# Computer Simulation of Grammatical Change

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## ABSTRACT

Simulation studies of diachronic change in human languages have widely been reported in the field of evolutionary linguistics. Based on my experience with using computer simulations in the study of language change, (1) Creole development, (2) Changes in inflection within corpora, I propose the use of computer simulation models to study grammatical change. First, I introduce the emergence of creoles using a mathematical framework. Creoles are new-born languages arising when multiple languages are in contact. I make a model of creolization based on Nowak's mathematical framework by adding a factor for language contact into his framework. Our simulation results show that creoles are likely to emerge in situations of frequent language contact. Next, I explain our simulation and analysis based on corpora, which showed a relationship between frequency of appearance of a word in the corpora and changes of inflection. Computer simulations can show how interactions among individuals affect languages spoken throughout the community. Thus, hypothesizing about the abilities of individuals or about the learning environment, we can consider what causes a grammar to change.