Language Acquisition and a Process-Centered View of Language Change

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I argue that the actuation of a diverse range of diachronic phenomena in phonology, morphology, and syntax can be subsumed under the process of generalization learning during child language acquisition. These include a secondary split in 20th century Menominee and instance of phonemicization by phonological 'rule reversal' in Middle High German (Richter, 2021), the sporadic 'irregularization' of Early Modern English past tense forms (Ringe and Yang, 2022), the analogical extension of minority inflectional patterns at the expense of statistically predominant patterns in Late Latin past participles (Kodner, 2022) and Iranian Armenian aorists (Kodner and Dolatian, in prep), 'Dative Sickness' ongoing in Icelandic morphosyntax (Nowenstein et al., 2020), and the proliferation of the to-dative construction (Kodner, 2020) and argument structure change for psych-verbs (Trips and Rainsford, 2022) in Middle English. This has broad implications for how we conceptualize language change: an ontology of effects in language change will not line up with an ontology of processes. An approach to the study of change which focuses on *processes or mechanisms* over outcomes and effects stands to bring clarity to a confusing tangle of descriptive phenomena.

The model of generalization learning applied in these studies centers on the Tolerance Principle (TP; Yang, 2016), which provides an exact threshold for the number of exceptions that a linguistic generalization over some scope can tolerate if it is to be entered into a learner's grammar. Over-regularizations, among the most common innovations in child productions (e.g., Xu and Pinker, 1995; Mayol, 2007) can result from a learner's calculation over their limited linguistic experience: A TP calculation that would fail over an adult's lexicon succeeds (perhaps transiently) for the learner, leading to innovation. It is applicable across generalization learning in phonology, morphology, and syntax because it separates the algorithmic aspect of acquisition from the representations over which generalizations are formed (Payne and Yang, 2023), thus a wide range of changes to the grammar may be subsumed under this single mechanism.

In every case investigated here, the TP calculated over acquisition-like samples (Nagy and Anderson, 1984; Yang, 2016; Kodner, 2019) from available corpora reveals patterns of (non-)productivity that are not evident from post-hoc statistical analysis. For example, the TP determines that the statistically predominant Latin participle patterns *-tus* and short *-itus* were actually unproductive. Indeed, they retracted or died out, consistent with this result. But, *-ūtus*, which often supplanted them in Romance, is calculated to be productive within its scope despite its rarity. Thus, this analogical extension works out quantitatively as a standard, albeit fortuitous, case of learner over-regularization. How an innovation like this progresses to language change requires additional population-level mechanisms:

Of course, individual childhood innovations do not entail population-level change, nor is every change child-driven (e.g., Labov, 1994, 2007; Stanford, 2015). Combining insights from competing grammars (Kroch, 1994), with the sociolinguistics of peer-oriented early childhood interaction (e.g., Roberts and Labov, 1995; Nardy et al., 2014; Loukatou et al., 2021), and experimentation on regularization and matching of variable input by children and adults (e.g., Hudson Kam and Newport, 2005; Newport, 2020; Austin et al., 2022), the quantitative predictions of the TP can be extended to model change in the face of population-level variation (Sneller et al., 2019; Kodner and Richter, 2020). This yields insights into why these innovations may progress through actuation and gain a foothold in a population while others may not. This in turn provides a means for distinguishing instances of child-driven from adult-driven change in cases where direct observation is no longer possible.

This work demonstrates that a single mechanism, over-generalization during language acquisition, unites several disparate effects ranging from cases of phonemicization to changes in argument structure. An approach to language change centering the mechanisms or processes (generalization learning, category learning, specific processes of phonetic perception (e.g., Ohala et al., 1981) and production, online syntactic processing, more broadly child- and adult-driven changes, etc.) reconceptualizes the problem space in a way that cross-cuts and reduces traditional taxonomies of effects (analogical leveling, extension, phonemicization, secondary splits, grammaticalization, bleaching, etc.) and opens the door for new insights into when, why, and how language change occurs.

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