

## Constraints on phonetic convergence: creaky voice on the college campus

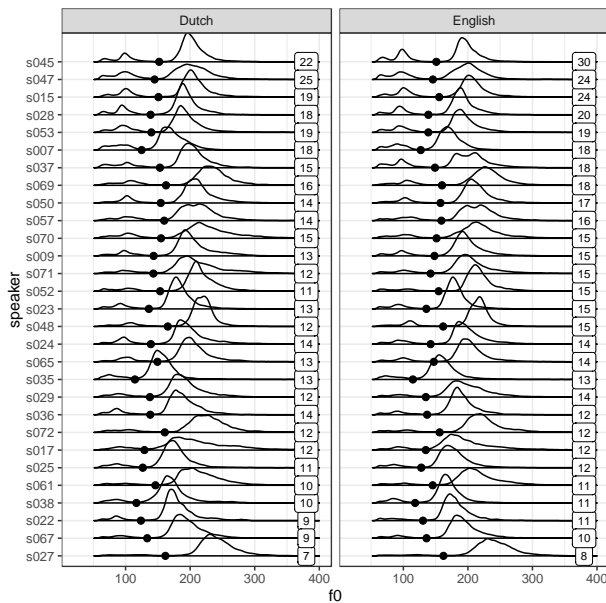
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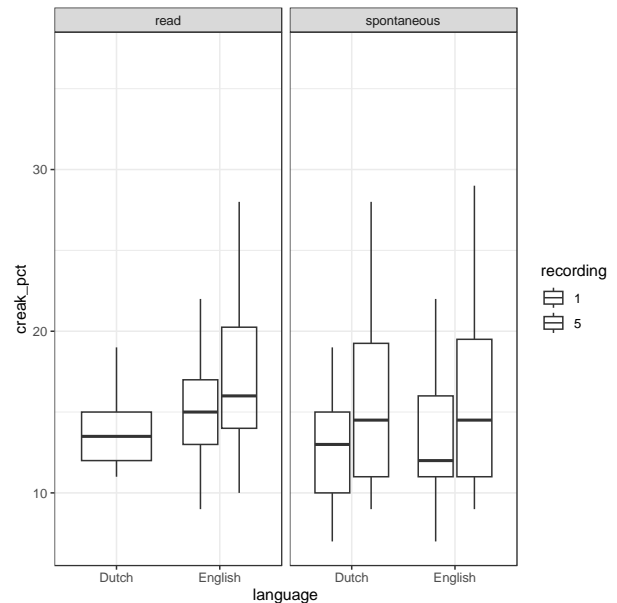
Speech accommodation (or *imitation*) between interlocutors in individual tasks or conversations is now a well-established phenomenon, both in L1 contexts [1,2], and between L2 speakers with different L1 backgrounds [3]. While some researchers have made explicit claims that such short-term accommodation may provide the seeds for sound change in the longer term, this is not uncontroversial [4,5]. Longitudinal studies have shown accent change and phonetic convergence over the medium to long term, but to a modest extent and modulated by various factors [6,7]. We examine phonetic convergence in a relatively tight-knit community over a number of years, with the variety converged upon being L2 English as a lingua franca.

The D-LUCEA corpus [8] consists of recordings of students at University College Utrecht, an international campus college in the Netherlands where English is the lingua franca. Participants were recorded up to five times over their three-year stay in L2 English as well as their L1. Speakers in the corpus have previously been shown to converge over time on phonetic features, both segmental [9] and prosodic [10], but also to maintain speaker-specific patterns on others [11]. The current study looks at potential convergence by these speakers on their use of vocal fry, or creaky voice (CV). CV is a well-known social marker in several L1 Englishes, where it is associated with upwardly mobile, urban, young female speech. It is also a feature that speakers have been shown to converge on in conversation [12], and that L2 speakers are able to learn through exposure alone [13]. We focus on speakers from our corpus whose L1 is Dutch; there is some emerging evidence that CV may have acquired a similar sociolinguistic profile to that in English [14]. We used the antimode method [15,16] to determine whether our speakers acquire CV in their English, use it in their L1 as well, and whether they converge over time.

The results show high inter-speaker variation coupled with limited intra-speaker variability, both across languages and recordings (Fig.1). Linear mixed-effects models showed effects of recording (use of CV increases over time) within the L2 English data ( $p=.033$ ); they also showed a significant interaction ( $p=.017$ ) between language and speech style (more CV in English, but only in the read speech). Fig.2 illustrates the effects of recording, language and style on creak prevalence in the data. While CV increases over time across all speakers, inter-speaker variation remains stable, suggesting CV is an idiosyncratic feature, rather than gradually acquired or converged upon. Though speakers are assumed to be more plastic in adjusting their L2 accent features than their L1 [17], our study complements those that find limited convergence at the community level in the medium to long term.



**Fig. 1.** f0 (Hz) distributions, antimodes (●) and creak prevalence (%) by language for all speakers. Speakers sorted by overall creak prevalence.



**Fig. 2.** Creak prevalence (creak\_pct) by language (Dutch, English), speech style (read, spontaneous), and recording (first <1>, last <5>).

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