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Metathesis in English and Hebrew: A Computational Account of Usaged-Based Phonology

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Abstract: It is now well understood that language use shapes the acoustic delivery of phonological patterns. One common example of this type of language change-under-use is metathesis, which is the reversal of the expected linear ordering of sounds. The gradual transformation of the Spanish word chipotle to chipolte in the United States is an example of metathetic change. The Genetic Algorithm (GA) is an optimization technique loosely based on the idea of natural selection. This paper shows that the GA can provide a computational model of a usage-based account of examples of metathesis. In the process, it argues that computer models can bring precision to linguistic theory. As an example we create a GA that is able to characterize metathesis in English and then is able to achieve even better results for related expressions in modern Hebrew.