target morpheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>(k) La policia busca una casa que tiene indic / tenga subj una puerta roja</td>
<td>According to the sentence, what are the police looking for? A. It's not clear from the sentence B. Whether there is a house with a red door - they don't have a specific one in mind C. A specific house with a red door D. None of these</td>
<td>indicative / subjunctive</td>
</tr>
</tbody>
</table>
First you will hear the sentence in Spanish.

Next, a follow up question in English will appear.

Finally, you will use the A, B, C, or D keys to correctly answer the question.

(Press the spacebar to continue)
TASK 2: ACCURACY RATES
AGREEMENT > TENSE > ASPECT > GENDER > MOOD
Research Question: Is sensitivity to morphosyntactic violations and/or the ability to utilize morphosyntax to interpret meaning correlated to better performance in a more global comprehension task?
Task 3: Contextualized Listening Comprehension Task

- Contextualized Listening Assessment (CoLA) – part of Minnesota Language Proficiency Assessments as developed by CARLA (Beaudrie, 2006)

- 35-item assessment in which test takers listen to mini-dialogs organized around a story, and respond to multiple choice questions

- Based on ACTFL standards for listening comprehension (intermediate level)
77.49% accuracy
<table>
<thead>
<tr>
<th>Correlations</th>
<th>GlobalComp</th>
<th>GJT</th>
<th>MorphComp</th>
</tr>
</thead>
<tbody>
<tr>
<td>GlobalComp</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>0.674**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>42</td>
<td>41</td>
</tr>
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<td>Pearson Correlation</td>
<td>0.674**</td>
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</tr>
<tr>
<td></td>
<td>N</td>
<td>41</td>
<td>42</td>
</tr>
<tr>
<td>MorphComp</td>
<td>Pearson Correlation</td>
<td>0.689**</td>
<td>0.743**</td>
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<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
• **Research question:** What socioeducational factors in SHRBs’ language histories in childhood might correlate to better performance on any of the previous tasks?
Task 4: Biographical Questionnaire

Hybrid questionnaire:
- National Heritage Language Research Institute’s “Bilingual background questionnaire for Spanish/English speakers” (Montrul 2012)
- 8 categories and 102 questions

Created and distributed using Qualtrics software

Participants completed prior to coming into the lab to complete experimental tasks
## CORRELATION BETWEEN BIOGRAPHICAL QUESTIONNAIRE AND EXPERIMENTAL TASKS

<table>
<thead>
<tr>
<th>Childhood</th>
<th>GJT</th>
<th>Morph Interp</th>
<th>Global Comp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age first exposed to Spanish (p &lt; .05)</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Mother spoke Spanish at home (p &lt; .05)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Mixed languages with siblings (p &lt; .05)</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
SUMMARY

- SHR Bs underlying grammatical competence includes all morphological structures tested.
- SHR Bs are able to use certain morphological structures to interpret meaning – intersection of syntactic and semantic knowledge?
- There is a correlation among all these tasks, although their global comprehension is not as closely related to tasks strictly measuring morphology as those tasks are with one another.
- Contact with Spanish at home with parent (mother), age of exposure to Spanish, and use of Spanish-English mixing with siblings most significantly related with different tasks.
¿INCOMPLETE ACQUISITION?
Arguments against incomplete acquisition (Hudson-Kam & Newport, 2005; Otheguy, 2015; Pascual y Cabo & Rothman, 2012)

- What does “incomplete” mean? Compared to whom?
- What is insufficient input? What about asymmetry?

“What’s so incomplete about incomplete acquisition?” A prolegomenon to modeling heritage language grammars (Putnam & Sanchez, 2013)
AVENUES FOR FUTURE RESEARCH

• Examine the intersection of grammatical competence and language use
• Other experimental methods – ERP
• Implications of these results on teaching methodologies
THANK YOU

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