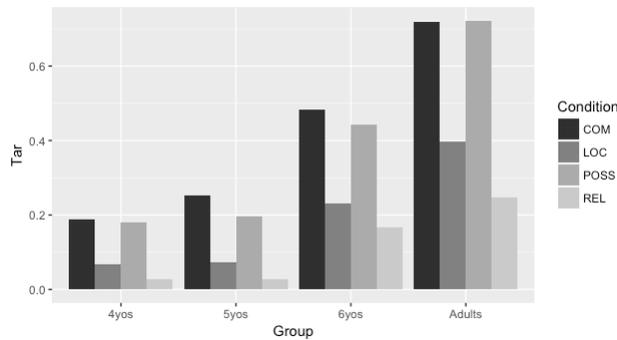


Syntactic recursion: theory and acquisition

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The ability to model recursive structures has been a central requirement since the beginnings of the generative enterprise (e.g. Chomsky 1956). Hauser et al (2002) put forth the hypothesis that the particular means by which the mind/brain generates linguistic expressions is a recursive function. It is commonly assumed that the locus of recursivity is in narrow syntax (e.g. Moro 2008, Nevins et al 2009); however, it has also been proposed to be in the discourse (Evans & Levinson 2009, Koschmann 2010), or a property of the interface (Arsenijevic & Hinzen 2010). Our general objective is to shed light on the nature of recursion in grammar through an exploration of the L1 development of recursive self-embedding structures in English. A broad typology of self-embedding structures has been studied in a number of works, but previous research has focused primarily on recursive sentential complementation structures. We focus here instead on DP-internal recursion, with an investigation of 4 self-embedding structures in the L1 acquisition of English: DPs with nested right-branching comitative, locative, and relational PP modifiers and the nested left-branching Saxon genitive. We take as our null hypothesis that the locus of recursivity is in narrow syntax and is given by the minimalist toolkit. Consequently, there is no reason to expect asymmetries in the availability and distribution of recursivity in the 4 constructions. However, if the type of structural configuration impacts acquisition, we may expect that the possessive condition will be more challenging for children since Saxon genitives involve left-branch recursion, long argued to involve more complexity than right branching recursion. We report a referential elicitation study targeting nested nominal phrases for each of the 4 constructions (POSS, COM, LOC, REL), each with 2-level embedding. Participants were 71 children between the ages of 4;00 and 6;11, and 13 adults, recruited from Toronto and upstate New York.



The Figure (*Proportion of recursive responses by group and condition*), reveals statistically significant effects of age and condition, with no interaction. POSS and COM develop earlier than LOC and REL, and are also more productive for adults. Contra Pérez-Leroux et al (2012), we did not find the hypothesized distinction between the genitive and the other constructions. Instead, all constructions maintain parallel patterns of asymmetries as

observed in the adult data, but such patterns are linked to lexical semantics, rather than structural configuration. These results help us to properly delineate the domain of recursion and formulate a credible developmental scenario. First, we argue that a purely structural explanation of the GEN-COM vs. LOC-REL asymmetry is not available. We therefore turn to the domain of processing or semantics, i.e. interpretive complexity, for an account. Second, we argue that the learning task involved in the recursion domain concerns the productivity of levels of embedding beyond level-1. The learning that takes place differs from deterministically-driven learning processes (in morphology, for instances) in that level-1 embedding is not developmentally differentiated across constructions while level-2 embedding is a distinct stage. Crucially we do not anticipate experience with level-2, but productivity of level-1 embedding to be the trigger for acquisition. Our findings support the view that the grammar required to produce recursive structures is part of narrow syntax, but that the development of multiple levels of embedding is constrained by experience (productivity) and third factor considerations (processing).

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