# Getting better over time: Syntactic satiation effects as a window into syntactic representations in a second language

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### **1. English vs Spanish**

- English & Spanish questions appear to have superficially similar word orders (Wh - V - S)
  - What will John buy? English:
  - Qué <u>comprará</u> Juan? Spanish: lacksquare
- But, not clear if structure of questions are truly the same<sup>1</sup>

#### English **Spanish**

🛞 When John will huy 😳 🖓 Cuándo Juan

### 4. Current Study

- 32 Native English speakers; 23 L1 Iberian Spanish with mid-high English proficiency
- Web-based sentence rating task in English
  - 25 Targets over 5 blocks
  - 36 Fillers
- Compared average acceptability ratings (5-point scale) from first half against last half of study

#### Sentence Types & English versus Spanish

## 7. L1 Eng: 1<sup>st</sup> vs 2<sup>nd</sup> Half 1 = Completely Unacceptable; 5 = Completely Acceptable First Half Last Half **B**.5 3

villen john will buy			
this book?	<u>comprará</u> ese libro?		
☺ I wonder what will	<ul> <li>Me pregunto qué</li> </ul>		
John <u>buy</u> .	<u>comprará</u> Juan.		
③ What newspapers	😐 ¿Qué diarios Juan		
John never will read?	nunca <mark>leerá</mark> ?		

