

# Focus interpretation and the syntax-prosody filter in Spanish

Steffen Heidinger (University Graz)

## 1 Introduction

### Two perspectives on the relation between sentence form and focus interpretation

1. How does focus shape sentence form in Spanish?
2. To what extent does sentence form signal focus in Spanish?
  - Sentence form: constituent order (syntax) + position of nuclear stress (prosody)
  - Focus interpretation: focus-background partition of a sentence (intended by the speaker and assigned by the hearer)

### How does focus shape sentence form in Spanish?

(cf. among others Zubizarreta 1998, 1999, and recent experimental studies by Gabriel 2010, Hoot 2016, Heidinger 2014, Muntendam 2013, Vanrell & Fernández Soriano 2013, Jiménez-Fernández 2015).

- Constituent order: deviations from unmarked order
    - Fronting
- (1) *[Manzanas]<sub>F</sub> compró Pedro (y no peras).*  
apples bought Pedro and not pears  
'Pedro bought apples and not pears'  
(Zubizarreta 1999: 4239)
- *p-movement* to final position
- (2) (Who arrived late?)  
*Llegó tarde [Pepín]<sub>F</sub>*  
arrived late Pepín  
'Pepín arrived late'  
(Bosque & Gutiérrez-Rexach 2009: 681)

- Clefts

(3) (Who's speaking?)

*Quien habla es [Juan]<sub>F</sub>.*

who speaks is Juan

'It's Juan who speaks'

(Moreno Cabrera 1999: 4296)

- Prosody

- Focused constituents carry the nuclear stress

- If a phrase P is chosen as the focus of a sentence S, the highest stress in S will be within P. (Truckenbrodt 1995: 152; based on Jackendoff 1972)
- STRESSFOC: [XP]<sub>F</sub> bears nuclear stress. (Gabriel 2010: 203)

(4) (Who arrived late?)

*#Llegó **tarde** [Pepín]<sub>F</sub>*

arrived late Pepín

'Pepín arrived late'

(Bosque & Gutiérrez-Rexach 2009: 681)

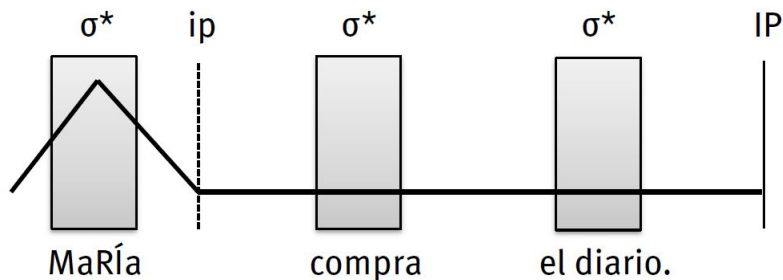
- Postfocal material is often prosodically compressed

(5) (Who buys the newspaper?)

*[**María**]<sub>F</sub> compra el diario.*

María buys the newspaper

'María buys the newspaper'



(Pešková 2015: 80)

Figure 1: F<sub>0</sub>-contour with prefinal focus

## To what extent does sentence form signal focus in Spanish?

- Lack of systematic studies on the predictive power of sentence form w.r.t focus-background partition
- Occasional hints that a certain structure unambiguously associates with a certain focus-background partition; Zubizarreta (1999) notes that (6) is limited to narrow subject focus

(6) (Who ate the mouse?)

*Se comió un ratón [el gato]<sub>F</sub>*

REFL ate a mouse the cat

'It was the cat who ate a mouse'

## Goals of talk

- Perspective: Sentence form → focus interpretation
- Two research questions (RQ) and two claims
  - RQ1: To what extent does sentence form (here: Constituent order + position of nuclear stress) unambiguously mark the focus-background partition of a sentence?
  - Claim 1: Sentence form does not mark the focus-background partition in Spanish, since sentence forms are often ambiguous and bad predictors of focus-background partition (empirical claim based on experimental data).
  - RQ2: What is the contribution of syntax and prosody to focus interpretation, if they do not mark the focus-background partition?
  - Claim 2: Sentence form serves indeed as a filter reducing the number of possible focus-background partitions, but contextual cues are often necessary for the definitive focus interpretation.

