Grammatical gender’s effect on inferences of biological sex in Spanish speakers

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Abstract

Spanish grammatically categorizes all nouns as “feminine” or “masculine.” While the grammatical gender matches the sex of the referent for some nouns, for most it does not. Animals fall into the category of generic animates, which have biological sexes that are not necessarily congruent with their Spanish grammatical gender. The purpose of this study is to investigate whether Spanish grammatical gender influences how Spanish speakers infer the biological sex of certain animals. Monolingual English speakers and bilingual Spanish-English speakers were asked to tell if neutral animal images contained the fictitious biological property of “GLACK,” which was present in only one gender of animal (e.g., Only females have “GLACK” inside). Research is ongoing, but preliminary results from 9 participants are presented.

Introduction

Background

- Linguistic relativity posits that the language one speaks impacts the way one perceives the world
- Grammatical gender is a system of linguistic markings that classify determiners, nouns, and other parts of speech as “masculine” or “feminine”
- Previous research indicates that grammatical gender biases subjects to associate the grammatical gender with corresponding gendered characteristics or biological sex, producing a gender congruency effect (Saalbach, Imai, and Schalk, 2012; Sera et al., 2002)
- The present stimuli generic animates (Bender, Beller, and Klauser, 2016) which have referents with a biological sex but are not necessarily consistent with the grammatical gender

Purpose

- To investigate if grammatical gender influences how Spanish speakers infer the biological sex of certain animals
- Previous research has found that Spanish-speakers associate gendered characteristics congruently with nouns (Sera et al., 2002); minimal data exists to show if this generalization permeates the object’s biology in adult speakers (Imai et al., 2013)
- This field of study is significant because it adds to our knowledge of how cognitive processes, such as conceptual structure, and human language intersect

Participants

- Goal of 20 native English speakers & 20 native Spanish speakers

Materials

- 26 black-and-white images: 16 experimental animals, 2 control animals and artifacts, 6 practice natural kinds (Snodgrass and Vanderwart, 1980)
- Experimental stimuli were half of each grammatical gender in Spanish, previously rated as neutral by native English speakers

Procedure

- Procedure modified from Saalbach et al. (2012), participants were tested individually in English by the experimenter in one 10-minute session
- Participants were informed of two novel biological characteristics, “ZAT” found in all animals and “GLACK” found in only female (or male) animals
- Participants saw one picture at a time and assert if it had either “ZAT” or “GLACK” inside with a forced “yes”/“no” response paradigm
- Responses indicating the existence of “GLACK” were assumed to be the participant inferring the biological sex of the animal

Example

In this study we are interested in seeing how people of different cultures use certain cues to infer biological characteristics of animals. We will discuss some traits about animals and I will ask you a question about that animal.

Keep the following in mind when answering the next two questions: all plants have leaves.

Does this gorilla have leaves?

Does this tree have leaves?

Every single animal that is a female animal has “GLACK”.

Does this monkey have “GLACK”?

Does this giraffe have “GLACK”?

Preliminary Data

<table>
<thead>
<tr>
<th></th>
<th>Feminine</th>
<th>Masculine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td>0.44</td>
<td>0.56</td>
</tr>
<tr>
<td>English</td>
<td>0.35</td>
<td>0.65</td>
</tr>
<tr>
<td>Total</td>
<td>0.40</td>
<td>0.61</td>
</tr>
</tbody>
</table>

Table 1: the proportion of inferences that are congruent with Spanish grammatical gender (N=9)

Discussion

Implications for Future Research

- Previous studies suggest that there will be a significant effect of grammatical gender on Spanish speakers’ biological inferences
- Affirmative results here would indicate a deeper association between surface characteristics, like grammatical gender, and concepts of animals

Future Directions

- Further the work of Penning (2013), which looks at biological inference based on grammatical gender on biological behavior
- Cross-linguistic studies to assess the strength of gender congruency in two and three-gendered languages (Sera et al., 2002)
- Monolingual studies to observe changes in effect strength

Limitations

- This study is ongoing, therefore the results and conclusions depicted here are incomplete
- Studies suggest that bilinguals think differently about their grammatical gender than monolingual speakers do (Bassetti, 2014)
- Testing native Spanish speakers in English could put them in an “English” mode, suppressing thinking in Spanish
- Adult conceptual development is more sophisticated than a child’s, which could possibly block potential effects