

## L2 syntax meets information structure: Word order at the interfaces

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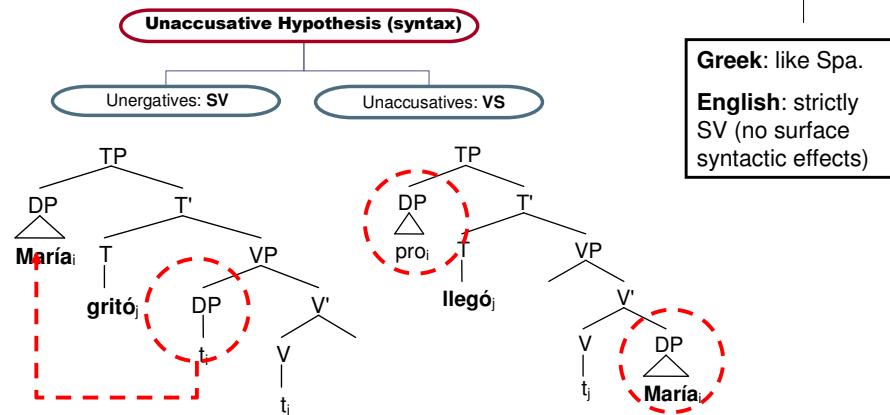
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## AIM OF THE PRESENTATION

- To show that:
  - Learners of Romance (**L1 English/Greek – L2 Spanish**) as well as Romance learners of English (**L1 Spanish/Italian – L2 English**) are sensitive to **discourse status (focus)** in L2 subject-inversion structures, BUT:
    - they show residual (yet persistent) **problems when encoding information status syntactically.**
- Experimental** and **corpus** data support claim that deficits at syntax-discourse interface are **syntactic** in nature.
  - V(erb) S(ubject) structures
    - Experimental data of L2 Spanish** (Lozano 2006a, 2006b),
    - Corpus analysis studies in L2 English.** (Lozano & Mendikoetxea, 2007, 2008, in preparation)
- A full account of word order acquisition needs to take into account properties at three interfaces: **lexicon-syntax**, **syntax-discourse** and **syntax-phonology**.

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## Word Order L1 Spanish/Italian (1) Lexicon-syntax: Unaccusative Hypothesis



Neutral (non-focus) contexts: Discourse-initial

- (1) a. **María gritó** (unerg)      (2) a. **# María llegó.** (unacc)  
 b. **#/Gritó María.**      b. **Llegó María**  
 'María shouted'      'María arrived.'

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## Word Order L1 Spanish/Italian (2) Syntax-discourse

➔ Postverbal subjects are produced freely with all verb classes

- (3) a. Ha **telefonado María** al presidente. (*transitive*).  
 Has phoned Mary the president
- b. Ha **hablado Juan.** (*unergative*)      c. Ha **llegado Juan** (*unaccusative*)  
 has spoken Juan      has arrived Juan

➔ Inversion as '**focalisation**':

- preverbal subjects are **topics** (given information)
- and postverbal subjects are **focus** (new information) (Belletti 2001, 2004, Zubizarreta 1998)

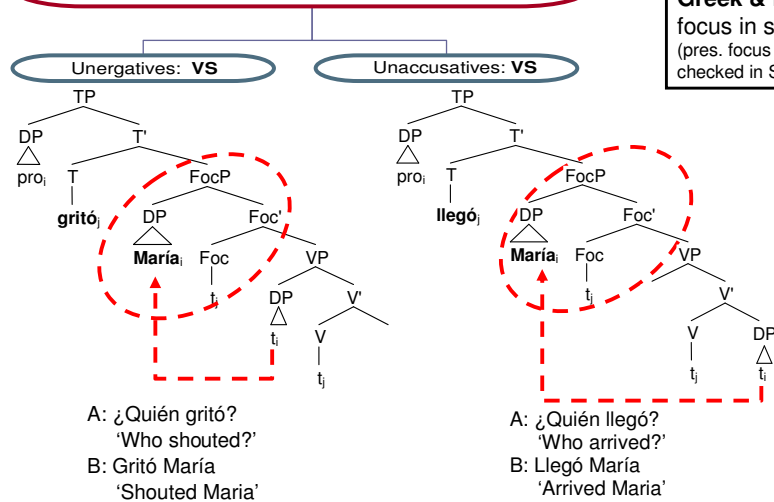
- (4) ¿**Quién** ha llegado/hablado? (Sp)  
 Who has arrived/spoken?  
 i. Ha llegado/hablado **Juan**  
 ii. **#Juan** ha llegado/hablado
- (5) **Chi** è arrivato/parlato? (It)  
 i. É arrivato/ A parlato **Gianni**  
 ii. **#Gianni** é arrivato/a parlato

