

## Determining Obligatory Inversion in Spanish WH-Extraction

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In Spanish, the subject of a sentence may precede the verb ('SV') or follow it ('VS') (*Dale bebió café*, 'Dale drank coffee', or *Bebió café Dale*). However, sentences with filler-gap dependencies are judged unacceptable with SV order (*¿Qué bebió \_\_ Dale?*, 'What drank Dale?', not \**¿Qué Dale bebió?*). This is traditionally described as a grammatical constraint on *wh*-movement (Torrego 1984; Gallego 2006). Goodall (2008) argues that unacceptability follows from constraints on memory encoding: in a *wh*-dependency, SV word order is harder to process; the subject intervenes in the filler-gap dependency, increasing working memory demands (e.g., Kluender 1998). The effect is weaker for adjunct *wh*-phrases (*¿Por qué Dale bebió el café?*, 'Why Dale drink the coffee?'). While traditional accounts characterize this as an argument/adjunct asymmetry (e.g. Torrego 1984), Goodall (2008) suggests that argument WH phrases are more similar in type to the subject than adjuncts, leading to greater processing difficulty when the subject intervenes in an argument filler-gap dependency. To test the respective contributions of grammatical and processing factors in inversion phenomena, we conducted two acceptability judgment studies isolating SV order's effect on judgments of argument (Arg) and adjunct (Adj) *wh*-phrases. We show that argument-WH phrases incur a greater penalty for failing to invert, but manipulating the Arg/Adj status of a WH phrase does not correspond to a change in its inversion penalty. This suggests grammatical argument or adjunct status, alone, cannot account for the asymmetry in required vs. optional inversion.

**Experiment 1** was an acceptability judgment task intended to confirm the argument/adjunct asymmetry for sentences with *wh*-dependencies. Spanish-speaking participants ( $N = 40$ ) rated sentences on a scale from 1 (unacceptable) to 7 (acceptable). We manipulated *wh*-type (Arg/Adj) and word order (SV/VS). There was an interaction effect of word order and *wh*-type, lowering judgments for argument, SV *wh*-phrases ( $\beta = -.567$ ,  $SE = .2$ ,  $t(803.2) = -2.89$ ,  $p < .01$ ). This confirms that sentences with argument *wh*-dependencies are more acceptable with VS word order than SV word order. We also found a main effect of argument *wh*-extraction ( $\beta = -.386$ ,  $SE = .14$ ,  $t(803.2) = -2.8$ ,  $p < .01$ ), which is unexpected on either the grammatical accounts or Goodall's account.

**Experiment 2** was an acceptability judgment task ( $N=32$ ) comparing the acceptability of *dónde* 'where' with canonical argument *wh*-phrase (*qué* 'what') and adjunct *wh*-phrase (*cuándo* 'when'). *Dónde* is ambiguous between argument and adjunct (e.g., *Where did he put the book?* vs. *Where did he read the book?*). If the grammar penalizes argument *wh*-phrases with SV word order, then SV order should deteriorate the acceptability of *dónde* as an argument significantly, but not influence *dónde* as an adjunct to the same degree. If interference by the subject determines acceptability, we predict the same degree of disruption for either *dónde* regardless of its grammatical function. We manipulated the factors *dónde* ( $\pm$ Donde), *wh*-type (Arg/Adj), and word order (SV/VS). Confirming Goodall's prediction, there was no significant difference in the effect of inversion between 'donde' as argument or adjunct ( $\beta = -2.15$ ,  $SE = .17$ ,  $t(725) = -12.81$ ,  $p < .001$ ). While Experiment 1 suggests that Spanish speakers' judgments of *wh* extraction are sensitive to an argument/adjunct distinction, Experiment 2 shows grammatical argument status cannot independently account for lower judgments of SV constructions.

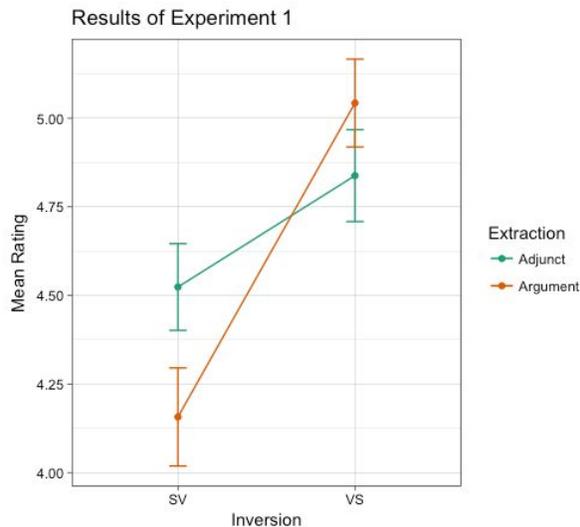
**Table 1.** Materials for Experiment 1.

	{Argument/Adjunct}	{VS/SV}
Su amigo se preguntó	{qué/cuándo}	{cosió Antia/Antia cosió}
<i>Her friend wondered</i>	{ <i>what/when</i> }	{ <i>sewed Antia/Antia sewed</i> }
'Her friend wondered what/ when Antia sewed.'		

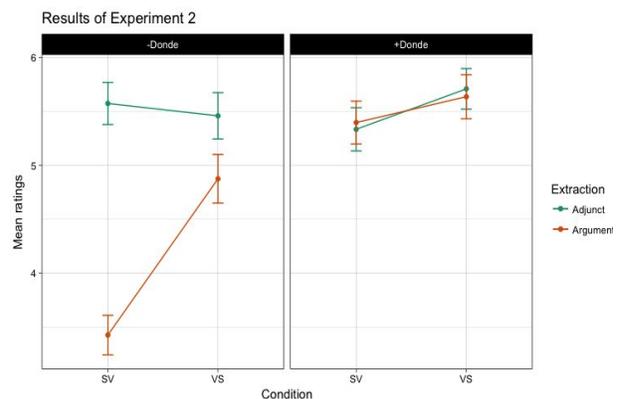
**Table 2.** Materials for Experiment 2

<b>-Dónde, +Arg</b>	<b>{VS/SV}</b>
El casero se preguntó qué	{puso en el mostrador Daniella/Daniella puso en el mostrador}
<i>The landlord wondered what</i>	{ <i>put on the counter Daniella/Daniella put on the counter</i> }
The landlord wondered what Daniella put on the Counter.	
<b>+Dónde, +Arg</b>	<b>{VS/SV}</b>
El casero se preguntó dónde	{puso las llaves Daniella/Daniella puso las llaves}
<i>The landlord wondered where</i>	{ <i>put the keys Daniella/Daniella put the keys</i> }
'The landlord wondered where Daniella put the keys.'	
<b>+/-Dónde, -Arg</b>	<b>{dónde/cuándo} {VS/SV}</b>
El casero se preguntó {dónde/cuándo}	{copió las llaves Daniella/Daniella copió las llaves}
<i>The landlord wondered {where/when}</i>	{ <i>copied the keys Daniella/Daniella copied the keys</i> }
'The landlord wondered where/when Daniella copied the keys.'	

**Figure 1:** Results of Experiment 1



**Figure 2:** Results of Experiment 2



References: • Gallego, A. 2006. In *Selected Proceedings of the 9th Hispanic Linguistics Symposium*: 43-55. • Torrego, E. 1984. *Linguistic Inquiry* 15:103-129. • Kluender, R. 1998. In *Syntax and semantics 29: The limits of syntax* (pp. 241-279). • Goodall, G. 2008. *Proceedings of the 41st Annual Meeting of the Chicago Linguistic Society*. 161-174.