

# TOWARDS MODELLING YOD COALESCENCE IN AMERICAN ENGLISH

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Yod coalescence (also referred to palatalization or neutral assimilation) is a special case of assimilation. In order for palatalization to occur, two conditions must be met: “the environment that induces the change must be a palatalizing environment (i.e. it must be a front vowel, a palatal semivowel or a palatal or palatalized consonant), and [that] the sound that results must be palatal or palatalized” (Bhat 1978: 48). Phonologically, palatalization is a segmental change where the place of articulation is altered in the surface form relative to the lexical form (Halle and Monahan 1985). From the viewpoint of articulatory and acoustic studies, palatalization results from an increased gestural overlap of the two sounds involved (Zsiga 1995, 2000).

The study considers only the cases across word boundaries in American English and is corpus-based in using the Buckeye corpus, a corpus of spontaneously produced speech elicited from forty long-time residents of Central Ohio, USA 2000 (Pitt et al. 2005, 2007). It contains 40 hours of recordings of 20 males and 20 females, 20 old, 20 young and was compiled between October 1999 and May. In total, Buckeye has 307,000 words.

The study pursues two objectives: to establish the frequency of occurrence of yod coalescence, and to correlate it with a range of linguistic and non-linguistic factors. Following previous scholarship, the following factors were considered: target sound, phonetic context (preceding and following sound), lexical frequency, speech rate, grammar, morphology, gender and age.

The first aim was realized by a quantitative analysis of the Buckeye corpus. The analysis consisted of comparing potential sites of processes with their actual realization (Dilley and Pitt 2007, Zimmerer et al. 2009), with the use of the LaBB-CAT, and acoustic analysis (Praat). Logistic mixed-effect modelling estimates the effects of phonetic context, lexical frequency, speech rate, grammar, morphology, gender and age on realization of the processes. The model was estimated in the R software environment (version 3.4.2, R Core Team 2018) using the `glmer` function (generalized logistic mixed effects model) from the `lme4` package (Bates et al. 2014).

In light of the results, of all possible environments, 51 percent of Yod coalescence processes were actually realized. The results are unexpected given the widespread conviction that assimilation in general is a frequent process (e.g. Shockey 2003, Cruttenden 2008). As for modelling, the results yielded by the developed model only partly trend in the expected direction. There is a possibility that my unusual findings regarding lexical frequency are a function of the extralinguistic characteristics of my sample. The study also considers interspeaker variability regarding the realization of the process by 40 speakers.

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