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## Syntax-discourse: Narrow focus



**Presentational focus (syntax-discourse interface)**



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## Empirical evidence: Spanish/Italian natives



- **Empirical studies** on Spanish native speakers show that verb choice may determine word order (Hertel 2003, Lozano 2003, 2006a, b; see also Pinto 1999) :

- **Neutral**: [lexicon-syntax]
  - SV (unerg) – VS (unacc)
- **Narrow focus contexts**: [syntax-discourse]
  - VS (unerg, unacc)

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## EXPERIMENTAL STUDY



### V-S structures in:

L1 English – L2 Spa  
L1 Greek – L2 Spa

Lozano (2006a, 2006b)

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## PREVIOUS FINDINGS



- **Lexicon-Syntax (Unacc. Hypothesis)**:
  - English-speaking learners of Spanish are sensitive to the syntactic effects of the Unacc. Hypothesis from early stages of development: **SV with unergatives** but **VS with unaccusatives** (De Miguel, 1993; Hertel, 2000, 2003; Hertel & Pérez-Leroux, 1999).
- **Syntax-Discourse**: under-researched area:
  - Hertel (2003): presentationally focused subjects in final position are **acquired late** in L2 Spa. Same finding for L2 Italian (Belletti & Leonini, 2004).
  - Distinct word orders to mark focus is **acquired late** or perhaps **never acquired in native-like fashion**.

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## Method (Lozano 2006a, 2006b)

Groups	Spanish native controls n=14	L1 Greek L2 Spa n=18	L1 English L2 Spa n=17
Proficiency		Mean = 92% (range 80% - 100%)	Mean = 90% (range 80% - 100%)

Advanced proficiency (Univ Wisconsin College Placement Test)

### Instrument:

- Contextualised **acceptability judgement test** (Hertel, 2000)

Tú estás en una fiesta con tu amiga Laura. Laura sale de la habitación y en ese momento llega la policía porque hay mucho ruido en la fiesta. Cuando Laura vuelve, te pregunta: '¿Quién llegó?' Tú contestas:

- (a) La policía llegó. -2 -1 0 +1 +2  
 (b) Llegó la policía. -2 -1 0 +1 +2

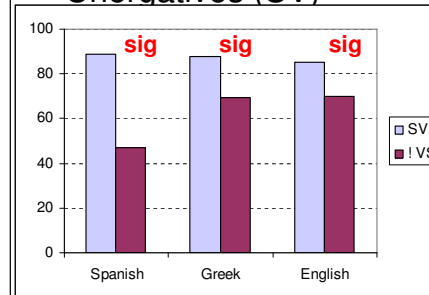
**Translation** 'You are at a party with your friend Laura. Laura leaves the room and at that moment the police arrive because the party is too noisy. When Laura comes back, she asks you: 'Who arrived?' You answer:

- (a) The police arrived -2 -1 0 +1 +2  
 (b) Arrived the police -2 -1 0 +1 +2

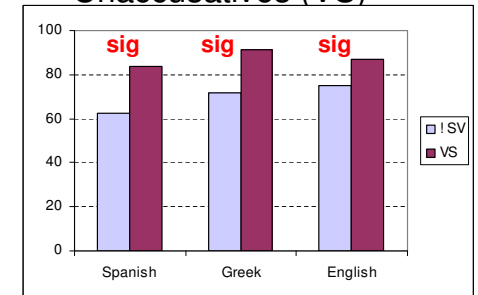
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## Results: neutral contexts (Unaccusative Hypothesis)