## 2 Sentence form does not mark the focus-background partition

→ Details on Claim 1: Sentence form does not mark the focus-background partition in Spanish, since sentence forms are often ambiguous and bad predictors of focus-background partition.

### 2.1 Data source and method

- Production experiment with 36 participants (all monolingual native speakers of peninsular Spanish)
- Which sentence forms are produced in different contexts?
  - Task of participants: Answer questions about a visual stimulus
  - Questions control the focus-background partition of answer

- Types of questions
    - ◊ Sentence focus
    - ◊ Narrow information focus on postverbal constituents (direct object, locative adjunct or depictive secondary predicate)
- (7) How is Juanita working in the garden?
- She is working [**soaked**]<sub>F</sub> in the garden.
  - Juanita is working in the garden [**soaked**]<sub>F</sub>.
  - ...



Figure 2: Visual stimulus (example)

- Analysis of the produced sentence forms w.r.t. their frequency and their predictive power for focus interpretation

## 2.2 Results

- Sentence forms (syntactic-prosodic configurations of constituent order and position of nuclear accent)
- (8) (a) DEP & dO: S-V-**DEP**-dO, DEP-**dO**, dO-**DEP**, **dO**-DEP  
 (b) DEP & LOC: S-V-**DEP**-LOC, DEP-**LOC**, LOC-**DEP**, **LOC**-DEP
- Focus-background partitions: [sentence]<sub>F</sub>, [DEP]<sub>F</sub>, [dO]<sub>F</sub>, [LOC]<sub>F</sub>
  - Nuclear accent imposes two restrictions
    - STRESSFOCUS: nuclear accent needs to be within the focus (# ...-**X**-[Y]<sub>F</sub>)
    - Focus can only expand to the left from the nuclear accent (# [...-**X**-Y]<sub>F</sub>)
- (9) *Juan bailó en su **casa** disfrazado.*  
 Juan danced in his house disguised  
 'Juan danced disguised in his house.'
- (a) Juan bailó [en su **casa**]<sub>F</sub> disfrazado.  
 (b) #Juan bailó en su **casa** [disfrazado]<sub>F</sub>.  
 (c) # [Juan bailó en su **casa** disfrazado]<sub>F</sub>.

## DEP & dO

(10) (a) **DEP-dO**

*Juanita pinta **descalza** el armario.*  
 Juanita paints barefoot the wardrobe  
 'Juanita paints barefoot the wardrobe.'

(b) **DEP-dO**

Juanita pinta descalza el **armario**.

(c) **dO-DEP**

Juanita pinta el **armario** descalza.

(d) **dO-DEP**

Juanita pinta el armario **descalza**.

- Combinations of sentence forms and focus interpretations
  - Several sentence forms appear with more than one focus-background partition
  - Several sentence forms are ambiguous w.r.t. focus interpretation
  - Varying predictive power of sentence forms: **DEP-dO**|**dO-DEP** > **DEP-dO** > **dO-DEP**

	<b>DEP-dO</b>	<b>DEP-dO</b>	<b>dO-DEP</b>	<b>dO-DEP</b>
[sentence] <sub>F</sub>	0,00	19,30	0,00	49,19
[DEP] <sub>F</sub>	100,00	0,00	0,00	50,81
[dO] <sub>F</sub>	0,00	80,70	100,00	0,00
	100,00	100,00	100,00	100,00

Table 1: Predictive power of syntactic-prosodic configurations (DEP & dO)

## DEP & LOC

(11) (a) **DEP-LOC**

*Juan bailó **disfrazado** en su casa.*  
 Juan danced disguised in his house  
 'Juan danced disguised in his house.'

(b) **DEP-LOC**

Juan bailó disfrazado en su **casa**.

(c) **LOC-DEP**

Juan bailó en su **casa** disfrazado.

(d) **LOC-DEP**

Juan bailó en su casa **disfrazado**.

