Modeling the formation of phonotactic restrictions across the mental lexicon

Silke Hamann, Diana Apoussidou & Paul Boersma
University of Düsseldorf

Artificial language learning experiments on phonotactic restrictions have shown that participants trained on many word types with few repetitions perform better than participants trained on fewer word types with more repetitions. Hence, phonotactic learning is sensitive to type frequency.
We explain this computationally within an interactive multiple-level bidirectional model of phonology and phonetics. Each time a new word (form-meaning pair) appears, the virtual learner creates a new connection between underlying form and meaning and thereby automatically demotes a phonotactic constraint. Later occurrences of the same word cannot demote the phonotactic constraint any further, but occurrences of new similar words can.