

The role of language specific properties in the acquisition of recursion

Anca Sevcenco & Larisa Avram
(University of Bucharest, Romania)

1. Introduction. Recursion is a central property of human language that has been assumed to account for linguistic discrete infinity (Hauser, Chomsky & Fitch 2002). However, recent studies show that the acquisition of recursive structures by TD children does not proceed uniformly. Pérez-Leroux et al. (2012) suggest that recursive genitive phrases pose more difficulty to pre-school children than recursive PP modification does. They put this difference down to language specific requirements inherent to labeling and selection. (Sevcenco, Roeper, Pearson/SRP 2015) provide experimental data from English which show that acquisition of recursion in the clausal domain (relative clauses, RC) has a head start over recursion with locative PPs. Possible causes for these asymmetries were hypothesized: the nature of the functional category (Di Sciullo 2015) associated with recursion (overt vs. covert) or the difference between clausal vs. non-clausal domain. The data from English, however, cannot straightforwardly discriminate between the two, given the fact that RCs do not only have an overt marker of recursion but are also larger domains than the structures with modifying PPs. **2. Aim.** We investigate the part played by functional categories associated with recursion in the acquisition of recursive adnominal locative PPs and RCs. We use experimental data from Romanian, a language in which both PP and RC recursion come with overt functional marking: the functional preposition *de* ‘of’ (Giurgea 2015) and *care* ‘that/who’, respectively. Definiteness also plays a disambiguating role. When the modified DP is definite, the only possible interpretation is the recursive one (see 1). With indefinites, though the recursive reading is present, a coordination interpretation is not excluded (2). **3. Participants & Method.** 29 TD children (mean age: 5;3, stdv: .57) and 10 adults took part in the study. They had to solve an act out task that involved putting animals in an array on an iPad after they heard a prompt (7). The task, an adaptation of the one in SRT (2015), had a 2x2 design with modifier type and determiner type as within subject variables (3-6). **4. Results & Discussion.** The number of recursive answers overall is very low (40.3%) but it is still higher than the one reported for 5-year-old English children (25.44%) in a similar task (SRP 2015). The difference between answers with recursive vs. coordinated structures does not reach significance ($p=0.65$). It follows that 5-year olds do not have an adult-like interpretation of recursive PPs and RCs. No significant difference exists between recursive answers with RCs vs. PPs ($p=0.32$). In this, our results differ from the ones for English, where 5-year olds gave a higher number of recursive answers with RC. Definiteness does not play a significant part. There was no difference between recursive answers with definite vs. indefinite nominals ($F(3,84) = .13, p > .05$). Our results bring evidence in favor of the hypothesis that the presence of an overt functional head associated with recursion makes a difference in acquisition. Even though recursion in the phrasal/clausal modification domains is not fully mastered at age 5, the Romanian data indicate that the functional preposition *de* and the relativizer *care* offer reliable cues that lead children to piece together recursive arrays. To better highlight this, consider English, which overtly marks recursion in the clausal domain, but not in the PP domain where, arguably, a covert marker is present. The English data (SRP 2015) show a lower number of recursive answers overall and a head start of RC recursion over PP recursion. We attribute this to the parametric difference in the overt vs. covert realization of functional heads associated with recursion. Returning to Romanian, one notices an asymmetry. Our results show that at age 5 children can identify *de* ‘of’ and *care* ‘that/who’ but not definiteness as a cue to recursion, suggesting that children do not

make full use of all the language specific triggers that identify a structure as recursive from the beginning.

- | | | | | | | |
|---|------------|------------|-----------------|--------------|--------|-----------------------|
| 1. o casă | de | lângă | pădurea | de lângă | lac | |
| a house | de | next.to | forest.the | de next.to | lake | |
| ‘a house next to the forest next to the lake’ | | | | | | Recursive |
| 2. o casă | de | lângă | o pădure | de lângă | un lac | |
| a house | de | next.to | a forest | de next.to | a lake | |
| ‘a house next to a forest next to a lake’ | | | | | | Recursive/Coordinated |
| 3. un pui | de lângă | un cal | de lângă | un porc | | |
| a chicken | de next.to | a horse | de next.to | a pig | | |
| ‘a chicken next to a horse next to a pig’ | | | | | | 2PP indefinite |
| 4. pisica | de lângă | calul | de lângă | pui | | |
| cat.the | de next.to | horse.the | de next.to | chicken | | |
| ‘the cat next to the horse next to the chicken’ | | | | | | 2PP definite |
| 5. un cal | care este | pe un porc | care este | pe un pui | | |
| a horse | which is | on a pig | which is | on a chicken | | |
| ‘a horse that is on a pig that is on a chicken’ | | | | | | 2RC indefinite |
| 6. câinele | care este | pe porcul | care este | pe pui | | |
| dog.the | which is | on pig.the | which is | on chicken | | |
| ‘the dog that is on the pig that is on the chicken’ | | | | | | 2RC definite |

7. Prompt: show me on this iPad a chicken next to a horse next to a pig

References

- Di Sciullo, A.M. 2015. On the domain specificity of the human language faculty and the effects of computational efficiency: contrasting language and mathematics. *Revista Linguística / Revista do Programa de Pós-Graduação em Linguística da Universidade Federal do Rio de Janeiro*. Volume 11, número 1, junho de 2015, p. 28-56.
- Hauser, M., Chomsky, N., Fitch, T. 2002. The faculty of language: what is it, who has it and how did it evolve? *Science* 298: 1569-1579.
- Giurgea, I. 2015. Romanian adnominal locative PPs and argument structure. ling.auf.net/lingbuzz/002335.
- Pérez-Leroux, A.T., Castilla-Earls, A.P., Béjar, S., Massam, D. 2012. Elmo’s sister’s ball: the problem of acquiring nominal recursion. *Language Acquisition* 19: 301-311.
- Sevcenco, A., Roeper, T., Pearson, B. 2015. The acquisition of recursive locative PPs and relative clauses in child English. Paper presented GALA 2015, Nantes, 10-12 September.