### Unergatives (SV)



### Unaccusatives (VS)



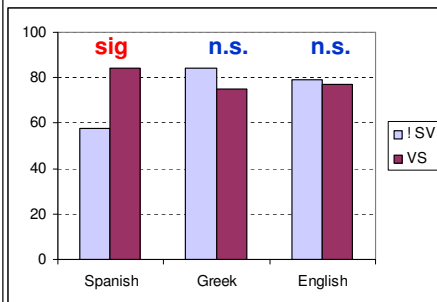
Convergence with natives (native-like knowledge)

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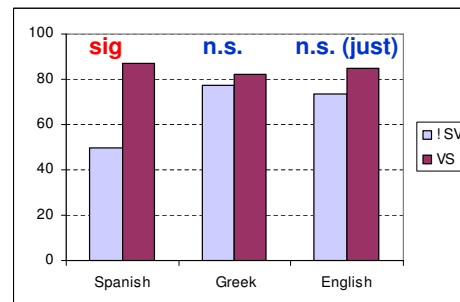
## Results: focused contexts (Narrow focus at syntax-discourse interface)

¿Quién gritó / llegó? "Who shouted / arrived?"

### Unergatives (VS)



### Unaccusatives (VS)



Divergence with natives (subtype: optionality)

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## Conclusion of Experimental Study

- Features at the **syntax-discourse** interface are persistently problematic for advanced learners, e.g. work by **Sorace, Tsimpili, Montrul** → **pragmatic deficit**.
- Lozano (2006a, 2006b):**
  - There is no reasons to think that learners are not sensitive to the topic/focus distinction, as it is present in L1 (in fact, it is **universal**: Vallduví 1993, 1995, Vallduví & Engdahl 1996).
  - Learners are sensitive to discourse status but are unable to encode it **syntactically** with the pragmatically most adequate word order → **syntactic deficit**
- In line with findings by **Domínguez and Arche (2008):**
  - Availability of optional forms can be accounted for by a purely **syntactic deficit**, probably due to apparently ambiguous input occurs

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# CORPUS STUDY #1

## V-S structures in:

English natives

L1 Spa – L2 Eng

Lozano & Mendikoetxea (2007, in prep.)

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## RESEARCH QUESTIONS

### ➤ Main question:

- What are the conditions governing the production of VS structures in L2 English?
- Do learners of English produce inverted subjects (VS) under the same conditions as English natives do, regardless of problems to do with syntactic encoding (grammaticality)?

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## Word Order in native English (1)

➡ Fixed SV(O) order- Restricted use of postverbal subjects:

- (a) XP V S (Inversion structures with an opening adverbial)

- (6) a. [On one long wall] hung a row of Van Goghs. [FICT]
- b. [Then] came the turning point of the match. [NEWS]
- c. [Within the general waste type shown in these figures] exists a wide variation. [ACAD]

[Biber *et al.* 1999: 912-3]

- (b) There-constructions

- (7) a. Somewhere deep inside [there] arose a desperate hope that he would embrace her [FICT]
- b. In all such relations [there] exists a set of mutual obligations in the instrumental and economic fields [ACAD]
- c. [There] came a roar of pure delight as... [FICT]

[Biber *et al.* 1999: 945]

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## Word order in native English (VS order)

- **Lexicon-syntax interface** (Levin & Rappaport-Hovav, etc):
  - Unaccusative Hypothesis (Burzio 1986, etc) [existence and appearance]
    - (8) \*There sang four girls at the opera. [unergative verb]
    - (9) There arrived four girls at the station. [unaccusative verb]
- **Syntax-discourse interface** (Biber *et al.*, Birner 1994, etc):
  - Postverbal material tends to be **focus/relatively unfamiliar information**, while preverbal material links S to previous discourse: **Principle of End-Focus**.
    - (10) We have complimentary soft drinks and coffee. Also complimentary is red and white wine.
- **Syntax-Phonological Form (PF) interface** (Arnold *et al.* 2000, etc)
  - **Heavy** material is sentence-final (**Principle of End-Weight**, Quirk *et al.* 1972) – general processing mechanism (reducing processing burden)
    - (11) One Sunday morning the warm sun came up and - pop!- out of the egg came a tiny and very hungry caterpillar. [Eric Carle, *The very hungry caterpillar*, London: Penguin]

Subjects which are **focus, long** and complex tend to occur postverbally in those structures which allow them (unaccusative Vs).

