

The acquisition of negative disjunctive sentences in Catalan: an investigation of the role of age and of language development

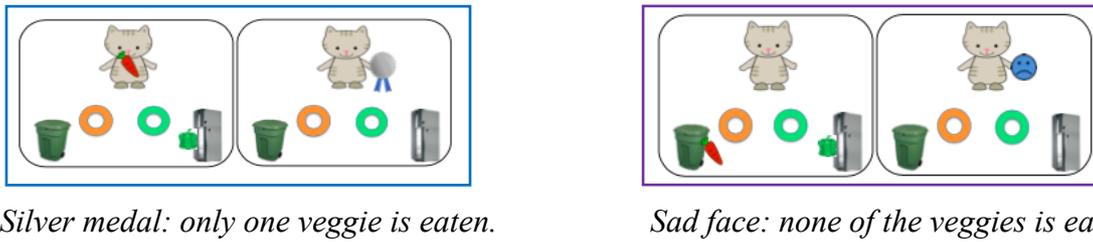
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Background. In English, a sentence like ‘The cat didn’t eat the carrot or the pepper’ typically receives a ‘neither’ interpretation (NEG>OR); in Japanese it receives a ‘just one’ interpretation (OR>NEG). This cross-linguistic variation in scope assignment has been attributed to a lexical parameter called the Disjunction Parameter (Crain, 2012; Goro, 2004; see also Szabolcsi, 2002), according to which OR can be designated as +PPI or as –PPI. As for language acquisition, Crain et al. (1994) argued that all language learners, regardless of the language acquired, start by assigning the ‘neither’ interpretation to negative disjunctive sentences for learnability reasons (the Semantic Subset Principle (SSP) of Crain, 2012; Goro, 2007; Goro & Akiba, 2004). **Our study.** We investigated adult and child interpretation to negative disjunctive sentences in Catalan (1a). We first aimed to establish whether OR takes the ‘plus’ or the ‘minus’ value in Catalan. Second, we investigated the value assumed by children. Finally, we aimed to establish whether chronological age and level of language development predict parameter resetting in languages where the child and adult values differ. Thirty Catalan-speaking children (age range = 4;6 - 6;1; mean = 5;4) and 12 Catalan-speaking adults were tested using a TVJT modelled after Goro and Akiba (2004). 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) as a measure of language development. **Results.** Mixed-model logistic regression on the Silver responses revealed a main effect of group: children were more likely than adults to reject the test sentences ($p < .001$) (see Figure 2; it also reports the results of the Sad face condition). However, a closer look at the child data revealed a bimodal distribution: twelve children accepted sentences like (1a) when just one disjunct was false, as adults did; fourteen rejected sentences like (1a) when just one disjunct was false, in line with the SSP; two produced mixed responses (Figure 3). Thereafter, we examined whether level of language development significantly contributes to the resetting of the Disjunction Parameter. In order to determine it, children were divided into three language levels (low, $N=11$; medium, $N=9$; high, $N=8$) by using the quantile distribution of the SRT task to determine the cut-off values for the levels. Mixed model logistic regressions on the Silver responses (fixed effect: age, language level, interaction age-by-level; random effects: items, subjects), revealed that level of language development 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 4). **Discussion.** Our study first established that adults prefer to assign a “just one” interpretation to negative sentences with disjunction in Catalan, which corresponds to the ‘plus’ value of the Disjunction Parameter. Furthermore, our results showed that several Catalan-speaking children differed from adults, rejecting negative sentences with disjunction in the Silver Medal condition, where adults accepted them, in line with SSP. Finally, we found that language maturity, rather than age,

plays a critical role in parameter resetting, as it is a significant factor in predicting convergence on the adult grammar.



Silver medal: only one veggie is eaten.

Sad face: none of the veggies is eaten.

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

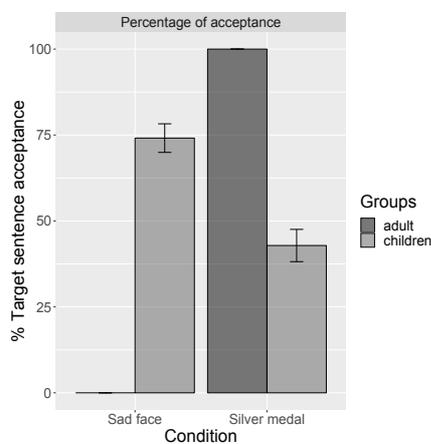


Figure 2. Percentages of acceptance by condition for the two groups in the Silver Medal and Sad face condition. Vertical bars represent standard error.

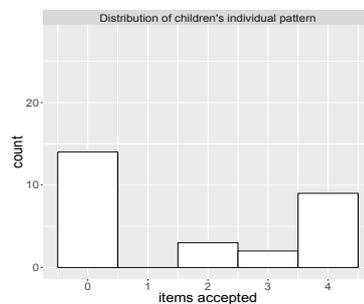


Figure 3. Distribution of children's individual pattern of response in the Silver medal condition.

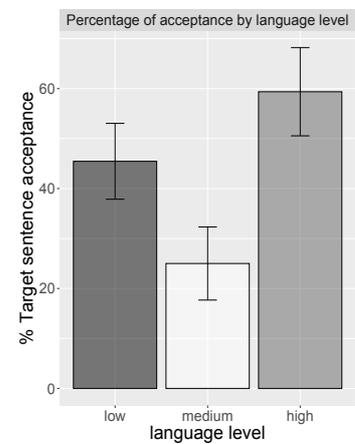


Figure 4. Percentage of acceptance of the Silver medal condition items by level of language development. Vertical bars represent standard error.

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