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Frank, Stella
Smith, Kenny

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Language stability and change in age-dependent networks

Stella Frank
University of Edinburgh, Edinburgh, United Kingdom

Kenny Smith
University of Edinburgh, Edinburgh, United Kingdom

Abstract

People's social and linguistic environment changes over the course of their life: infants learn language from a small set of caregivers; children and adolescents practice language skills with their peers; adults speak to other adults and also pass on their language to the next generation (Kerswill, 1996, Sankoff 2018). Population models of language change have explored network effects but neglected changing networks as a function of agent age. We model a population of Bayesian agents that go through life phases of initial learning, subsequent peer interactions, and transmission to the next generation. We find these age-dependent networks to be more stable than other network architectures. This stability counters previous Bayesian modelling results in which languages reliably and rapidly change, converging to the learners prior, suggesting that languages spoken in populations in which interactions are organised assortatively by age may only weakly reflect human priors on language learning.