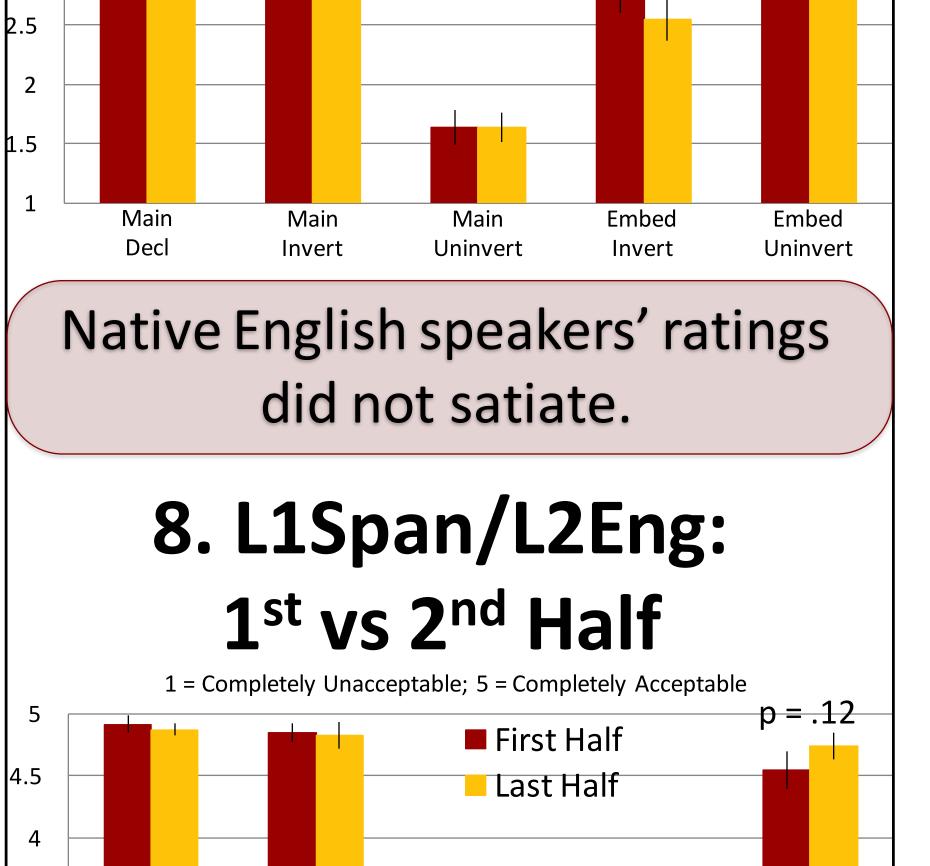
2. Research Questions

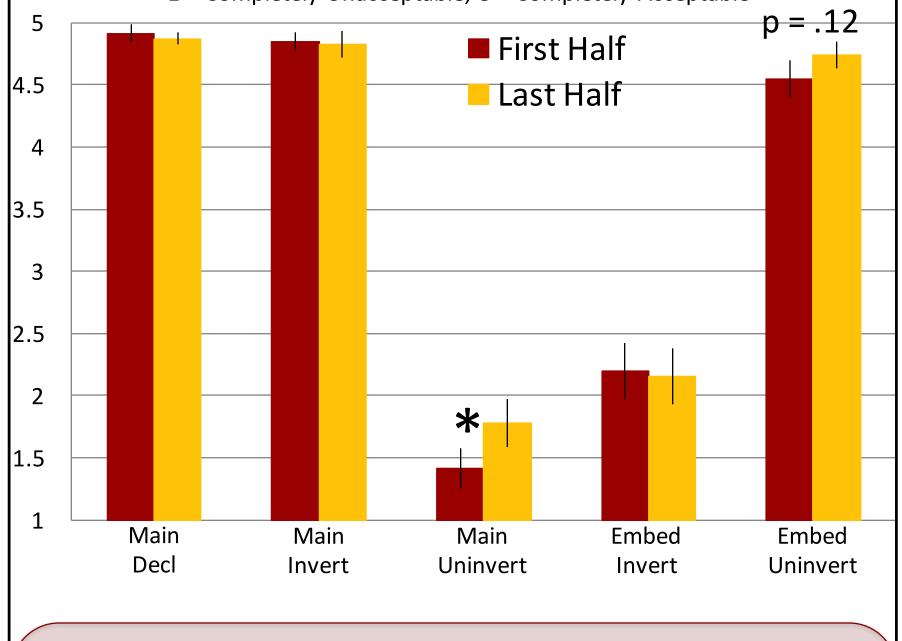
How do L1 Spanish speakers represent the structure of English wh-questions? Specifically, do surface word order similarities lead learners to assume the same syntactic structure for wh-questions in both languages?

**3. Syntactic Satiation** 

Grammaticality						
English	Νο	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	No	
Sentence	Embed	Embed	Main	Main	Main	
Туре	Invert	Uninvert	Decl	Invert	Uninvert	
Spanish	<u>Yes</u>	No	<u>Yes</u>	<u>Yes</u>	No	

5. Hypothesis & Predictions





- **Defined:** Some sentences that initially sound ungrammatical sound "increasingly acceptable" after repeated exposures<sup>2</sup>
- Goodall (2011)<sup>3</sup>: Behavioral evidence for structural differences in English versus Spanish questions
- Tested native English speakers in English, native Spanish speakers in Spanish

English: No Sa	atiation	<b>Spanish: Satiation</b>			
Ungramma	atical	Ungrammatical			
sentences s	ound	sentences sound			
"equally b	ad"	"better" with			
regardless of e	exposure	increased exposure			
Trial #	Rating	Trial #	Rating		
Exposure 1	$\overline{\mathbf{S}}$	Exposure 1	$\overline{\mathbf{S}}$		
Exposure 3	$\overline{\mathbf{i}}$	Exposure 3			
Exposure 5	$\overline{\mathbf{i}}$	Exposure 5			

English sentences that are ungrammatical in Spanish will satiate

**Learning Guided by** 

**Word Order Cues** 

**Build Spanish-like** 

representations

through transfer

**English sentences will** 

behave Spanish-like

No changes in grammaticality across halves for any sentences.

