DEPENDENCY TYPE MODULATES ISLAND EFFECTS: EVIDENCE FROM SPANISH

Sergio López-Sancio & Itziar Laka (University of the Basque Country UPV/EHU)
sergio.lopez-sancio@ehu.eus

Syntactic islands are known to show variability both across and within languages. Over the last decade, experimental syntax has developed tools to identify and isolate island effects under experimental conditions, i.e. a factorial definition of islands [1]. Previous studies have shown that islands behave differently depending on the type of dependency within the same language [2]. Specifically, it has been found that subjects in Italian are islands in *wh*-question formation (WH-dependencies), but not when extraction yields a relative clause (RC-dependencies). In this study, we tested whether *wh*-clauses, complex NPs, subjects and adjuncts are islands in Spanish. We also tested both WH-dependencies and RC-dependencies. We concluded that all four constructions are islands in Spanish and that the strength of the island effect is modulated by dependency type.

We followed the design in [2]. We tested four constructions (*wh*-clauses, complex NPs, subjects and adjuncts) in two types of dependencies (WH and RC), resulting in 8 conditions. We conducted four acceptability judgment tasks (AJT) (n=61, 61, 51, 49, respectively), testing two conditions in each of them. Participants were asked to rate sentences using a 7-point Likert scale. We used a factorial definition of islands crossing 'dependency length' (short/long) and 'type of structure' (non-island/island) (Table 1). When testing subjects, we crossed 'gap position' (object/subject) and 'structure' (simple/complex) (Table 2) [3]. This design captures how the two factors impact acceptability individually. Crucially, islands are signaled by a significant, super-additive interaction.

We ran linear-mixed effects models on normalized ratings (z-scores), including 'length' and 'type of structure' as fixed factors and by-participant and by-item random intercepts. For *wh*-clauses, complex NPs and adjuncts, results revealed a significant interaction between 'length' and 'type of structure' in both WH- and RC- dependencies (Fig. 1). Crucially, this interaction was weaker in RC-dependencies. This pattern was confirmed by differences-in-differences (DD) scores [4], showing that RC-dependencies induced an overall smaller effect (DD=1.14) than WH-dependencies (DD=1.59) (Table 3). For subjects, we found no super-additive interaction because the 'object' condition led to lower ratings than in previous studies in English using the same design [2,3]. We discuss that the unacceptability of extractions out of objects may be due to the fact that in Spanish the preposition is not left stranded unequivocally signaling the position of the gap, as in English.

We conclude that *wh*-clauses, complex NPs, subjects and adjuncts are islands in Spanish. Our results largely replicate the pattern found in Italian in a previous study [3]. However, we did not find different patterns across dependencies for subjects. We argue that this finding in Italian may be due to an ambiguity in the materials that may have led to higher ratings in the 'island' condition, leading to no differences between 'island' and 'non-island' conditions. The present work emphasizes the differences across dependency types, since we found that in RC-dependencies the strength of the island effect was systematically reduced. This effect is compatible with processing accounts of island effects that claim that fillers that encode more semantic information (an NP in RC-dependencies vs. a bare *wh*-word in WH-dependencies) are more easily recovered from memory at the gap, ameliorating island violations [5].

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Table 1. Sample of the materials used to test *wh*-clauses with WH-dependencies.

Sentence	Condition
¿Qué te preguntas [si Rocío vio __]? 'What do you wonder [whether Rocío saw __]?'	LONG, ISLAND
¿Qué piensas [que vio Rocío __]? 'What do you think [that Rocío saw __]?	LONG, NON-ISLAND
¿Quién __ se pregunta [si Rocío vio el mensaje]? 'Who __ wonders [whether Rocío saw the message]?'	SHORT, ISLAND
¿Quién __ piensa [que Rocío vio el mensaje]? 'Who __ thinks [that Rocío saw the message?]'	SHORT, NON-ISLAND

Table 2. Sample of the materials used to test subjects with WH-dependencies.

Sentence	Condition
¿De quién crees que [algunos compañeros __] han acusado al alcalde de Bilbao? 'Who do you think [some colleagues of __] have accused the mayor of Bilbao?'	SUBJECT, COMPLEX
¿Quién crees que ha acusado al alcalde? 'Who do you think __ has accused the mayor?'	SUBJECT, SIMPLE
¿De quién crees que el alcalde de Bilbao ha acusado [a varios compañeros __]? 'Who do you think the mayor of Bilbao has accused [some collegues of __]?'	OBJECT, COMPLEX
¿A quién crees que el alcalde ha acusado __? 'Who do you think the mayor has accused?'	OBJECT, SIMPLE

Table 3. Differences-in-differences (DD) scores for each construction tested.

	RC-dependencies	WH-dependencies
Wh-*clauses*	1.15	1.51
Complex NPs	1.11	1.55
Subjects	0.1	0.17
Adjuncts	1.17	1.72

Fig.1. Interaction plots for *wh*-clauses, complex NPs, subjects and adjuncts in both WH- and RC-dependencies.