Authors' manuscript

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Manchester English[1]

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This chapter provides an overview of Mancunian English, focusing on consonantal changes in progress in the dialect. It begins with a description of the most distinctive features of Manchester's vowels and consonants. This is followed by a quantitative exploration of the linguistic and social constraints on variation in T-glottalling, TH-fronting, and H-dropping, on the basis of a sample of 86 speakers stratified by age, gender and socio-economic status. H-dropping is a case of stable sociolinguistic variation, with working-class males showing the highest rates; there is a strong effect of grammatical category, with preceding and following segments also playing a role. T-glottalling in word-final position is a change nearing completion, initially led by working class males, with the youngest generation of Mancunians in all social groups showing high and comparable rates. Intervocalic T-glottalling is less advanced and shows more social differentiation; working class males are still leading it, but other social groups are catching up in the youngest generation. Both T-glottalling and TH-fronting appear to be male-led changes in Manchester. Internal factors, such as position in the word, following segment, and voicing, are shown to play a role as well.

1. Introduction

Despite Manchester's status of one of the largest and most prominent cities in Britain, the accent has been curiously under-researched in comparison with other dialect areas of the UK, particularly in terms of large-scale phonetic analysis. This chapter attempts to fill this gap by providing an overview of Manchester's sound system, followed by a detailed quantitative analysis of three consonantal variables: H-dropping, TH-fronting, and T-glottalling.

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1.1 Geographical Area

The urban conurbation of Greater Manchester (Map 1) is not a particularly informative label when it comes to defining the Manchester accent. The satellite towns such as Ashton, Bolton, Bury, Oldham, Rochdale and Wigan, though part of Greater Manchester, have distinctively different systems, which deserve to be studied in their own right. At the same time, the area of Central Manchester (labelled as *Manchester* in Map 1) may be too restrictive. For the purpose of this study, we define Manchester as the area within the M60 ringroad, including parts of Wythenshawe and Stockport immediately south of the M60. The motorway represents a geographical boundary and as such is useful for distinguishing between Manchester as a uniform dialect area and the surrounding dialect regions, particularly those to the north.

Map 1: Greater Manchester area

1.2 Overview of the accent

In its vocalic system, Manchester is essentially a Northern dialect of English in that it lacks the distinction between FOOT[2] and STRUT and does not have the long and retracted broad-*a* vowel of BATH found in the South, i.e., there is just one low front phoneme, known as short-*a* or TRAP, using Wells' (1982) notation, which includes words in the TRAP and BATH lexical sets. As opposed to many Northern dialects (and some areas north of Manchester

2 Mancunians may use the long /u: / vowel in FOOT before /k/, as, in *book, look, cook*, which is a well-known feature of other Northern dialect areas, e.g. Liverpool, though in Manchester this tends to be found mostly in the speech of the oldest generation.

within Greater Manchester), however, the long mid vowels FACE and GOAT are not ingliding or monophthongal in Manchester, but are upgliding diphthongs, front- and back-upgliding, respectively, as they are in RP, i.e. FACE glides towards the high front area of the vowel space, and GOAT traditionally glides towards high back position.

One development that Manchester shares with many other dialects of English, including Northern dialects (e.g. Jansen 2012, Haddican et al. 2013), is the fronting of the long back vowels GOOSE and, to a lesser extent, GOAT. The nucleus of GOOSE shows very advanced fronting; it is now in high front position for all social groups in the community. There is also some fronting of the glide target, with the vowel becoming more monophthongal. In contrast to most dialects of English, the fronting of the nucleus is complete in all phonological environments, i.e. for allophones with both coronal (as in *two* and *do*) and non-coronal onsets (as in *boot*, *food, goose*, etc.). Although the non-coronal allophone is usually less fronted in most English dialects, for the youngest generation of Mancunians, there is no allophonic difference any more, with both occupying high front position above 2000 Hz in F2 (Baranowski 2014a). Another important difference between Manchester and most other dialects of English is that in Manchester there is considerable fronting of the GOOSE vowel before /l/, as in *school* and *pool*. The fronting before coda /l/ is a case of stable sociolinguistic variation, with no differences between generations, displaying a pattern of social class stratification with the lower classes showing more fronting (Baranowski 2014b; cf. Hughes et al. 2011; Hughes, Haddican and Foulkes 2012). Ongoing work on the interaction between GOOSE-fronting before /l/ and l-darkening using ultrasound imaging suggests that working-class Mancunians, as opposed to middle-class speakers, do not exhibit the typical light/dark dichotomy in /l/; this lack of an allophonic distinction may prevent the rule blocking GOOSE-fronting from applying (Turton and Baranowski 2014).

