

عنوان مقاله:

A MODEL FOR EVOLUTIONARY DYNAMICS OF WORDS IN A LANGUAGE

محل انتشار:

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خلاصه مقاله:

Human language, over its evolutionary history, has emerged as one of the fundamental defining characteristic of the modern man. However, this milestone evolutionary process through natural selection has not left any 'linguistic fossils' that may enable us to trace back the actual course of development of language and its establishment in human societies. Lacking analytical tools to fathom the critical essentials of evolutionary mechanism of cultural transmission, we seek the recourse of simulation study as another useful method of enquiry into the evolutionary trajectory of language. In this paper we use a toy model to understand an interesting feature of language evolution, namely, the scenario in which words gets fixed in a population of language users. We obtain simulation for the replicator dynamics that characterise the time rate of change of various words in the given language, using genetic algorithm to simulate the dynamics. We infer that two of the prime determinants for the establishment of a word within a linguistic population are its consonance with the grammar and its communicative efficiency.

کلمات کلیدی:

language, Complex adaptive system, evolution, Evolutionary game theory Genetic algorithm, Simulation

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