

Comparing the onset of recursion in 3 languages  
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Developmental and diachronic data are relevant to the question of the universal availability of recursive embedding across languages. Diachronically, recursion is fluid: Widmer et al. (2017:799) show that, within Indo-European, NP types display great synchronic and diachronic diversity: specific forms of recursion can “emerge and disappear in less than 1,000 years”. While recursive strategies themselves are not stable, recursion as a property of language is robust. Developmental data allow us to study the impact of experience. If recursion is a language universal, children should not be overly sensitive to input. Overall, recursion is rare (Roeper 2011), but children can generalize properties of simple embedding to recursive embedding (Li et al. 2021). In domains with insufficient or variable input, such as German possession, children overgeneralize construction with fewer distributional restrictions (Pérez-Leroux et al., 2021). If the timing of onset of recursive embedding is not related to learning itself (which relates to simple embedding), but to demands associated with complex (second order) embedding (Verbrugge 2009), we expect comparable developmental timing across languages. If direct exposure is central, developing recursion should be vulnerable to input conditions and we might expect differences across languages, related to input robustness. In other words, does acquisition proceed at similar pace regardless of whether languages are more complex (more diverse possibilities) or simpler (only two embedding strategies)? The languages chosen differed in terms of structural heterogeneity, with English the most heterogeneous (mixed branching, multiple embedding markers) and Spanish the simplest (homogeneous right branching, and, unlike French, only two strategies for nominal embedding, relative clauses and the linker *de* ‘of’.



Figure 1. Sample task per condition

Using a referential elicitation task (Pérez-Leroux et al 2012) we targeted four types of recursive modification: possessive, comitative, locative, part-whole relation (Fig 1). Recursive target responses were low initially, with significant increases by age 6, but different from adults. Across languages and age groups, more recursive responses were produced to the comitative and possessive condition than to locative and part-whole. Given the structural differences across languages, the effect of condition reveals semantic preferences for modification rather than effects of structure. We entered children’s data into a linear mixed effect model (logit), with age, language

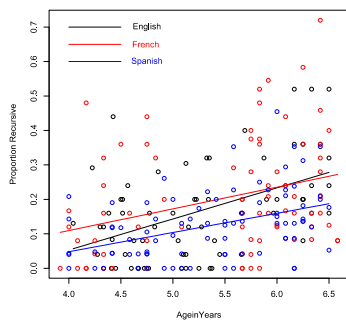


Figure 2. Proportion of target recursive responses by age

as fixed effects and Participant as random effect. The result showed main effect of age but no effect of language or language by age interaction (Fig 2). These results are most compatible with the view that structural complexity in the target language has no effect on children’s mastery of the ability for recursive embedding. The most compelling scenario is that third factor considerations underlie the developmental constraints that differentiate younger and older children, and prevent the generalization from simple to recursive embedding.

## References

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Table 1. Participants and age in months

Group	English			French			Spanish		
	n	mean	SD	n	mean	SD	n	mean	SD
4yos	25	54.3	(2.4)	26	52.6	(3.4)	28	54.0	(3.6)
5yos	25	64.4	(3.3)	25	68.9	(1.9)	30	65.3	(3.1)
6yos	21	77.2	(3.1)	26	75.4	(2.2)	30	75.0	(2.5)
Adults	13	-	-	12	-	-	21	-	-