There is some fronting of the nucleus of GOAT in Manchester (except before /l/), but it is strongly conditioned by social class, with the highest-status groups leading this process and the working classes showing very little of it. In fact, there is a significant age trend for the middle classes only, the working classes showing no differences between generations. There is also some fronting of the glide target, again, advanced by the highest-status social groups (Baranowski 2014b).

The NORTH and FORCE phonemes are variably merged in Manchester. As a result, minimal pairs such as *for-four, horse-hoarse, war-wore*, etc., sound identical for some speakers in Manchester. The distinction is still quite strong in working class speech, including the youngest generation, but the two vowels tend to be merged in both production and perception for middle class speakers (Baranowski 2014c). For those speakers maintaining a distinction, the FORCE phoneme is higher and more retracted in acoustic space than NORTH, i.e. with lower F1 and F2 values. Ongoing work suggests that the distinction may be stronger in north Manchester than in south Manchester (Baranowski 2015).

At the same time, it is worth noting that in Manchester itself, as opposed to some surrounding areas to the north and west of the city (cf. Barras 2006), there is a distinction between the SQUARE and NURSE phonemes, with no indication of a merger in progress.

The unstressed final vowels of the word classes *happ*Y and *lett*ER have been found to back and lower in comparison with other accents of English (Turton and Ramsammy 2012). In utterance-final position, *happ*Y tends towards the vowel in DRESS, giving something like [ha.pɛ]. Although the stereotype of Mancunians is that they pronounce their hometown as *Manchest*[ɒ], this has been shown to be an exaggeration. Rather than tending

towards the LOT vowel, the *lett*ER vowel actually only seems to back on the F2 dimension, and shows little to no lowering, the realisation occupying the space of an RP-like STRUT. Analyses of social factors showed that the lowered and backed variants of *happ*Y are only used by working class speakers, whereas backing of *lett*ER occurs in both working class speech and middle-class male speech (Turton and Ramsammy 2012b).

Manchester speakers exhibit a post-velar nasal stop (henceforth 'velar nasal plus') in words such as *ring, singer*. This means that the process of post-nasal stop deletion, where Early Modern English *sing* changed from /sɪŋg/ to /sɪŋ/, did not occur in Manchester – /g/ is retained – so that *singer* and *finger* are exact rhymes. This can be observed for the area encompassing Manchester in the *Linguistic Atlas of England* (Orton et al., 1978: Ph 242) and is noted in previous descriptions of the area (see Wells, 1982: 365-366).

This has interesting consequences for the (ing) variable, as Mancunians have the option of /ɪŋg/ or /ɪn/, rather than [ɪŋ] vs. [ɪn] found in most dialects of English. It has been claimed that, for dialects with velar nasal plus, [ŋ] is an allophone of /n/ which can only occur before velar consonants e.g. before the /k/ in *bank* or the non-deleted /g/ in *sing* (Beal 2004: 137; cf. Schleef, Flynn and Ramsammy 2015). Unsurprisingly, considering the marked nature of unstressed coda /ɪŋg/, this realisation is only found in the most formal speech styles, such as reading elicitations. For many speakers, (ing) is pronounced with the non-standard coronal realisation, i.e. [ɪn], most of the time, including words such as *anything, ceiling* and proper nouns such as the place name *Reading*. In non-(ing) environments, as in *sing*, the /g/ is always retained, although may be deleted in casual speech before another consonant.

The liquid consonant /l/ in Manchester English is described as dark in all phonotactic positions (Beal 2008: 130; Cruttenden 2001; Kelly and Local 1986). Ultrasound tongue imaging data confirm that /l/s in both initial position (e.g. *leap*) and final position (e.g. *fall*) indeed show the backed tongue body, retracted tongue root and reduced tongue tip gesture associated with dark /l/ in all positions, as well as a small difference between the first and second formants indicating acoustic darkness. However, utterance-final /l/s have a significantly more retracted tongue root and reduced F2-F1 than other contexts, i.e. phrase-final /l/ is slightly but significantly darker than other /l/s, particularly for middle-class speakers (see Turton 2014).

