

Vowel-to-vowel coarticulation across words in English: Acoustic evidence.

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Vowel-to-vowel coarticulation introduces acoustic variation that decreases the distinctiveness of contrastive vowels. Listeners compensate for coarticulation using a perceptual parsing process that also enables predictions of upcoming sounds based on coarticulatory cues. This paper examines acoustic effects of anticipatory coarticulation across a word boundary in V1-C3V2 contexts. Crucially, it also assesses the role of the intervening C on coarticulation by comparing the effects of V2 on V2 with that of C, and by examining V2 effect when C has been factored out. We examined F1 and F2 from 10 speakers of American English. Our analysis shows systematic effects of anticipatory coarticulation across several vowel contexts, with comparably small effects due to the following C and V2. A perceptual parsing process (which factors out the effect of C prior to anticipating V2) is modeled using hierarchical regression. Results show coarticulatory effects due to V2 both when C effects are partialled out and when they are included. Analyses using multinomial logistic regression show that coarticulatory effects are sufficiently robust to predict V2 frontness or backness, and that accuracy is increased when V1 variation due to the intervening C is factored out. Thus, anticipatory V-to-V coarticulation across word boundaries is robust and can be an effective perceptual cue to upcoming material.