# Word Order in native Spa / Ital (VS order)



- **Lexicon-syntax interface**

No restrictions: postverbal subjects occur with all verb classes

- **Syntax-discourse interface**

Postverbal subjects in Spanish and Italian are focus

- **Syntax-Phonological Form (PF) interface**

**Heavy** subjects show a tendency to be postposed – a universal language processing mechanism: placing complex elements at the end of a sentence reduces the processing burden (J. Hawkins 1994).

Subjects which are **focus**, **long** and **complex** tend to occur postverbally, with no restrictions at the lexicon-syntax interface.

# The phenomenon in SLA



Production of **postverbal subjects** in L2 English (Zobl 1989, Rutherford 1989, Oshita 2004)

Only with **unaccusative** verbs (never with unergatives).

- > **Unaccusatives**: *arrive, happen, exist, come, appear, live...*
- > **Unergatives**: *cry, speak, sing, walk ...*

- L1 Spanish/Italian/Arabic – L2 English:

- (12) ...it arrived **the day of his departure...**
- (13) And then at last comes **the great day.**
- (14) In every country exist **criminals**
- (15) ...after a few minutes arrive **the girlfriend** with his family too.



- **Explanation**: lexicon-syntax interface (Psychological reality of the **Unaccusative Hypothesis**)

CRUCIAL DIFFERENCE: These previous studies focused on ERRORS, thus emphasising the **differences** between native and non-native structures. By contrast, our study emphasises the **similarities** between native and non-native structures.

# Hypotheses



**GENERAL HYPOTHESIS:**

**Conditions licensing** VS in L2 Eng are the **same** as those in native Eng, DESPITE differences in syntactic encoding.

- **H1 [LEXICON]: Lexicon-syntax interface:**

- Postverbal subjects with **unaccusatives** (never with **unergatives**)

- **H2 [WEIGHT]: Syntax-PF interface:**

- Postverbal subjects: **heavy** (but preverbal **light**)

- **H3 [FOCUS]: Syntax-Discourse interface:**

- Postverbal subjects: **focus** (but preverbal **topic**)

## METHOD (1)

- Based on Levin (1993) and Levin & Rappaport-Hovav (1995):

- **Unergatives**: *cough, cry, shout, speak, walk, dance...*
  - [TOTAL: 41]
- **Unaccusatives**: *exist, live, appear, emerge, happen, arrive...*
  - [TOTAL: 32]



UNACCUSTATIVES		UNERGATIVES		
SEMANTIC CLASS	VERB	SEMANTIC CLASS	VERB	
EXISTENCE	exist	EMISSION	beam	
	flow		burn	
	grow		flame	
	hide		flash	
	live		SOUND EMISSION	bang
	remain	beat		
	rise	blast		
	settle	boom		
	spread	clash		
	survive	crack		
	APPEARANCE	appear	crash	
		arise	cry	
		awake	knock	
begin		ring		
break		roll		
develop		sing		
emerge		SMELL EMIS.	smell	
flow			SUBSTANCE EMISSION	pour
follow		sweat		
happen		COMMUNICAT.	MANNER OF SPEAKING	cry (*)
occur	shout			
rise	sing (*)			
DISAPPEARANCE	die	TALK VERBS	speak	
	disappear		talk	
INHERENTLY DIRECTED MOTION	arrive	BODILY PROCESSES	BREATHE VERBS	breathe
	come			cough
	drop			cry (*)
	enter			sweat (**)

