

Abstract

The regularization of linguistic structures by learners has played a key role in arguments for strong innate constraints on language acquisition, and has important implications for language evolution. However, relating the inductive biases of learners to regularization behavior in laboratory tasks can be challenging without a formal model. In this paper we explore how regular linguistic structures can emerge from language evolution by iterated learning, in which one person's linguistic output is used to generate the linguistic input provided to the next person. We use a model of iterated learning with Bayesian agents to show that this process can result in regularization when learners have the appropriate inductive biases. We then present three experiments demonstrating that simulating the process of language evolution in the laboratory can reveal biases towards regularization that might not otherwise be obvious, allowing weak biases to have strong effects. The results of these experiments suggest that people tend to regularize inconsistent word-meaning mappings, and that even a weak bias towards regularization can allow regular languages to be produced via language evolution by iterated learning.