The consequences of language-specific syntax for bilingual word recognition

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Background

- Cross-language overlap / ambiguity

Word type	Spanish	=	English
Cognate	piano	=	piano
Homograph	pie	=	foot

- If a bilingual can function as two monolinguals, word recognition in one language should not be influenced by overlap with another language.

Word recognition

- Language non-selectivity: Parallel activation of words in the non-target language in addition to the language in use (e.g., Dijkstra, 2005)
- Yet bilinguals can read and speak in one language without random errors of language
- Bilinguals develop a mechanism of control that enables fluent performance and also code-seitching (e.g., Green, 1998; Myers-Scotton, 2002)

Role of sentence context

- Perhaps language non-selectivity is a byproduct of processing language out of context
- What happens when there is a meaningful context? Readers still experience cross-language activation from the unintended language (e.g., Duyck et al., 2007; Libben & Titone, 2009; Schwartz & Kroll, 2006)
- Semantic biases may eliminate such activity (e.g., Van Hell & De Groot, 2008)

What about syntax?

- Role of sentence context has largely been ignored
- **Syntax differs across language** (semantics is largely shared)
- An example of Spanish-specific syntax:

use of clitic (le), drop subject of RC ([pro])

Las monjas le dieron las mantas que [pro] habían bordado a la directora del orfanato.

The nuns gave the quilts that they had embroidered to the director of the orphanage.

Goals of the current study

- Further examine the effects of sentence context on parallel activation of the bilingual's two languages
- Determine whether language-specific syntax enables language-selective lexical access

Acknowledgements

NSF OISE 0968369 PIRE Grant to the CLS
NSF Grant BCS-0821924 to Paola Dussias
NIH Grant HD50629 to Paola Dussias
NSF Grant BCS-0955090 to Judith Kroll
NIH Grant HD053146 to Judith Kroll

Participants

- 41 Spanish-English bilinguals
  - 11 - El Paso, TX
  - 20 - Granada, Spain
  - 10 - State College, PA
- 12 Monolingual English speakers

Group comparisons		
Ind. diff. measure	Monolingual	Bilingual
Simon task (effect in ms)	46 (27)	46 (21)
O-span (# words recalled)	46 (7)	48 (7)
Spanish grammar (/50)	— (—)	42 (6)
English grammar (/50)	46 (3)	36 (9)
Mean L1 self-rating (/10)	9.6 (0.4)	9.2 (1.2)
Mean L2 self-rating (/10)	3.2 (1.6)	7.9 (1.3)

Materials

- Two language blocks (English / Spanish)
  - Bilinguals performed in Spanish, monolinguals in English
- 48 cognates and 48 noncognates embedded as critical target words to be named
- Spanish sentences had Spanish-specific syntax or non-specific syntax (non-specific were valid constructions in English)
- English sentences were translations of the Spanish sentences

Cognate targets	
Language-specific syntax	
Spanish	English matched
Los estudiantes *le* contaron el cuento que leyeron el otro día al **profesor** de literatura inglesa	The students recounted the story that they read the other day to the **professor** of English literature
Language-general syntax	
Spanish	English matched
El taxista que estaba estacionado en la esquina de la panadería llevó al **profesor** a su casa	The taxi driver who was parked at the corner of the bakery took the **professor** to her house

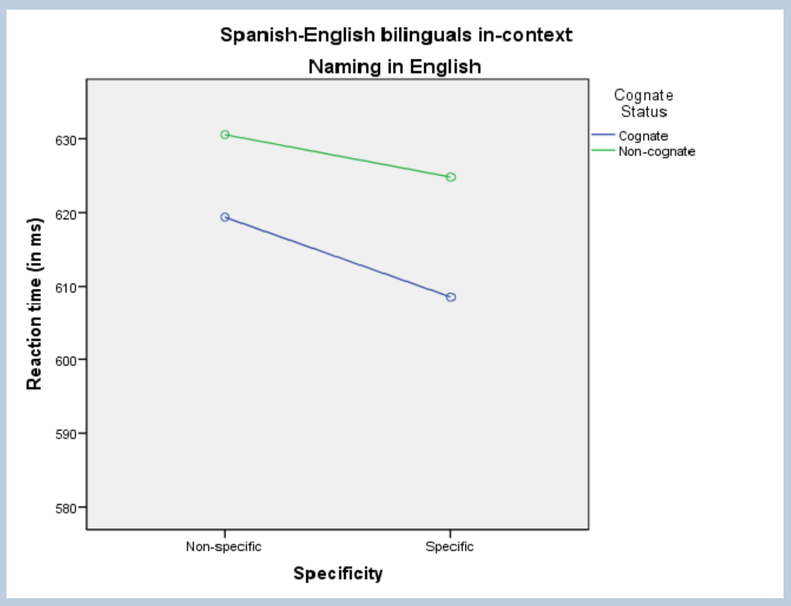
Results: Monolinguals

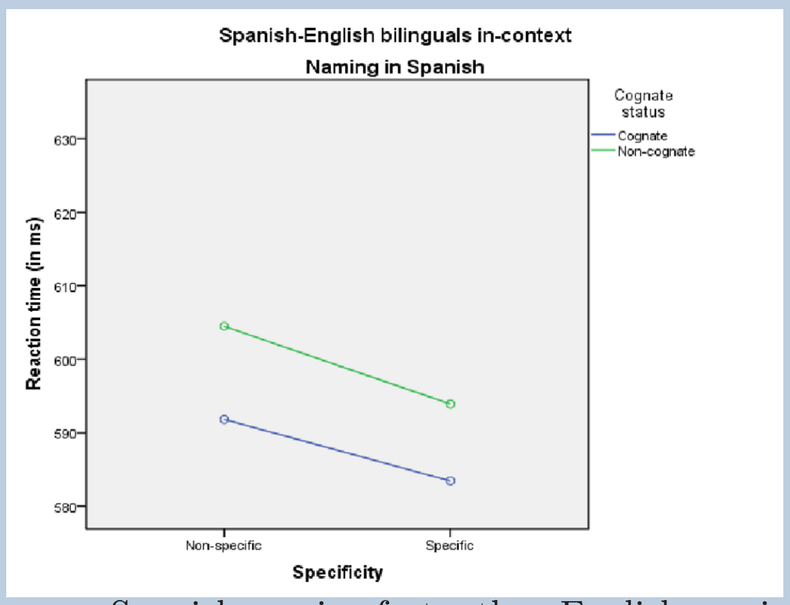
- Sentences with specific syntax were faster than sentences with language-general syntax
- **No cognate effect**
- **No interaction between cognate status and specificity**

⇒ Target words are well controlled

⇒ Some properties of the Enlgish syntax may not be well controlled, but no interaction with targets

Results: Bilinguals





- Specific is faster than non-specific
- Cognates are faster than non-cognates
- Spanish naming faster than English naming
- Specific faster than non-specific
- Cognates faster than non-cognates
- **No modulatation of the cognate effect by language-specific syntax**

Conclusions

- No evidence that syntactic constraints influence language co-activation
- Possibility of a subtle modulation with U.S. participants