Variability in child phonology: Consequences for learning with parallel vs. serial grammars

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Preference for a poster, but I could give a talk instead

Abstract
This talk demonstrates one testable difference between learning phonotactics with a parallel (OT) grammar versus a more serial one (Harmonic Serialism), and analyzes the longitudinal variability in one child’s production to assess the compare the success of these two learning hypotheses. It is ultimately argued that learning from errors produced by a more serial grammar better captures the kind of variation seen in this child’s data.

The talk compares the developmental predictions of an OT learning algorithm (Prince and Tesar 2004; Hayes 2004; Tessier 2009) under two competing theories of how OT works: the Parallel OT of Prince and Smolensky (199/2004) and the Harmonic Serialism (HS) grammar of McCarthy (2000), (2008a), (2000b). This gradual learner moves from stage to stage under the influence of errors (i.e. mismatches between the child’s own production and the ambient target version they hear), and the main modeling result is that a learner using an HS grammar can get more localized, accurate information out of individual errors. As a consequence, the HS learner is less prone to some types of grammatical regressions, while the parallel OT learner can flip-flop between tolerance and avoidance of one marked structure as the result of mastering another.

The talk then considers whether these potential markedness flipflops made by the Parallel OT learner match those found in the data from a fairly recent diary study: that of Zachary, whose acquisition of L1 English is reported in Smith (2010). This study focuses on Zachary’s gradual acquisition of onset clusters between 1;6 and 3;8, along with three other frequent marked structures – codas, fricative and velars – that he acquired or began to acquire during the same period. The overall conclusion is that the Parallel OT learner in fact produces unattested regressions, and that the serial HS learner is better equipped to capture at least this child’s gradual phonological acquisition.
References