- Combinations of sentence forms and focus interpretations
  - Several sentence forms appear with more than one focus-background partition
  - Several sentence forms are ambiguous w.r.t. focus interpretation
  - Varying predictive power of sentence forms: **DEP-LOC**|**LOC-DEP** > **LOC-DEP** > **DEP-LOC**

	<b>DEP-LOC</b>	<b>DEP-LOC</b>	<b>LOC-DEP</b>	<b>LOC-DEP</b>
[sentence] <sub>F</sub>	0,00	43,12	0,00	36,67
[DEP] <sub>F</sub>	100,00	0,00	0,00	63,33
[LOC] <sub>F</sub>	0,00	56,88	100,00	0,00
	100,00	100,00	100,00	100,00

Table 2: Predictive power of syntactic-prosodic configurations (DEP & LOC)

## Overview

- Table 8 shows for each sentence form the max. predictive power
- Predictive power of sentence forms is higher than for constituent orders alone, but some sentence forms still have rather low predictive power

	Predictive power
<b>DEP-dO</b>	100,00
<b>dO-DEP</b>	100,00
<b>DEP-LOC</b>	100,00
<b>LOC-DEP</b>	100,00
DEP-dO	80,70
LOC- <b>DEP</b>	63,33
DEP- <b>LOC</b>	56,88
dO- <b>DEP</b>	50,81
average	81,47

Table 3: Overview

- Unambiguous sentence forms are less frequent than ambiguous ones (cf. Heidinger 2014; appendix); preference to put nuclear accent in final position

### 3 Sentence form as a filter

→ Details on Claim 2: Sentence form serves indeed as a filter reducing the number of possible focus-background partitions, but contextual cues are often necessary for the definitive focus interpretation.

#### 3.1 Focus marking vs. focus filter

- Sentence forms are often ambiguous with respect to focus interpretation (cf. Dufter & Gabriel (2016: 422), Zimmermann & Onea (2011: 1658))<sup>1</sup>

(12) V-dO-**DEP**: [sentence]<sub>F</sub>, [VP]<sub>F</sub>, [DEP]<sub>F</sub>

*Juanita pinta el armario **descalza**.*  
Juanita paints the wardrobe barefoot  
'Juanita paints the wardrobe barefoot.'

- Sentence form is better described as a filter for focus interpretation than as a focus marking device (cf. Matić et al. 2014: 3)

(13) V-dO-**DEP**

*Juanita pinta el armario **descalza**.*  
Juanita paints the wardrobe barefoot  
'Juanita paints the wardrobe barefoot.'

– possible focus interpretations: [sentence]<sub>F</sub>, [VP]<sub>F</sub>, [DEP]<sub>F</sub>

– impossible focus interpretations: [dO]<sub>F</sub>, [V]<sub>F</sub>, [S]<sub>F</sub>, [S + dO]<sub>F</sub> etc.

- Despite its ambiguity, sentence form filters out certain focus interpretations
- *Information packaging* (Chafe 1976, Vallduví 1990, Vallduví & Engdahl 1996) also in cases where sentence form does not unambiguously signal the focus-background partition; exclusion of certain focus-background partitions facilitates the identification of actual/intended focus interpretation
- *Unalternative semantics* (Büiring 2015): special attention is paid to the focus interpretations that are not available

#### 3.2 Ambiguity is not a problem

- Lack of unambiguous focus marking is not surprising, but rather expected
  - Given the large number of possible focus-background partitions the creation of unambiguous sentence forms would be costly
  - Given that context is informative about focus-background partition the creation of unambiguous sentence forms would be partly redundant
- Ambiguity is a general feature of natural language (cf. Wasow 2015) and has advantages

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<sup>1</sup>Ambiguity is not limited to Spanish: large body of research on focus projection (cf. Höhle 1982, Selkirk 1984, Büiring 2006, 2015)

[...] first, where context is informative about meaning, unambiguous language is partly redundant with the context and therefore inefficient; and second, ambiguity allows the re-use of words and sounds which are more easily produced or understood. (Piantadosi et al. 2012: 281)

The essential asymmetry is: inference is cheap, articulation expensive, and thus the design requirements are for a system that maximizes inference. (Levinson 2000: 29)

- Depending on how many focus-background partitions survive the syntax-prosody filter, contextual cues are more or less important for the definitive focus interpretation of a sentence (cf. (14) vs. (15))

(14) V-dO-**DEP**

*Juanita pinta el armario **descalza**.*

Juanita paints the wardrobe barefoot

'Juanita paints the wardrobe barefoot.'