# Corpora

- **Copora:**
  - L1 Spa – L2 Eng (2 corpora)
  - Eng natives

Table 1: Corpora details

	Learner corpora		Native corpus	
Words	ICLE-Spanish	200,376	LOCNESS USarg	149,574
	WriCLE	63,836	LOCNESS USmixed	18,826
			LOCNESS Alevels	60,209
			LOCNESS BRsur	59,368
<b>Total no. of words</b>		<b>264,212</b>		<b>288,177</b>

- **Query software:** WordSmith v. 4.0 (Scott 2004)

Corpus	Verb type	Usable concordances
Learner	Unerg	181
	Unac	820
Native	Unerg	185
	Unac	719
<b>TOTAL</b>		<b>1905</b>

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# H1 results: syntax-lexicon

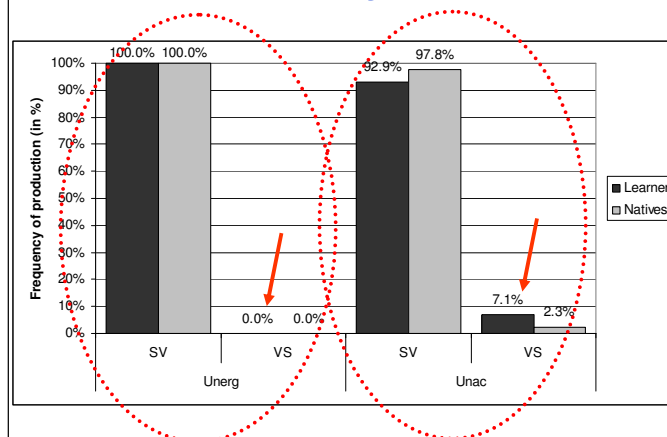


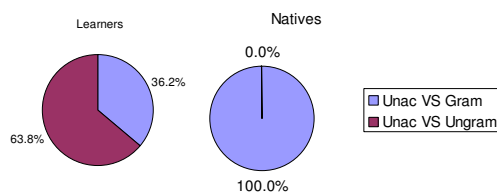
Table 1: Frequency of postverbal subjects produced

Corpus	Verb type	Postverbal subjects	Usable concordances	% frequency
Learner	Unerg	0	181	0%
	Unac	58	820	7.1%
Native	Unerg	0	185	0%
	Unac	16	719	2.2%

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# H1: Unaccusative: grammatical vs ungrammatical VS

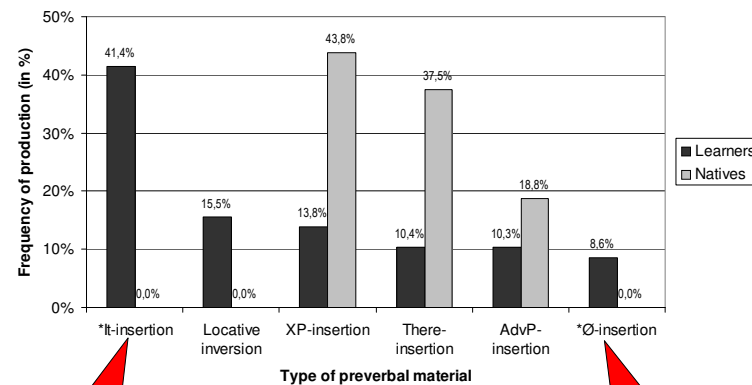
- **GRAMM.**
  - **There-insertion:**  
Natives: there exists **a demand for this work to be done...**  
Learners: There exist **positive means of earning money.**
  - **AdvP-insertion:**  
Natives: Thus began **the campaign to educate the public...**  
Learners: ...and here emerges **the problem.**
  - **Locative inversion:**  
Natives: [no production]  
Learners: In the main plot appear **the main characters: Volpone and Mosca.**
- **UNGRAM.**
  - **\*it-insertion:**  
Learners: \*In the name of religion **it** had occurred **some important events.**
  - **\*Ø-insertion:**  
Learners: ...\*because exist **the science technology and the industrialisation.**
  - **\*XP-insertion:**  
Learners: \*In 1760 occurs **the restoration of Charles II** in England.



