Gestural representation and sound change in diphthong systems

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In this presentation, I discuss the phonological representation of diphthong vowels, focusing on the connection between the phonological structure and sound change.

The first part of the talk describes a model of vowel representation developed in Strycharczuk et al. (2024). I observe that variable diphthongisation occurs frequently in multiple accents of Anglo-English, such that the same vowel can have a more monophthongal or more diphthongal quality, and that slightly diphthongised 'in-between' vowels are ubiquitous. I argue that this phenomenon arises from structural properties of vowels. A crucial assumption is that tense monophthongs and diphthongs are composed of two discrete gestural targets: a nucleus and an offglide, timed sequentially. A monophthong has two targets with identical parameters. Computational modelling shows that monophtongs can become diphthongs through variation in the nucleus. Variable degrees of diphthongisation emerge from gradient variation in gestural parameters. By establishing structural similarity between tense monophthongs and diphthongs, this model allows us to account for historical changes, such as diphthongisation and monophthongisation, as instances of wider type of changes in vowel quality. Additionally, the two-target representation is consistent with phonological weight and phonetic duration in long vowels.

In the second part of the talk, I consider other diphthong systems, in which phonological weight, phonetic duration and capacity for diphthongisation pattern differently than in Anglo-English. The first case is Scottish English, where vowel duration varies allophonically, such that a diphthong can be long or short (Scobbie, Hewlett & Turk, 1999). The second case is /a/-tensing in American English, where a short monophthong undergoes diphthongisation (Labov, 2011). I discuss the representational adjustments required to capture these cases, and potential diachronic pathways involved. I argue that diphthongisation invariably involves the presence of two targets, but that gestural coordination varies between systems, and that it's closely linked with phonetic duration.

References

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