In common with many other dialect areas in the UK, Manchester is undergoing a change in the pronunciation of non-foot-initial /t/, as in *water* and *cat*, known as T-glottalling, and a change in the (th) variable, as in *three* and *bother*, from [θ, ð] towards [f, v], referred to as TH-fronting. The following sections present a detailed quantitative analysis of the social and linguistic conditioning of these two variables; it also explores variation in H-dropping, a stable consonantal variable in Manchester.

2. Methodology

Quantitative results are based on the auditory analysis of 86 speakers, 39 female, 46 male, from age 11 - 81. All data were analysed using R (R Development Core Team 2009) and the R package lme4 (Bates and Maechler 2009) by use of generalised mixed effects logistic regression, using speaker and word[3] as random effects (see Baayen et al. 2008). In each case, the dependent variable was the interview tokens of the variable in question, i.e. H-dropping, TH-fronting or T-glottalling. Where appropriate, factor groups were collapsed

3 Word is not coded for in the T-glottalling data and so cannot be included as a random effect.

into a smaller number of categories[4]. For all variables, application of the rule (H-dropping, TH-fronting, T-glottalling) is coded as 1, and the standard form is coded as 0. Therefore, positive estimates in the regression coefficients signify more application of the rule, and negative estimates mean that the category is more likely to retain the standard. Actual age is used as a continuous variable in all models, although age groups are used in plots for coherency (young are aged 11-30, middle are 31-54, and old at 55+). Socio-economic levels are based on occupation and for this analysis are collapsed into working class (WC) and middle class (MC). Other measures of social status, such as education, have been tested, but so far occupational levels have generally produced the best models.

3. Consonantal analysis

3.1 H-dropping

The phonological process of H-dropping, e.g. *'ouse* for *house,* has been reported in dialects across Britain for hundreds of years. H-dropping is often cited as a typical example of stable variation, as speakers of all ages tend to show equal usage of the dropped variant within their social category. It is generally found to be more frequent in working class (WC) speech than middle class (MC) speech, and at higher frequencies amongst males than females (e.g. Trudgill 1974).

Unstressed auxiliaries, such as *have, has, had*, and pronouns such as *he, her, his* are excluded from analyses of H-dropping in this study. Such words are subject to H-dropping even in RP, or American varieties of English, and are not considered true instances of the phenomenon (Wells 1982: 254). H-dropping can also occur word-internally e.g. *behind,* although such instances are rare in this dataset. The process feeds linking /r/, so that the Manchester district of Harpurhey may be pronounced /ˌa:pəˈɻeɪ/. It can also be deleted in initial clusters with yod, so that the Manchester district of Hulme may be pronounced /ju:m/. Speakers of H-dropping varieties will often pronounce the letter *H* as *haitch*, rather than the standard h-less *aitch*. This was included as an item on our wordlist, and 85% of speakers (from 44 tokens) hypercorrected[5] to *haitch.*

Figure 1. Rates of H-dropping across age, gender and social class in Manchester

Table 1 shows the results of the model of best fit, as determined by a mixed-effects logistic regression, including gender, social class, preceding segment and grammatical category as fixed effects, and word and speaker as random effects, based on 4912 observations of (h). As Figure 1 demonstrates, Manchester speakers generally follow the expected trend for stable sociolinguistic variation. The rates are consistent across age groups within each social category, with WC males showing the highest level of H-dropping. WC females and MC speakers pattern similarly to each other. There is an increase in H-dropping by young middle-class females, which is potentially a sign of age-grading. Although it doesn't not reach significance here, this pattern may indicate a trend

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4 This was determined by running a series of Bonferroni corrected pairwise t-tests to investigate whether two categories were significantly different from each other e.g. for T-glottalling, a following obstruent and following sonorant consonant show no significant difference and were collapsed into one.

5 /he: t͡ʃ/ is the standard pronunciation of the letter <h> in Irish English (Hickey 2007: 322), so the possibility of Irish influence, rather than hypercorrection, cannot be discounted entirely.

which middle-class females grow out of, a pattern also noted for Australian girls in inner-city Sydney (Eisikovits 1991).