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# H1: Unaccusative: grammatical vs ungrammatical VS

- According to structure type

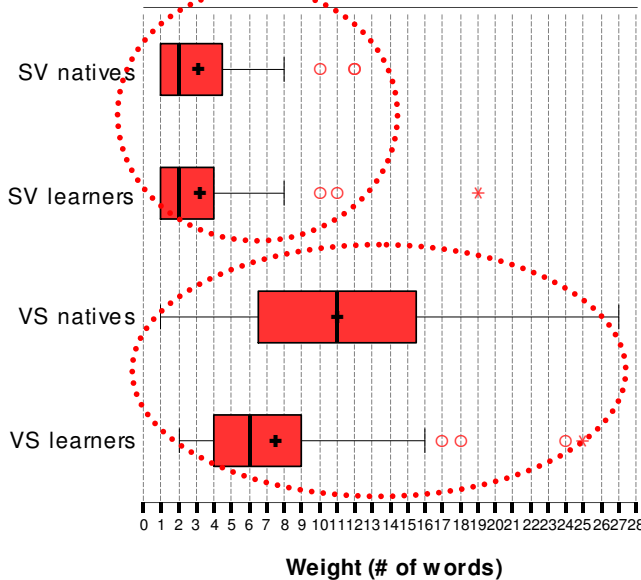


Ungrammatical

Ungrammatical

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## H2 results: syntax-phonology



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## Examples H2: syntax-phonology



### SV: typically LIGHT (Pronoun, D + N)

Learners: ...but **they** may appear everywhere.

...since **the day** eventually came...

Natives: **These debates** began over two decades ago.

...**a great controversy** exists over the topic.

### VS: typically HEAVY (postmodification)

Learners: Against this society drama emerged **an opposition headed by Oscar Wilde and Bernard Shaw**.

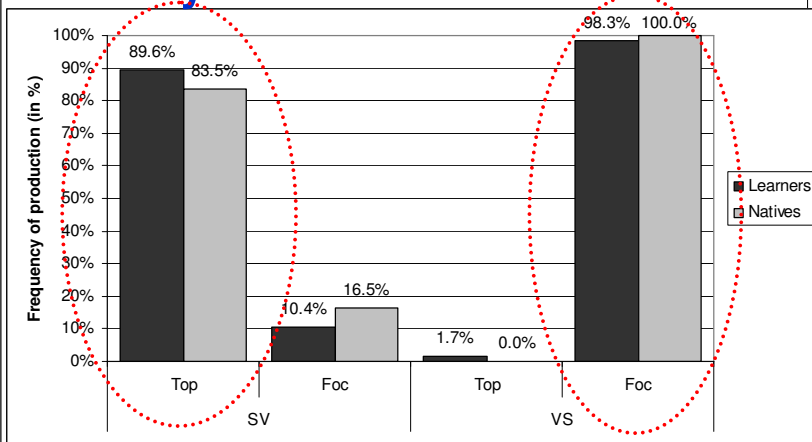
... exists yet in Spain **a group of people who are supposed to be professional soldiers**.

Natives: With this theory also came **the area of quantum mechanics**.

Thus began **the campaign to educate the public on how one contracts aids**.

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## H3: syntax-discourse



Corpus	Weight	SV order	VS order
Learner	Light	65/96 (67.7%)	11/58 (19.0%)
	Heavy	31/96 (32.3%)	47/58 (81.0%)
Native	Light	62/91 (68.1%)	3/16 (18.8%)
	Heavy	29/91 (31.9%)	13/16 (81.3%)

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## Examples H3: syntax-discourse



### VS: FOCUS

Learners: ...there also exists **a wide variety of optional channels which have to be paid**.

Natives: With this theory also came **the area of quantum mechanics**.

