James Burridge, Tam Blaxter and Bert Vaux

University of Portsmouth and University of Cambridge

RUSE 2019

Testing the evolutionary paths of grammar

Abstract

We introduce a stochastic model of language change in a population of speakers who are divided into social or geographical groups. We assume that the evolution of language is driven by the inference of grammatical rules from memorised linguistic patterns. These paths of inference are controlled by an inferability matrix which can be structured to model a wide range of linguistic change processes. The extent to which speakers are able to determine the dominant grammar in their speech community is captured by a temperature-like parameter [1]. This can induce symmetry breaking phase transitions, where communities select one of two or more possible branches in the evolutionary tree of language. We use the model to test three hypotheses regarding the rise of the phrasal possessive in English and Continental North Germanic [2, 3].

References

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