

## Graded Constraints on English Word Forms

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We describe a graded constraint theory of English word forms that addresses the distribution of forms in the lexicon and the goodness judgments given by native speakers of nonwords as candidate word forms. The theory is applied to the rhymes of English monosyllabic monomorphemes (items like 'cat', 'hold' and 'clamp'). Within a template specifying possible rhymes, a number of graded constraints are identified. For example, in rhymes containing at least one stop consonant, there is a graded constraint favoring short vowels, a graded constraint favoring unvoiced vs. voiced obstruents, a constraint favoring coronal articulation, and a constraint against added embellishments such as a nasal, fricative, liquid, or second stop consonant (as in 'apt'). Each constraint affects the goodness of a rhyme type in a graded, cumulative fashion. Occurrence rates of different types of rhymes in the language conform closely to the predictions of both non-parametric and parametric versions of the theory. By adding a cut-off threshold, the theory can explain with good accuracy which types of rhymes occur at all and which do not occur, although both linear and interactions terms are necessary to give a complete account. The theory also accounts well for native speaker's judgments of the relative goodness of different rhyme types, although there are subtle differences between the patterns of occurrence and the patterns of judgments. We also find that violation of each constraint is associated with an increase in the time taken to produce the candidate form. The constraint violations considered have an additive effect on pronunciation duration.