A sociolinguistic view on variable subjects in Italian Sign Language

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Topic. In spoken languages, pro-drop is usually associated to a cluster of grammatical properties such as rich agreement morphology, clitic doubling, possibility of post-verbal subject, and no that-trace effect [1]. However, if we consider sign languages, and more specifically Italian Sign Language (LIS), these properties are hardly predictive. This is so, because: 1) the presence of both agreeing and non-agreeing verbs exhibits the typical non-uniform paradigm; 2) doubling is a pervasive phenomenon in LIS [2], so *clitic* doubling may be due to independent reasons; 3) flexible word order is typical of sign languages, so the presence of postverbal subjects might not be crucial; 4) there is no clear instance of complementizers (at least in LIS [3]). Nonetheless, LIS subjects are often omitted.

    Thesis Statement. The paper presents a corpus study on subject omission in LIS. We expect both linguistic and sociolinguistic factors to regulate overt vs. null subjects.

    Approach & Methodology. Our quantitative approach is similar to that adopted in studies on other sign languages (ASL [5], Auslan and NZSL [6]). Data come from spontaneous narratives included in the LIS Corpus [4]. For each of the 163 signers of the corpus, we analyzed about 15 consecutive predicates (2654 tokens total). Of the 15 linguistic and 9 sociolinguistic potential predictors annotated, Table 1 reports those that turned out as significant in the step-up & step-down procedure.

    Results. We obtained a balanced distribution: 1404 non-overt subjects (52.90%) vs. 1250 overt subjects (47.10%). A mixed-model binomial analysis with Predicate and Signer as random effects was conducted [7]. Six predictors turned significant: four linguistic (*Clause-mate co-referent subjects*, *Clause type*, *Verb type*, and *Person*), and two sociolinguistic (*Age* and *Education*), see Table 1 and the graphs in Figure 1. No significant interaction between predictors was found. Significant predictors are not heavily collinear.

    Discussion. *Clause-mate co-referent subjects* indicates that null subjects are more likely to occur if they have already been mentioned within the same sentence. The fact that the predictor specifically designed to test topic did not turn significant suggests that subject omission is more grammar-driven than context-driven (pro-drop rather than topic-drop). As for *Clause Type*, null subjects are more likely to occur in non-matrix clauses, which is the syntactic environment involving control, raising, binding, and movement across-the-board. The effect of *Verb Type* has already been documented in other sign languages [6]: null subjects are more likely with agreeing than with non-agreeing verbs. While this is in line with the general trend that rich agreement correlates with pro-drop, it casts some doubts on the generalization that non-uniform paradigms should disallow pro-drop. This is so, because sign languages have an entire class of verbs without overt agreement markers (the class of plain verbs). One possible solution is to admit that morphological uniformity has to be valid within a single paradigm (i.e. plain verbs are uniformly non-agreeing, while the others are uniformly agreeing). The effect of *Person* shows that null subjects are more likely to refer to 2nd person. This seems to suggest that 2nd and 3rd person are morphologically identical (they are pointing sings) but syntactically different.

    As for the social predictors, the effect of *Education* shows that low-educated signers are more likely to use null subjects: this can be explained by the fact that they probably have lower metalinguistic competence and are unconsciously under the pressure of the dominant language (i.e. Italian). Finally, the effect of *Age* shows that older signers tend to omit subjects less often than younger signers. We argue that this is a diachronic change started around 1960s. The typical "S" shape of stabilized change will emerge when data from the next generations are included in this picture.

    Conclusions. Linguistic and sociolinguistic factors determine the distribution of null subjects in LIS. Our data indicate that subject omissions in LIS are not sensitive to topic. In contrast, the choice among overt and non-overt forms is determined by the grammatical architecture of the

language.

Table 1: Mixed-Effect Analysis. Model's goodness of fit values: AIC=3013, logLik=--1496. Random Effects = Participant & Item. No collinearity (inspection by Xtabs: no cell < 5%). No interactions.
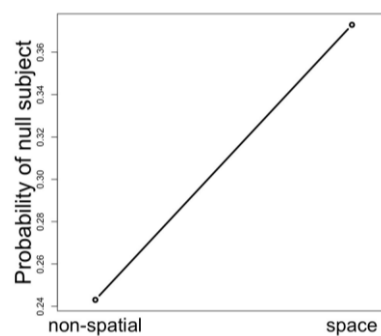
		Estimate	Std. Error	Pr(>|z|)	
Linguistic predictors	**Coreferent subject: Same subject**	0,688	0,115	2,38e-09	***
	Verb Type: Agreement & Spatial	0,616	0,110	2,05e-08	***
	Clause Type: Non-matrix clause	-0,781	0,110	1,04e-12	***
	Person: 2nd Person	-1,171	0,314	0,000193	***
Social predictors	**rcs(Age,3)Age**	0,020	0,012	0,098477	.
	rcs(Age,3)Age'	-0,013	0,012	0,279939	
	Education: Low	-0,516	0,179	0,003878	**