Age is not significant for this variable, demonstrating that H-dropping is stable in Manchester, as opposed to Southern cities such as Reading and Milton Keynes, where young speakers are showing lower frequencies of H-dropping (Williams and Kerswill 1999: 158). Note that, from the same study, Hull speakers show higher overall rates than Manchester, with more than 80% H-dropping for WC speakers, though, similar to Manchester, the rates in Hull remain stable in apparent time.

Table 1. Coefficients of a mixed-effects logistic regression model of H-dropping, with random intercepts for speaker (sd 1.5833) and word (sd = 0.8838).

	Estimate	Std. Error	z-value	p-value
Intercept (male, WC, preceding pause, adverbial*)*	-0.9202	0.4391	-2.0960	0.0361
Gender (female)	-1.7363	0.4091	-4.2450	<0.0001
class (MC)	-1.3322	0.4092	-3.2550	0.0011
preceding consonant	0.7861	0.2211	3.5560	0.0004
preceding vowel	0.5695	0.2234	2.5490	0.0108
Gram category (*have)*	0.7465	0.3481	2.1450	0.0320
Gram category (noun/verb/adj)	-1.1749	0.2547	-4.6130	<0.0001

Figure 1. Rates of H-dropping across age, gender and social class in Manchester

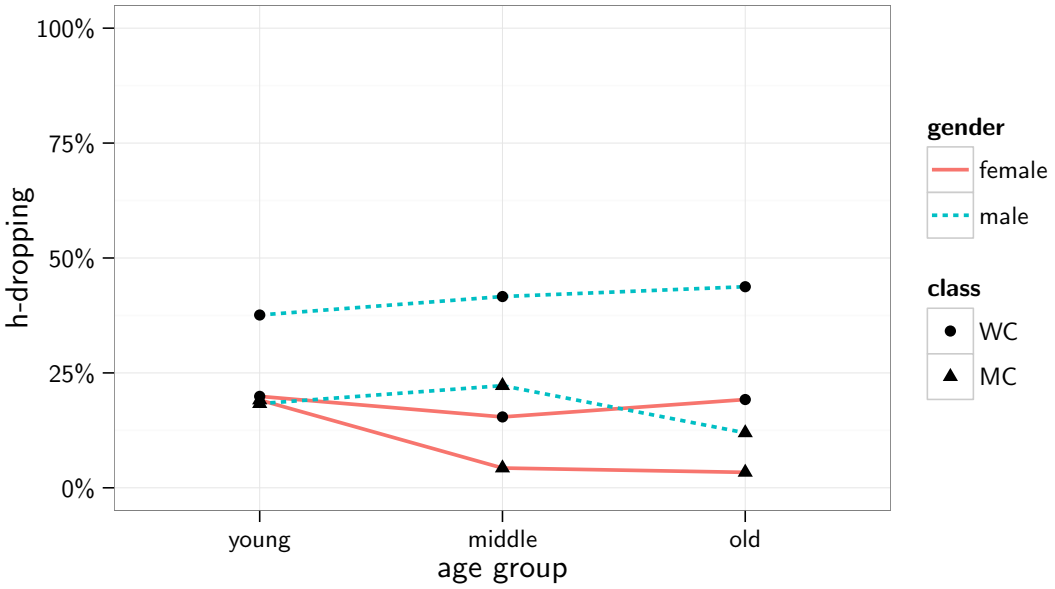


Table 2. Percentage of H-dropping across social categories

	female WC	male WC	female MC	male MC
Younger	20% N = 955	38% N = 1173	19% N = 733	18% N = 1103
Middle	15% N = 240	42% N = 435	4% N = 372	22% N = 99
Older	19% N = 276	44% N = 448	3% N = 297	12% N = 184

The effect of grammatical category can be seen in Figure 2. Tokens were coded for grammatical category (see Table 3 for levels), with the highest deletion rates found in main verb forms of *have*, followed by adverbials (such as *hopefully*), and nouns, verbs and adjectives showing the lowest rates of H-dropping. The six categories were collapsed into three groups for the final model; non-auxiliary use of *have* (i.e. main verb *have*, or *have to*), adverbials (e.g. *hopefully*), and a third category containing nouns, verbs and adjectives. Main verb *have* is significantly more likely to exhibit H-dropping than adverbials, and nouns, verbs and adjectives (switching the intercept gives a p-value < 0.0001). In turn, adverbials are significantly more likely to exhibit H-dropping than nouns, verbs (other than *have*) and adjectives.