- Possible focus interpretations based on sentence form: [sentence]<sub>F</sub>, [VP]<sub>F</sub>, [DEP]<sub>F</sub>
- Impossible focus interpretations based on sentence form: [dO]<sub>F</sub>, [V]<sub>F</sub>, [S]<sub>F</sub>, [S + dO]<sub>F</sub> etc.
- Context "How does Juanita paint the wardrobe?" eliminates all but one of the possible focus interpretations: [~~sentence~~]<sub>F</sub>, [~~VP~~]<sub>F</sub>, [DEP]<sub>F</sub>

(15) V-**DEP**-dO

*Juanita pinta **descalza** el armario.*

Juanita paints barefoot the wardrobe

'Juanita paints barefoot the wardrobe.'

- Possible focus interpretations based on sentence form: [DEP]<sub>F</sub>
- Impossible focus interpretations based on sentence form: [sentence]<sub>F</sub>, [VP]<sub>F</sub>, [dO]<sub>F</sub>, [V]<sub>F</sub>, [S]<sub>F</sub>, [S + dO]<sub>F</sub> etc.
- Context "How does Juanita paint the wardrobe?" does not eliminate any of the possible focus interpretations: [DEP]<sub>F</sub>
- Contextual cues (such as an overt *wh*-question) are more important in cases where several focus-background partitions survive the syntax-prosody filter than in cases where only one survives
- Open questions
  - Do choices in sentence form vary depending on the contextual cues (overt *wh*-question vs. givenness of constituents in preceding context)?
  - Are unambiguous sentence forms chosen more often when the context does not provide a clear indication of the intended focus interpretation?



## 4 Summary and conclusions

- Perspective *sentence form*  $\rightarrow$  *focus interpretation*
  - Sentence forms (constituent order + position of nuclear accent) are often ambiguous w.r.t. focus interpretations
  - Sentence form does not mark the focus-background partitions
  - Sentence form serves as a filter reducing the number of possible focus-background partitions; sentence form facilitates the identification of the intended focus interpretation
- Due to the ambiguity of sentence forms contextual cues are often necessary for the definitive focus interpretation

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## Appendix

- Data on postverbal constituent order: Unambiguous sentence forms are not preferred over ambiguous ones

	<b>DEP-LOC</b>	<b>LOC-DEP</b>	
frequency in case of [DEP] <sub>F</sub>	44,93%	55,07%	100% (N = 69)
predictive power for [DEP] <sub>F</sub>	100,00	63,33	

Table 4: Frequency and predictive power (**DEP** & LOC)

- (16) (a) Juan bailó [**disfrazado**]<sub>F</sub> en su casa. 44,93%  
 (b) Juan bailó en su casa [**disfrazado**]<sub>F</sub>. 55,07%

	<b>DEP-LOC</b>	<b>LOC-DEP</b>	
frequency in case of [LOC] <sub>F</sub>	92,54%	7,46%	100% (N = 67)
predictive power for [LOC] <sub>F</sub>	56,88	100,00	

Table 5: Frequency and predictive power (**LOC** & DEP)

	<b>DEP-dO</b>	<b>dO-DEP</b>	
frequency in case of [DEP] <sub>F</sub>	8,70%	91,30%	100% (N = 69)
predictive power for [DEP] <sub>F</sub>	100,00	50,81	

Table 6: Frequency and predictive power (**DEP** & dO)

	<b>DEP-dO</b>	<b>dO-DEP</b>	
frequency in case of [dO] <sub>F</sub>	63,89%	36,11%	100% (N = 72)
predictive power for [dO] <sub>F</sub>	80,70	100,00	

Table 7: Frequency and predictive power (**dO** & DEP)

- Interpretation
  - Position of narrow focus: final > prefinal
  - Variation in constituent order does not serve focus marking
  - Nuclear accent should be in final position (Zubizarreta's (1998) *p(rosodic)-movement* is a better term than *focus movement*)