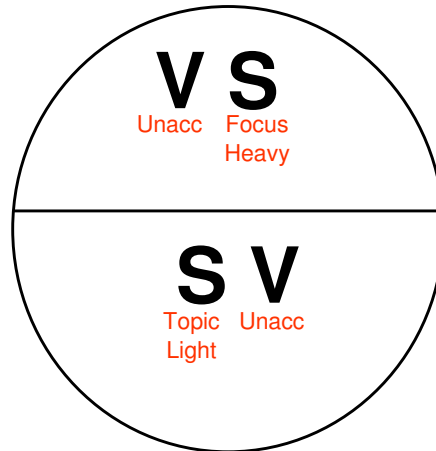
### SV: typically TOPIC

Learners: I use the Internet ... I find windows ... if they press on any of these windows ... **these windows** cannot appear because a child could enter easily...

Natives: However, Hugo is not prepared ... Louis took such exception to Hugo ... **Hugo** came from a bourgeoisie family.

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## Conclusion of corpus study (1)



### Interfaces:

- Lexicon-syntax
- Syntax-discourse
- Syntax-phonology

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## Conclusion of corpus study (2)

- These results confirm that Spanish L2 learners of English produce postverbal subjects under exactly the **same 3 interface conditions** as in L1 English (unaccusativity being a necessary but not a sufficient condition).
  - **Unaccusativity Hypothesis**: postverbal subjects appear with unaccs.
  - **End-weight principle**: postverbal subjects tend to be long and complex.
  - **End-focus principle**: postverbal subjects tend to be focus.
- So, learners **do not show a pragmatic deficit** at the **syntax-discourse** interface.
- Learners **show rather a persistent problems in the syntactic encoding of the construction**
  - High production of ungrammatical examples (it-insertion, Ø-insertion, wrong XP).
  - Spanish learners **overuse** the construction and show a lexical bias for the V exist.  
**Example**
    - \* ... it will not exist **a machine or something able to imitate the human imagination.**

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# GENERAL CONCLUSIONS

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## General conclusions (1)

- **L1 English-L2 Spanish**: learners are sensitive to **discourse status** (Topic, Focus) BUT are unable to encode it **syntactically** with the pragmatically most adequate **word order**.
- **L1 Spanish – L2 English**: learners are sensitive to **discourse status** (and weight effects) but show persistent problems in the **syntactic encoding** of the construction and **overuse** the construction.

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## General conclusions (2)



- **Our studies:**
  - Support substantial body of research: **Unaccusative Hypothesis** to be **psychologically real** in L2, **BUT**
  - **Unaccusativity** is a necessary but **not** a **sufficient** condition for the acceptability and/or the production of VS structures.
  - Properties operating at both the **syntax-discourse** and the **syntax-phonology interfaces**, relevant for a variety of word order phenomena in native English (see e.g, Arnold et al. 2000), also play a crucial role in constituent ordering in L2 English.
- **Language specific or universal pattern?**
  - **L1 Italian – L2 Eng vs L1 Spa – L2 Eng** (Lozano & Mendikoetxea 2008): same results
    - **Unaccusativity Hypothesis:** postverbal subjects appear with unaccs.
    - **End-weight principle:** postverbal subjects tend to be long and complex.
    - **End-focus principle:** postverbal subjects tend to be focus.
  - Also: evidence from **L1 French – L2 Eng** (unpublished results yet).
- In short: **syntactic (not pragmatic) deficit in L2.**

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# Thank you!!!



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## Corpora used in the study

- **ICLE:** *International Corpus of Learner English*

Granger S., E. Dagneaux and F. Meunier (2002) *The International Corpus of Learner English. Handbook and CD-ROM*. Louvain-la-Neuve: Presses Universitaires de Louvain

- **LOCNESS:** *Louvain Corpus of native English Essays*, UCL/CECL, Louvain-la Neuve

<http://www.fltr.ucl.ac.be/fltr/germ/etan/cecl/Cecl-Projects/Icle/locness1.htm>

- **WriCLE:** *Written Corpus of Learner English*; Universidad Autónoma de Madrid (Rollinson, O'Donnell, Mendikoetxea, in progress)

<http://www.uam.es/woslac>