

Reconciling spatial and dynamic aspects of vowel variation and change

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Diphthong vowels exhibit a degree of inherent dynamic change, the extent of which can vary synchronically and diachronically, such that diphthong vowels can become monophthongs and vice versa. Modelling this type of change requires defining diphthongs in opposition to monophthongs. However, formulating an explicit definition has proven elusive in acoustics and speech perception, as diphthongisation is often gradient in these domains. In this talk, I present a study designed to evaluate whether diphthong vowels form a coherent phonetic category from the articulatory point of view. I present articulometry and acoustic data from six speakers of Northern Anglo-English producing a full set of phonologically long vowels. Several measures of diphthongisation are analysed, all of which suggest that diphthongs are not categorically distinct from monophthongs. I account for this observation with an Articulatory Phonology/Task Dynamic model in which diphthongs and long monophthongs have a common gestural representation, comprising two articulatory targets in each case, but they differ according to gestural constriction and location of the component gestures. I argue that a two-target representation for all long vowels is independently supported by phonological weight, as well as by the nature of historical diphthongisation and present-day dynamic vowel variation in British English.