

/u/-fronting before /l/ in Manchester: acoustic, articulatory and variationist approaches

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The process of /u/-fronting, whereby the tense high back rounded vowel in words such as *two* and *goose* is articulated towards the front of the mouth, resulting in higher F2 values, is reported for a remarkable number of dialects of English. These include varieties in the UK (Henton 1983, Harrington 2008, Cheshire 2011, Jansen 2012, Haddican et al. 2013), the US (Labov 2001, Baranowski 2008, Hall-Lew 2011, Fruehwald 2013) as well as the Southern Hemisphere (Harrington 1997, Mesthrie 2010). The vast majority of these studies report blocking of /u/-fronting before /l/, which is unsurprising given that /l/ is darker, i.e. the tongue is backer, in such contexts.

Contrary to this typical pattern, Baranowski (2017) in a study of speakers in the City of Manchester, UK, found considerable fronting of /u/ before /l/ in words such as *school*, *pool*. Not all social classes exhibited fronting in this context: upper-middle-class speakers followed the typical pattern found in other varieties, but working-class speakers did show consistent evidence of fronting before /l/. This relationship was monotonic and also stable i.e. there was no apparent effect of age. Considering Manchester is well-known as having very dark variants of /l/ in all positions (Carter 2002, Turton 2014, 2017, Kirkham et al. 2019) it is particularly surprising that this fronted vowel is combined with a back [ɫ] in rime position for these speakers, thus raising questions about co-articulatory motivations for this sound change.

The current investigation presents novel data from 51 white speakers of Manchester English, stratified by age, gender and socio-economic status, recorded in sociolinguistic interviews, supplemented with wordlist reading and minimal-pair tests. Formant measurements of the informants' complete vowel systems are obtained in Praat by hand for 25 speakers and in FAVE (Rosenfelder et al. 2014) for the remaining speakers. Measurements for /l/ are automated with a Praat script calculating F1 and F2 of /l/. This acoustic data is combined with supplementary data using ultrasound tongue imaging with four speakers producing /l/s in different phonetic environments. The results are analysed in a series of mixed-effects linear regressions in R, considering the effect of social factors (such as age, gender, social class and style) alongside language internal factors (such as phonological environment) and external factors (such as lexical frequency). We consider multiple measures of social class, including occupation, education and a multi-level socio-economic index. The ultrasound data are analysed using Generalised Additive Mixed Models (GAMMs) and Principle Components Analysis.

The results from the acoustics of /l/ in the sociolinguistic data demonstrate that, indeed, all Mancunians have some overlap in phonetic space between light and dark /l/ variants, but that there is a greater distance between the two for middle class speakers (see Figure 1). The ultrasound midpoint data from four speakers suggest that working class Mancunians (Figure 2) do not exhibit the typical light/dark dichotomy between initial and final /l/s, whereas some middle class speakers do (Figure 3). We pose the question as to whether a lack of an allophonic distinction between light and dark variants may result in the blocking rule which prevents /u/ from fronting before the dark allophone of /l/ being redundant in speakers without an allophonic distinction between [l] and [ɫ].

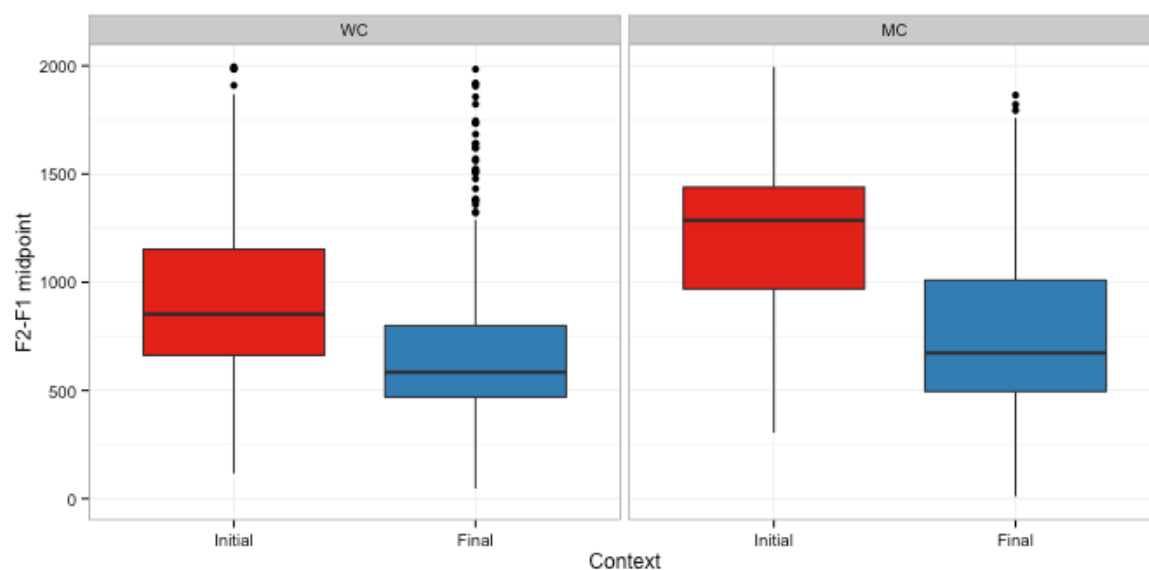


Figure 1: Acoustics of initial and final /l/ in working class (left) and middle class (right) speech

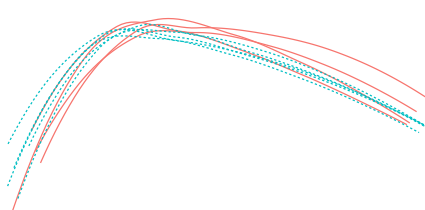


Figure 2: Working class speaker's /l/s

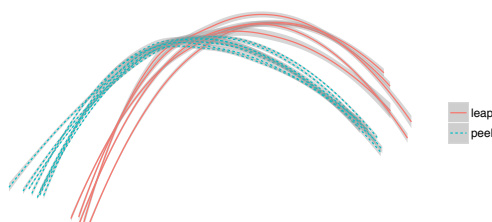


Figure 3: Middle class speaker's /l/s

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