

Lenition of the flap in American English

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This study reports a difference in the degree to which the American English flap is lenited in certain domains. Five speakers, 2 male and 3 female, from a variety of speech communities across the United States read 64 sentences, 20 of which contained verbs that ended in [t]. The segments that followed were either a past tense maker, “-ed,” or the pronoun “it.” Both segments triggered a perceptible flap of the verb final [t] in 100 percent of the cases. Half the verbs selected for the study were from a list of high frequency words ($M \log frequency=155.24$), as indicated by the Kucera-Francis Word Frequency Corpus, and the other half were low frequency words ($M \log frequency=7.15$). Measurements were taken of the relative decibel difference between the intensity of the flap and the average intensity of the preceding and following vowel peaks. Across all participants, there was no effect for either factor—for the morphological context, $F(1,4)=1.37$, $p=.31$, for the frequency context, $F(1,4)=4.78$, $p=.09$ —and no interaction, $F(1,4)=1.48$, $p=.29$. However, individual ANOVAs revealed that the two male participants significantly lenited the flap within a morpheme context, “-ed,” compared to across a word boundary, “it,” $F(1,19)=6.78$, $p<.05$ for the first male participant, and $F(1,19)=11.10$, $p<.05$ for the second male participant, but exhibited no frequency effects, and no interaction. In contrast, the three female participants did not exhibit any significant lenition as a result of either factor. In fact, the females tended to produce flaps with significantly stronger decibel contrasts compared to the surrounding vowels than the two males $F(1,99)=25.47$, $p<.001$. The fact that the males exhibit variation in the quality of their flaps poses an interesting problem for accounts of flapping that treat it as a categorical phenomenon, but not a gradient one. This project represents a first step in determining whether gradient aspects of the flap in American English are best understood as a result of a highly specified phonological process, a natural outcome of phonetic implementation, or a combination of the two.