Figure 2. H-dropping across grammatical categories (adjective, noun and verb were collapsed in the model).

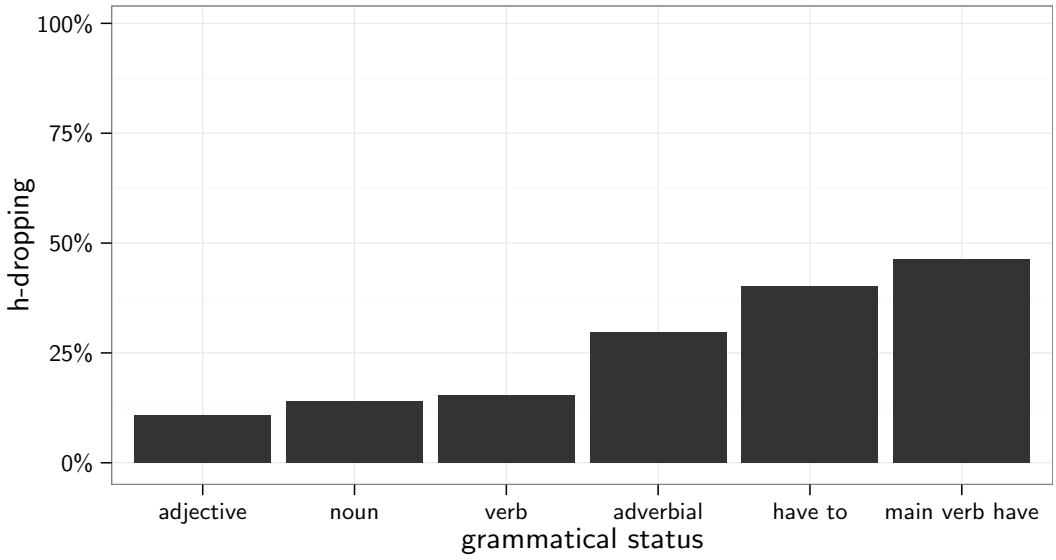
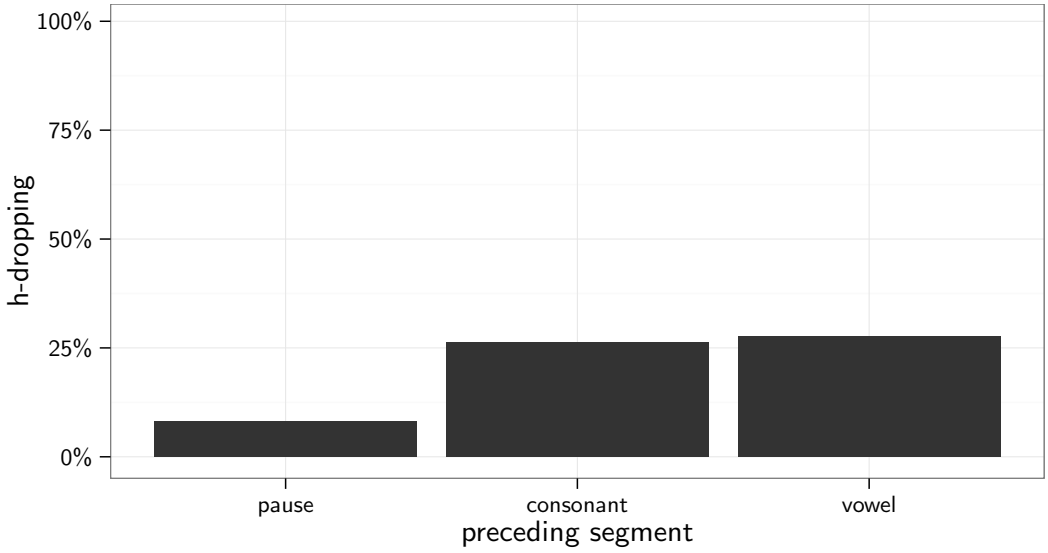


Table 3. Percentage H-dropping across grammatical category

	adjective	noun	verb	adverbial	have to	main verb have
% h dropped	11%	14%	15%	30%	40%	46%
N	727	2537	866	330	259	1597

The effect of the preceding segment is demonstrated in Figure 3 with a preceding pause much more likely to inhibit H-dropping than a preceding consonant or vowel. In other words, utterance initial (h) is much less likely to be dropped, which is unsurprising as this position shows effects of initial strengthening (Keating et al. 2003) and is possibly more salient. The comparative rarity of utterance-initial h-loss has also been observed in other studies (Tollfree 1999: 173).

