

# Language Activation in Child L2 Learners

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## 1. Introduction

Language non-selectivity posits that bilinguals activate both languages regardless of which is in use (De Groot, 2011). Highly proficient adult bilinguals produce cognates faster than non-cognates due to the activation of cognates' overlapping, cross-linguistic phonological features. This effect is significantly larger for the non-dominant language, potentially due to the stronger influence of the dominant language (Costa, Caramazza, & Sebastián-Gallés, 2000).

Language co-activation and its effects are modulated by various factors including language proficiency (Van Hell & Tanner, 2012), language mode (Grosjean, 2001), and language dominance (Flege, MacKay, & Piske, 2002). However, the majority of previous studies have focused primarily on highly proficient, balanced adult bilinguals producing words in one language.

The purpose of this study is to investigate language co-activation in early child L2 learners when switching between production in their L1 and their L2. This particular paradigm was used to induce a stronger "bilingual mode."

Compared to highly proficient, balanced adult bilinguals, child L2 learners have a significantly lower dominance and proficiency in their L2. Therefore, child L2 learners could show a cognate facilitation effect for L2 production given their high dominance in L1, but should not show an effect for L1. Alternatively, given previous findings of inhibition in switch tasks (Meuter & Alport, 1999), child L2 learners may inhibit their stronger L1 and thus show a cognate facilitation effect for L1 but not for L2.

## 2. Methods

### 2.1. Participants

Children ages 6 to 10 years old were recruited from the local Austin area. All children were native English speakers learning Spanish. Most were also enrolled in English-Spanish dual language programs, but were primarily exposed to and dominant in English.

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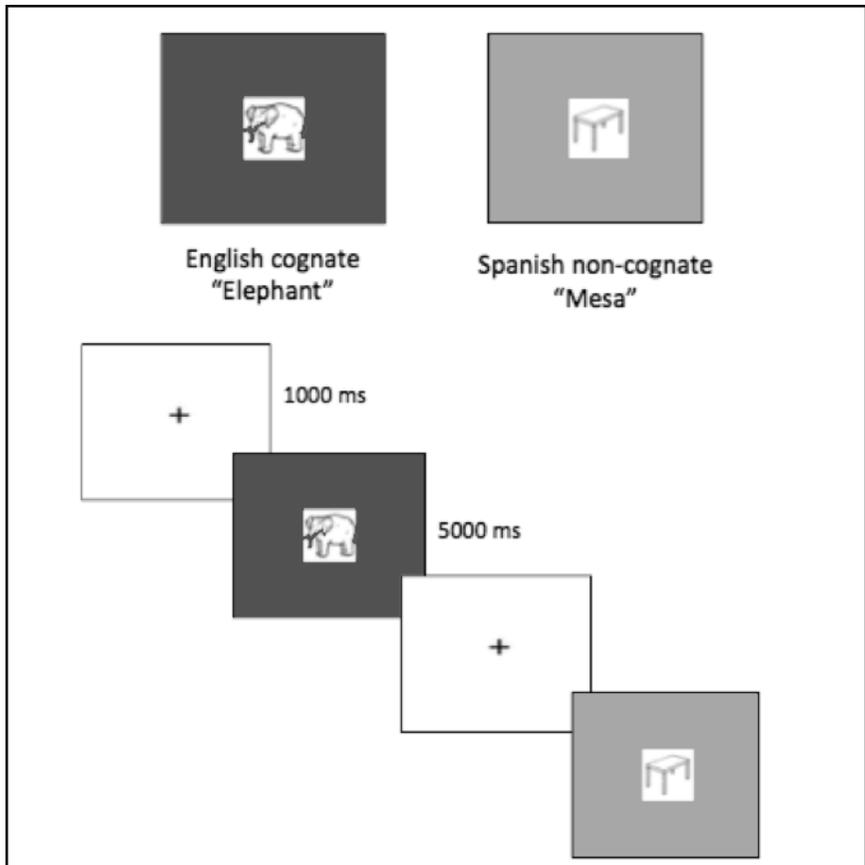
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## 2.2. Procedure

Children's language dominance was assessed using a modified version of the Bilingual Language Profile (Birdsong, Gertken, & Amengual, 2012).

The task consisted of a language-switch, picture-naming, paradigm. Half of the picture names were in English and half in Spanish. Half of the names in each language were cognates (e.g., elephant, *elefante*) and half were non-cognates (e.g., table, *mesa*). See Figure 1 for an example of the experimental stimuli and a presentation sequence.

Children were instructed in both English and Spanish and told to name pictures according to their assigned background color as quickly and accurately as possible. Response times were measured using SuperLab software as well as manually recorded to track for errors.



**Figure 1. Sample Stimuli and Sequence**

### 3. Analyses and Results

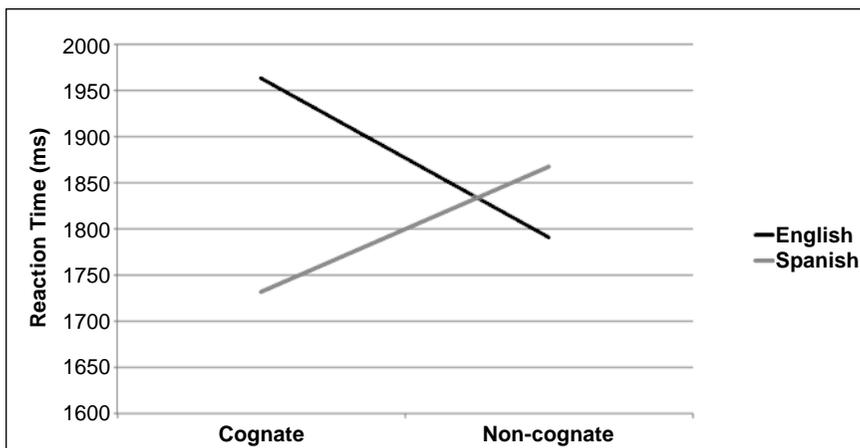
Using a linear mixed effects model, preliminary analyses reveal a marginally significant two-way interaction between language and cognate status ( $t(490) = 1.82, p = .07$  (see Figure 2). In accordance with our first hypothesis, 6- to 10-year-old native English-speaking Spanish L2 learners in this study tended to experience a cognate facilitation effect when producing words in their L2 but not when producing words in their L1.

### 4. Discussion

The results from this study partially extend previous findings from highly proficient adult bilinguals to child L2 learners. Like adult bilinguals, child L2 learners also tended to experience a cognate facilitation effect when producing words in their non-dominant language. This result may be reflective of the joint activation of both languages, specifically, the support provided by the “stronger” L1 when producing cognates in L2.

However, unlike adult bilinguals, child L2 learners did not experience a cognate facilitation effect when producing words in their L1. Despite performing a switch task that presumably would increase activation in both languages, children’s L2 was most likely not strong enough to influence the production of cognates in L1.

Follow up studies should explore these effects in balanced bilingual children and compare the effects to child L2 learners.



**Figure 2. Switch Trial Reaction Times for Cognate and Non-cognate Production by Language**

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