The acquisition of disjunction under negation in Catalan

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Background. The Disjunction Parameter governs the interpretation of disjunction in simple negative sentences, as well as in several other downward entailing linguistic environments. On the 'plus' value of this lexical parameter, the logical concept OR is analysed as a Positive Polarity Item (PPI), so this value can be designated as +PPI. On the alternative 'minus' value, the logical concept OR is not analysed as a Positive Polarity Item, so it is marked –PPI. Research on the acquisition of the interpretation of negated disjunctive sentences (Pagliarini et al., 2018) found that children acquiring Italian start with OR having the 'minus' value of the Disjunction Parameter as predicted by the Semantic Subset Principle (SSP) (Crain et al., 1994), but reset it to the 'plus' value earlier than children acquiring Japanese, Mandarin or Turkish (Crain, 2012; Geçkin et al., 2016; Goro & Akiba, 2004; Goro, 2007). Earlier convergence was attributed to the negative concord status of Italian. Here, we extend the previous studies to another negative concord language – Catalan – with a further goal: to establish whether chronological age and level of language development predict when children reset their initial parameter value to the adult value in languages where the child and adult values differ.
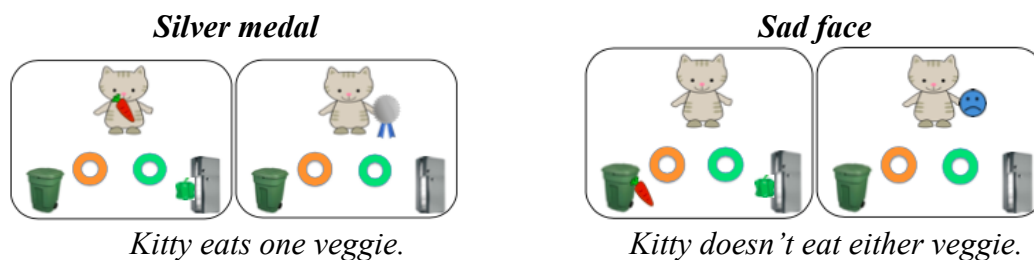
The present study. Thirty Catalan-speaking children (age range = 4;6 - 6;1; mean = 5;4) and 12 Catalan-speaking adults were tested using a TVJT modeled after Goro and Akiba (2004) as in previous studies. Test sentences like (1a) were presented in 2 conditions: the Silver Medal condition (where only one vegetable was eaten), the Sad Face condition (where no vegetable was eaten) (Figure 1), plus 4 fillers.

(1) a. El gat no s'ha menjat la pastanaga o el pebrot.   (Catalan)
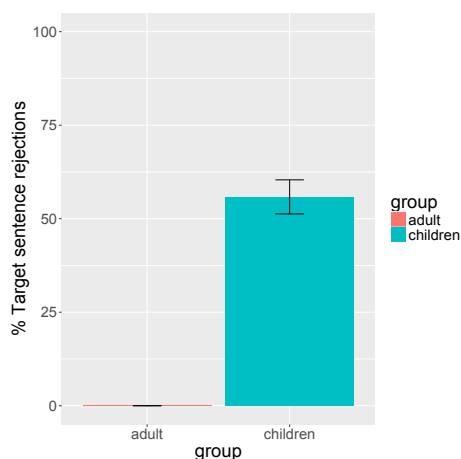   b. The cat did not eat the carrot or the pepper.   (English)

Responses to the Silver Medal condition were used to evaluate the interpretation assigned to OR: if participants rejected (1a), they were considered to assign OR the 'minus' value; if they accepted (1a), they were considered to assign the 'plus' value. Children were also tested using a sentence repetition task (SRT) (Gavarró, 2017).

Results. Mixed-model logistic regression analysis on the Silver responses (fixed effects: *group*; random effects: *items*, *subjects*) revealed a main effect of group: children were more likely than adults to reject the test sentences ($p < .001$) (Figure 2). Turning to the child data, children could be divided into two groups as in Italian: twelve behaved like adults, accepting sentences like (1a) when just one disjunct was false; fifteen behaved in accordance with the SSP and rejected sentences like (1a) when just one disjunct was false; three produced mixed responses. Children were then divided into 3 groups, according to their performance on the SRT: low-performance (60%-75% correct); middle-performance (76%-90% correct); high-performance (91%-100% correct) (Table 1). Mixed-model logistic regressions on the Silver responses (fixed effect: *age*, *performance in the SRT, interaction age-by-performance*; random effects: *items, subjects)* revealed that performance was the only significant predictor: no significant difference was found between children with low and medium performance in the SRT, though both groups were significantly more likely to reject the target sentences than children with high performance (both $p < .001$) (Figure 3).
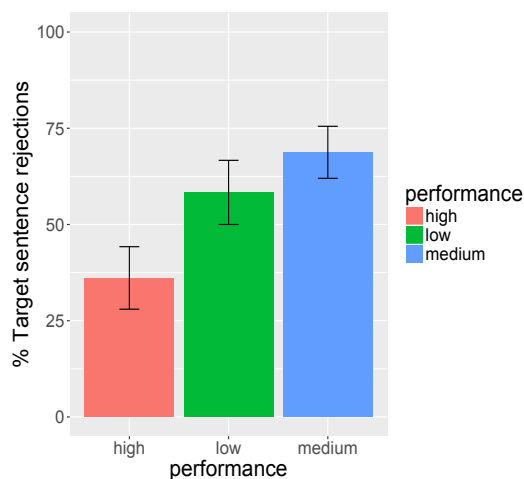
Conclusions. Our data on Catalan replicate the previous results on Italian: Catalan children converge on the adult value of the Disjunction Parameter earlier than in other languages. However, language maturity, rather than age, plays a critical role in parameter resetting, as it is a significant factor in predicting convergence to the adult grammar.

Silver medal

Kitty eats one veggie.

Sad face

Kitty doesn't eat either veggie.

Figure 1. Samples of the Silver medal condition (left) and the Sad face condition (right).

Figure 2. Percentages of rejections by group in the Silver Medal condition.

Figure 3. Percentage of rejections in the Silver medal condition by performance in the SRT (only child data).

	LOW PERFOMANCE	MEDIUM PERFORMANCE	HIGH PERFORMANCE
Nr. of children	9	12	9

Table 1. Children categorization in accordance to their score in the SRT

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