On the processing of mixed language input in bilingual children: A visual world paradigm study
Anne Beatty-Martínez1,2, Christian Navarro-Torres2 & Paola E. Dussias1,2
Department of Spanish, Italian & Portuguese1, Center for Language Science2, The Pennsylvania State University

INTRODUCTION
Grammatical Gender Processing
• Speakers are skilled at using morpho-syntactic information to facilitate spoken word processing (Lew Williams & Fernald, 2007).
• Both adults and children as young as 3 years-old are able to anticipate the grammatical gender of a noun based on the gender information encoded on a prepositional modifier.
• Studies on Spanish-English adult codeswitchers have shown similar facilitatory effects on trials involving feminine marked articles (e.g., la bedėFEM), but not on those involving the masculine gender (e.g., el shoeMASC; Valdés Kroff et al., 2012).

Mixed Language Input
• Although most studies in this domain have been conducted in adults, other studies focusing on bilingual children have proposed a potential processing cost for CS that might obscure informative cues and, thereby, may hinder language development (Byers-Heinlein, in prep).
• Others have associated CS input to smaller vocabulary size in both comprehension and production (Byers-Heinlein, 2012).
• Critically, these studies are not experience-driven; therefore, we do not know whether bilingual children who are exposed to CS simply use different processing patterns modulated by their experience.

METHODS
Participants
• 40 Spanish-English bilingual children (24-26mths)
  • 20 from Puerto Rico & 20 from Granada, Spain
• 40 Spanish-English bilingual adults (parents)
  • 20 from Puerto Rico & 20 from Granada, Spain

Materials & Design

Eye-Tracking

<table>
<thead>
<tr>
<th>Condition</th>
<th>Target</th>
<th>Distractor</th>
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<tbody>
<tr>
<td>mas – same</td>
<td>dog</td>
<td>cat</td>
</tr>
<tr>
<td>mas – diff</td>
<td>dog</td>
<td>cow</td>
</tr>
<tr>
<td>fem – same</td>
<td>cow</td>
<td>sheep</td>
</tr>
<tr>
<td>fem – diff</td>
<td>cow</td>
<td>dog</td>
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Coding Measures

Reaction Time
Proportion of Fixation to Target

Methods (cont.)

Blocks & Trials

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<tr>
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<tbody>
<tr>
<td>CS/Spa</td>
<td>Practice Trials</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 M</td>
<td></td>
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<tr>
<td></td>
<td>5 M</td>
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<td>5 F</td>
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<td>10 MM</td>
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Stimulus Pairing

Confederate Map Task
• Measure of CS ability, different types of switching and frequency of co-occurrence in adults

Working Memory Task
• 8 levels which progress in difficulty by introducing +1 item.
• 4 different controlled conditions: frequency/cognate
• Time is kept constant, isolating effects of difficulty on storage and processing abilities.

Predictions

If mixed language processing is driven by experience...
• Bilingual children are expected to show comprehension patterns that are analogous to those of their parents.
• Both groups should respond faster on different-gender trials involving feminine targets. A CS exposure by trial type interaction is expected in trials involving masculine targets.
• Adults should react more quickly and more accurately than children.
• Granada group could interpret CS block as a language switching task. PR group is presumed to show comprehension strategies that mirror the distributional patterns attested in code-switching communicative contexts.

REFERENCES
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