

Interlocutors preserve complexity in language

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Abstract

Why do languages change? One possibility is they evolve in response to two competing pressures: (1) to be easily learned, and (2) to be effective for communication. In a number of domains, variation in the world's natural languages appears to be accounted for by different but near-optimal tradeoffs between these pressures. Models of these evolutionary processes have used transmission chain paradigms in which errors of learning by one agent become the input for the subsequent generation. However, a critical feature of human language is that children do not learn in isolation. Rather, they learn in communicative interactions with caregivers who draw inferences from their errorful productions to their intended interests. In a set of iterated reproduction experiments, we show that this supportive context can have a powerful stabilizing role in the development of artificial patterned systems, allowing them to achieve higher levels of complexity than they would by vertical transmission alone while retaining equivalent transmission accuracies.