Figure 3. The effect of preceding segment on H-dropping



Stable sociolinguistic variables often exhibit style-shifting, with more standard forms used in more formal styles, as is the case with (h) in the Manchester data in

Figure 4. As expected, WC males show the highest rates across all styles, and all speakers pattern in the same direction, with more H-dropping in interview styles (casual[6] and careful) than in reading styles (wordlist and minimal pairs).[7]

6 Casual speech tokens are those produced in narratives of personal experience; careful speech is the rest of the sociolinguistic interview, except for formal elicitations, i.e. word list and minimal pairs.

7 The number of tokens in the wordlist and the minimal pair cells are very small, due to missing data for some of our informants. The differences between these two styles is not significant.

Figure 4. H-dropping across styles

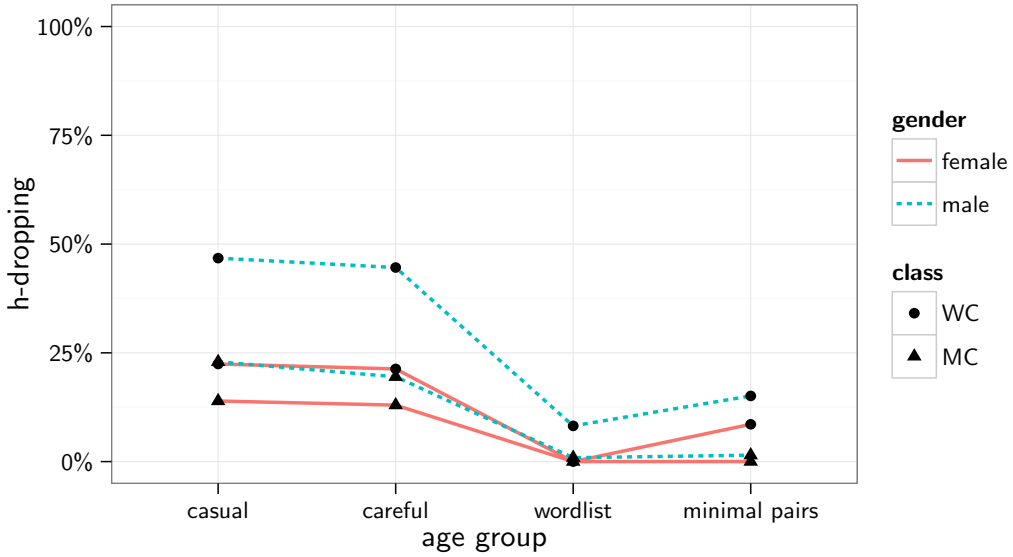


Table 4. Percentage of H-dropping across linguistic styles

	female WC	**male WC**	**female MC**	**male MC**
Casual	22% N = 624	47% 650	14% N = 395	23% N = 253
Careful	21% N = 643	45% 1085	13% N= 855	19% N = 954
Wordlist	0% N = 169	8% 268	0% N = 98	1% N = 111
minimal pairs	9% 35	15% 53	0% N = 54	1% N = 68
	1471	2056	1402	1386

3.2 TH-fronting

The fronting of the dental fricatives /θ, ð/ to labiodental /f, v/ (resulting in lack of contrast between *three* and *free*) is said to be one of the fastest spreading phonological changes in non-standard English (Trudgill 1999). The existing literature provides evidence that the phenomenon is being adopted by younger speakers in cities and towns all over the UK

(Foulkes and Docherty 1999). We use the term TH-fronting to refer to both the voiceless variant /θ/ as in *breath* and the voiced variant /ð/, as in *breathe.* It should be noted that the voiced variant does not front in initial position, possibly due to the fact that all words in /ð/ in this context are function words, e.g. *this, that, them;* such words were excluded from the analysis. Although variants other than fronted ones are possible for (th), such as TH-stopping (*dis and dat* for *this and that*), and deletion (*wi'out* for *without*), such tokens are minimal in this dataset and therefore omitted from the analysis.

The model of best fit, as determined by the generalised mixed-effects logistic regression shown in Table 5, included age (in years), gender, years in education, position in the word, following segment, and voicing, based on 5,345 observations of (th). The standard variant was coded as 0, and the fronted variant as 1, meaning positive estimates in the model reflect higher rates of fronting, and negative estimates point towards more use of the standard.