**Learning Beyond Word** 

**Order Cues** 

**Build English-like** 

representations

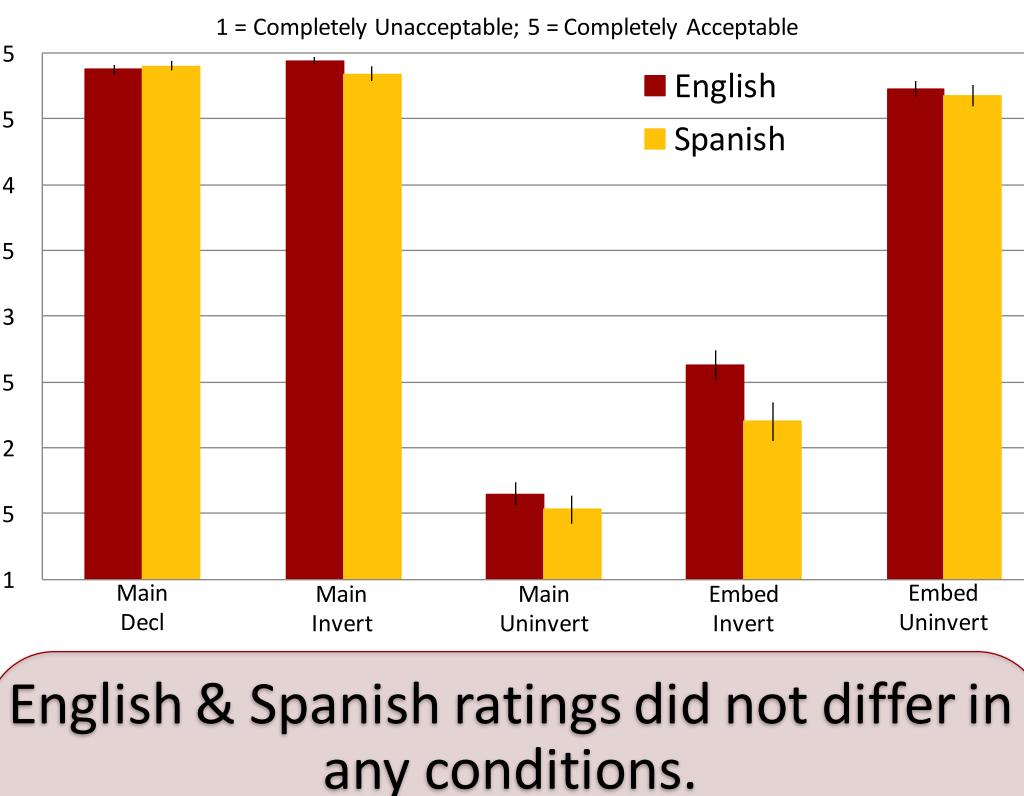
through native-like

learning

English sentences will

behave English-like

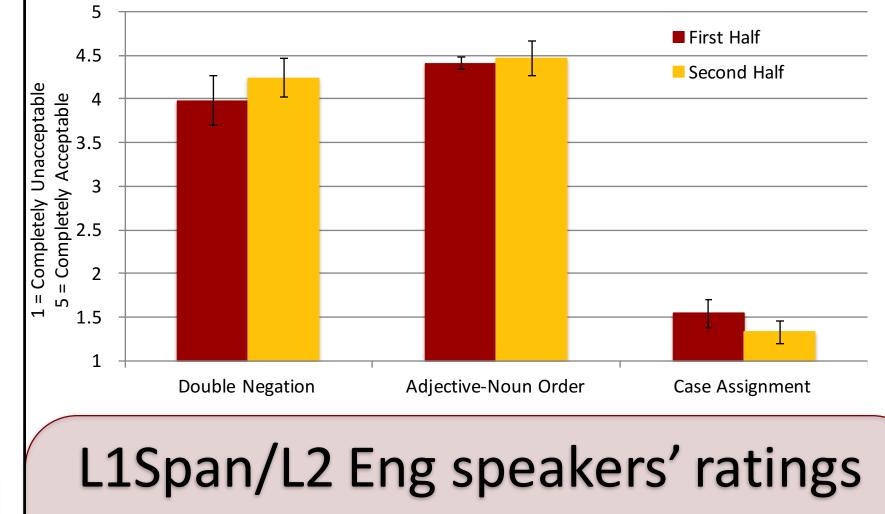
## **6. Entire Experiment:** L1 Eng vs L1 Span



L1Span/L2 English speakers' ratings satiated in Main Uninvert condition.

## **9. Satiation due to extra** linguistic factors? No.

- Satiation found only in predicted condition (i.e. Main Uninvert)
- No satiation in any ungrammatical *fillers* L1Span/L2Eng: Fillers 1<sup>st</sup> vs 2<sup>nd</sup> Half





**B**.5

3

2.5

2

1.5

did not satiate for any fillers.

#### **10.** Conclusions

Averaging across entire study, L2'ers judgments of English questions *appeared* native-like, but satiation patterns revealed that processing & representations were different from L1'ers.

- For L2'ers, Spanish question structure interfered with representations of English question structure
- Satiation can be a new indicator of "native-like" proficiency in L2 research

### **11. Future Work**

 Main vs Embedded questions: Native Spanish ratings for embedded clauses required for baseline.

• Relationship between L1 & L2 structures: Within speakers, extent of satiation in L1 should match extent of satiation in L2

• What drives satiation?

Acknowledgments: This work was supported by the USC Del Amo Foundation Research Award. References: [1] Barbosa, P. (2001). On inversion in wh-questions in Romance; Goodall, G. (2004). On the syntax and processing of wh-questions in Romance; Barbosa, P. (2001). in Spanish; Zubizarreta, M.L. (2007). "The Left Edge in the Spanish Clausal Structure"; etc. [2] Snyder, W. (2000). An experimental investigation of syntactic satiation effects. Braze, D. (2002). Grammaticality, acceptability, and sentence processing: A psycholinguistic study; etc. [3] Goodall, G. (2011), Syntactic Satiation and the Inversion Effect in English and Spanish Wh-Questions.