

Comprehension meets production: null/overt subject pronouns in Italian and Spanish

Carla Contemori (University of Texas at El Paso) & Elisa Di Domenico (Università per Stranieri di Perugia)

Although Italian and Spanish are two null-subject languages, they may present distinct discourse-pragmatic biases on the interpretation of anaphoric subject pronouns. The Position of Antecedent Hypothesis (PAH, Carminati, 2002) proposed that null pronouns are interpreted towards antecedents in a prominent syntactic position, while overt pronouns prefer antecedents in lower positions. In Spanish, it is not clear if the PAH can explain null and explicit pronoun interpretation preferences, as the existing evidence is mixed (e.g., Filiaci et al., 2014; Chamorro, 2018). For example, previous comparative research has shown differences in the interpretation of explicit pronouns in Italian and Spanish. However, it is unclear from the existing corpus studies whether differences in the interpretation of anaphora in the two languages may be linked to production patterns. The present study aims at contributing to fill this gap and tests the validity of the PAH in Italian and Spanish by comparing for the first time the two languages on comprehension (Experiment 1) and production (Experiment 2 and 3).

In Experiment 1, we compare the interpretation of overt and null pronouns in Italian and Mexican Spanish, by using an offline sentence comprehension task. We manipulate the type of pronouns (Null vs. Explicit) and the position of the pronoun (anaphoric vs. cataphoric). Thirty-three speakers of Italian and thirty-three speakers of Mexican Spanish interpreted sentences in which null and explicit pronouns are potentially ambiguous (Table 1). Participants answered a three-choice comprehension question, where the possible answers are the subject antecedent (George), the object antecedent (Lewis) and an external referent (someone else). A Logistic Mixed-effects Regression Modeling analysis revealed a clear division of labor between null and overt pronouns in both languages, as demonstrated by the Language Group*Type of Pronoun interactions that emerged in the null pronoun and explicit pronoun analyses (all $p < .0001$). This result suggests that the PAH can explain anaphora resolution biases both in Italian and the variety of Mexican Spanish tested here. In addition, the analysis revealed that: (i) Italian speakers chose the subject interpretation significantly more often for null pronouns than Spanish speakers ($p < .0004$), (ii) Italian speakers chose the object interpretations for explicit pronouns significantly more often than Spanish speakers ($p < .0001$).

With two production tasks, we measured referential choice in controlled discourse contexts, linking the production pattern to the differences observed in comprehension.

In Experiment 2, we adapted a picture-description task used by Arnold & Griffin (2007) to Spanish and Italian. We measured reference to a preceding subject referent when the number and gender of the referents in the pictures was manipulated (Table 2). The results indicated that Spanish speakers produced significantly fewer null subject pronouns and more overt pronouns than the Italian group to refer to subject antecedents, as indicated by main effects of Language (all $p < .01$; no Language*Condition interaction). In Experiment 3, we analyze production biases in Italian and Spanish further, including a comparison of references to subject/object antecedents in contexts of intra-sentential anaphora, using a sentence completion task with implicit causality verbs (Table 3). The results show that Italian-speaking participants produced more null pronouns than Spanish speakers, to refer to subject antecedents (as in Experiment 2) and object antecedents (main effects of Language, all $p < .01$). An object antecedent, thus, appears as a suitable antecedent for a null pronoun in Italian if it is the 'expected' antecedent (Calabrese, 1986) due to the verb implicit causality. Altogether, our study shows micro-variation in Italian and Spanish, with Spanish following the PAH but to a lesser degree than Italian. More specifically, in Spanish the weaker object bias for overt pronouns parallels with a higher use of overt pronouns (and with fewer null pronouns) in contexts of topic maintenance in production. The present study suggests that subtle differences in production patterns are in line with anaphora resolution patterns in comprehension in the two languages.

Table 1. Subject (he=George), object (he=Lewis) and external referent (he=someone else) interpretations in the four conditions of the comprehension study in Italian and Spanish.

	Italian (N=26)			Spanish (N=33)		
	Subject	Object	External	Subject	Object	External
Intra-sentential anaphora and cataphora						
Anaphora / Null pronoun (1) George saw Lewis when (he) was going to the coffee shop	0.73	0.19	0.05	0.62	0.36	0.015
Anaphora / Explicit Pronoun (2) George saw Lewis when he was going to the coffee shop	0.19	0.76	0.01	0.37	0.59	0.035
Cataphora / Null pronoun (3) When (he) was going to the coffee shop, George saw Lewis	0.86	0.06	0.07	0.64	0.06	0.28
Cataphora / Explicit Pronoun (4) When he was going to the coffee shop, George saw Lewis	0.39	0.38	0.19	0.46	0.11	0.41

Table 2. Proportion of null pronouns, explicit pronouns and full NPs (intra-sentential and inter-sentential) produced by Italian and Spanish speakers in the conditions with one or two referents, with similar or different gender.

	Italian (N=32)			Spanish (N=26)		
	Null Pronoun =(he) was tired	Explicit Pronoun =he was tired	NP=Mickey was tired	Null Pronoun =(he) was tired	Explicit Pronoun =he was tired	NP=Mickey was tired
Context: Mickey went for a walk (with Daisy/Donald) in the hills...						
1 Referent	0.87	0.03	0.10	0.66	0.11	0.24
2 Ref - different gender	0.41	0.06	0.52	0.20	0.10	0.70
2 Ref - gender ambiguous	0.27	0.00	0.73	0.15	0.06	0.79

Table 3. Proportion of (intra-sentential) null/explicit pronouns and NPs produced by Italian (N=24) and Spanish (N=24) speakers in reference to a preceding subject and object referent.

	Null Pronoun	Explicit Pronoun	NP
Subject-reference (Mary scared John because....)			
Italian	0.98	0.005	0.005
Spanish	0.93	0.06	0
Object-reference (Mary liked John because...)			
Italian	0.85	0.13	0.005
Spanish	0.74	0.25	0.003