GRIN

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Intonational encoding in memory representations: Imitating nuclear tunes in American English

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One function of phonological categories is to enable the rapid mapping of an auditory speech signal onto cognitive representations that ultimately link sound to meaning, and to store and update information about that mapping in long-term memory. In this paper we examine the nature of (sentence-final) nuclear tunes as intonational categories through the lens of memory. In a series of experiments, we ask speakers of American English to reproduce the "melody" of a heard utterance in the production of a novel sentence, to determine on the basis of acoustic modeling which distinctions are preserved among a set of 8 phonologically and phonetically distinct tune stimuli. To test the memory encoding of the hypothesized categorical distinctions, we vary the duration of delay between the auditory stimulus and the participants' response, and the delay task (vocalizing or not vocalizing during the delay) to identify which acoustic properties of a tune are robust under challenging conditions of memory encoding and retrieval, and which properties are not. We discuss the results in relation to the hypothesized tune categories in the Autosegmental-Metrical model of American English intonation, and in terms of their stable vs. variable phonetic characteristics.