Gestural Reduction and Regressive Place Assimilation: A Case Study of Word-final /n/ in British English

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This study reports on the continuing investigation into the articulatory nature of regressive place assimilation across word boundaries in British English. Word-final alveolars optionally assimilate to the following word-initial consonant. This place assimilation is characterised as a gradient phonetic process that involves gestural overlap and reduction (e.g. Browman & Goldstein 1992, Ellis & Hardcastle 2002). However, there is still considerable uncertainty about the relationship between the reductions of word-final alveolars and the overlapping gestures of the following consonant. The current study further investigates how gestural overlap is related to gestural reduction and how the assimilatory effects vary across speakers.

This study focus on the word-final /n/ followed by word-initial /p/, /b/, /m/, /k/ or /g/ (e.g. earn more, green beans, corn candy). The data came from the MOCHA-TIMIT database and was analysed for the utterances spoken by three speakers of Southern British English. A dataset of 96 tokens in total was used. The word-final /n/ was characterised by the EPG contact patterns. The vertical height of the tongue tip and the velum was measured by the EMA trajectories. Timing and duration of the word-initial labials and velars were examined by measuring the lower lip and the tongue dorsum vertical movement. Statistical analyses were performed using SPSS®.

Preliminary results are summarised as follows: (i) interspeaker differences are considerable; (ii) the ‘complete’ reduction of the tongue tip gesture for word-final /n/ is dominant and the partial reduction is not common. These findings suggest that speakers employ different strategies to implement the assimilatory effects. Currently, statistical analyses of temporal characteristics are in progress, investigating whether the overlapping gesture of the following word-initial consonant is temporally lengthened when the tongue tip raising gesture for the word-final /n/ is reduced completely. The implications for the relationship between articulatory organisation and phonological structure will be discussed.
References