Figure 1: Probability of null subjects to occur according to the significant predictors.
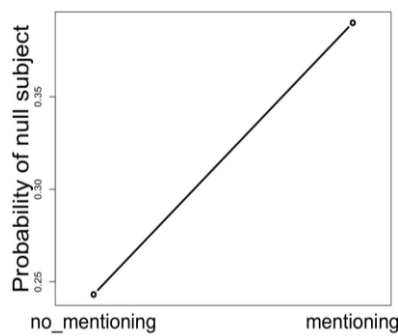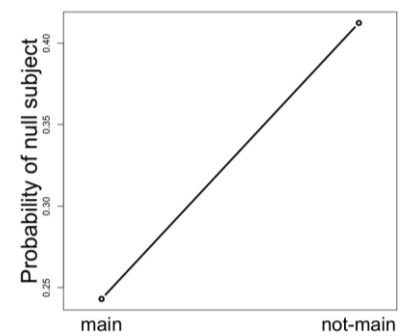
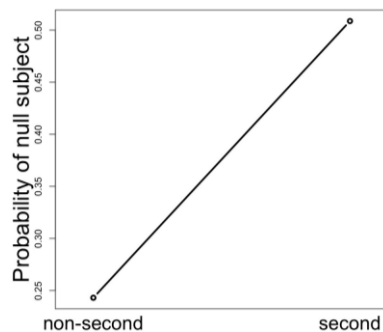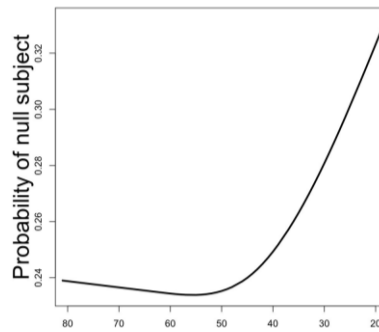a. Clause-mate co-referent   b. Verb type   c. Clause type
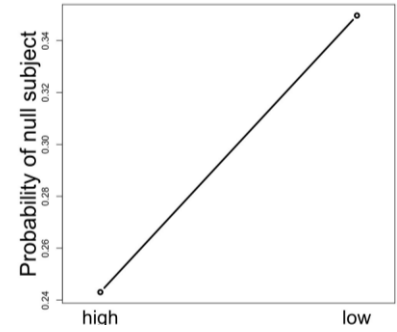

d. Person   e. Age   f. Education

References. [1] Jaeggli, Osvaldo & Kenneth J. Safir. 1989. The null subject parameter and parametric theory. The Null Subject Parameter, 1–44. **[2]** Branchini, Chiara, Anna Cardinaletti, Carlo Cecchetto, Caterina Donati & Carlo Geraci. 2013. Wh-duplication in Italian sign language (LIS). Sign Language & Linguistics 16(2). 157–188. doi:10.1075/sll.16.2.03bra. **[3]** Cecchetto, Carlo, Carlo Geraci & Sandro Zucchi. 2009. Another way to mark syntactic dependencies The case for right peripheral specifiers in sign languages. Language 85(2). 278–320. **[4]** Geraci, Carlo, Katia Battaglia, Anna Cardinaletti, Carlo Cecchetto, Caterina Donati, Serena Giudice & Emiliano Mereghetti. 2011. The LIS Corpus Project: A Discussion of Sociolinguistic Variation in the Lexicon. Sign Language Studies 11(4). 528–574. **[5]** Wulf, Alyssa, Dudis, Paul, Bayley, Robert, & Lucas, Ceil. (2002). Variable subject presence in ASL narratives. Sign Language Studies 3(1):54–76. **[6]** McKee, Rachel, Adam Schembri, David McKee & Trevor Johnston. 2011. Variable "subject" presence in Australian Sign Language and New Zealand Sign Language. Lang. Var. & Change 23(03). 375–398. **[7]** Baayen, Harald R. 2008. Analyzing Linguistic Data. Cambridge University Press.