

Unstressed /ɪ/ and /ə/ in Derby: A categorical or gradient difference?

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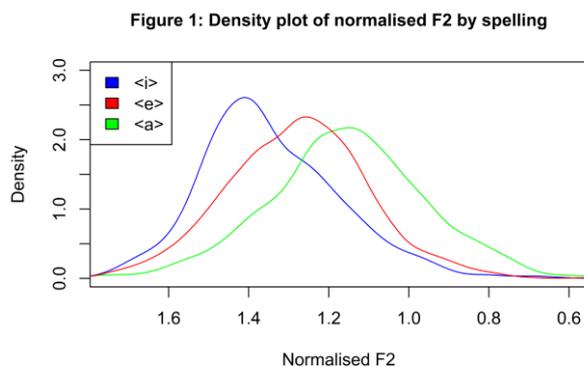
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Descriptions of English have traditionally specified three possible vowels in unstressed syllables: /ɪ/, /ʊ/ and /ə/ (Gimson, 1962; Roach, 1983). Focusing on /ɪ/ and /ə/, this paper examines the extent of categoricity of these differences. Gimson's and Roach's descriptions suggest that <i> generally represents /ɪ/; <a>, <o> and <u> represent /ə/, and <e> may represent both. Following such observations, spelling differences are utilised as a guide to the likelihood of an /ɪ/ or /ə/ pronunciation.

The data is from a corpus of Derby English (Milroy et al, 1997), consisting of conversational data from 31 speakers. The dataset included all unstressed vowels that were represented by <a> (n=1117), <e> (n=1353) or <i> (n=706), excluding stem final vowels. Formant measurements were taken at the vowel midpoint, and normalised using the modified Watt and Fabricius method (Fabricius et al, 2009).

This paper focuses on F2. This is because /ɪ/ is a high front vowel, and /ə/ is a central vowel and, other than in word final position, tends to be high (Flemming, 2009). Therefore, the clear differences between /ə/ and /ɪ/ were expected in F2.



As expected, <i> had the highest F2, <a> the lowest and <e> was intermediate. These differences were analysed using mixed effects modelling, with fixed effects including spelling, vowel duration, word position, and place of adjacent consonants; with random intercepts for word and speaker, and by-speaker random slopes for spelling. Likelihood ratio model comparisons showed these differences to be significant.

Figure 1 shows the F2 of <e> to be unimodal, and standard deviations were similar between all 3 groups (<i>=0.175, <a>=0.198, <e>=0.180). Together, these findings suggest that <e> may vary gradually rather than categorically between [ɪ] and [ə]. More broadly, this suggests that, in Derby at least, unstressed vowels may not vary categorically between [ɪ] and [ə].

References

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