Table 5. Coefficients of a mixed-effects logistic regression model for TH-fronting, with random intercepts for speaker (sd = 3.0309) and word (sd = 0.3707).

	Estimate	Std. Error	z-value	p-value
Intercept (male, initial, fol cons, voiceless)	-0.5933	0.9520	-0.6230	0.5332
gender (female)	1.5417	0.8558	1.8010	0.0716
age	0.0952	0.0232	4.1100	<0.0001
position (medial)	-1.0533	0.2088	-5.0450	<0.0001
position (final)	-0.4619	0.2506	-1.8430	0.0654
following pause	0.2108	0.3049	0.6910	0.4893
following vowel	0.6001	0.1572	3.8170	0.0001
voicing (voiced)	-0.5113	0.1815	-2.8180	0.0048

Unsurprisingly, younger speakers are leading this change in Manchester, showing generally higher rates of TH-fronting than other age groups. Several of our younger speakers in the dataset TH-front 100% of the time in interview style, a figure which is averaged out by their more conservative peers (Figure 5). TH-fronting's status as an urban youth norm (Williams and Kerswill 1999) is therefore confirmed for Manchester, where age is the strongest predictor of TH-fronting overall. This can be observed in the negative estimate in Table 5, which shows that increasing age results in decreasing likelihood of fronting. Class and gender are not significant predictors of TH-fronting, nor is an interaction between the two.

Figure 5: TH-fronting across age, gender and social class for both voiceless and voiced variables.

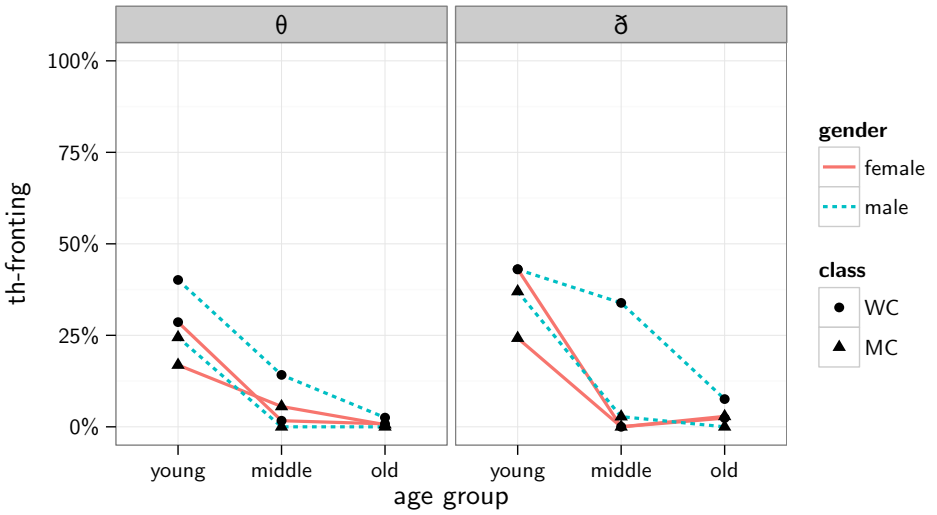


Table 6. Percentage of TH-fronting across age, gender and social class

Voiceless	female WC	Male WC	female MC	male MC
young	29%	40%	17%	24%
	N = 500	N = 760	N = 463	N = 675
middle	1%	14%	6%	0%
	N = 168	N = 296	N = 233	N = 50
old	1%	3%	1%	0%
	N= 124	N = 275	N = 166	N = 87
Voiced	female WC	Male WC	female MC	male MC
young	45%	43%	24%	37%
	N = 292	N = 386	N = 260	N = 311
middle	0%	34%	0%	3%
	N = 60	N = 127	N = 128	N = 36
old	2%	8%	3%	0%
	N = 84	N = 132	N = 105	N = 60

However, the middle age group shows an interesting gender divide within the working class (WC) speakers. WC males are the only speakers of this generation who show a considerable percentage of fronting. Although this may be surprising from the point of view of expected female-led change, TH-fronting has been found to be male-led in many previous studies of the variant (Williams and Kerswill 1999; Llamas 2001; Przedlacka 2001; Schleef and Ramsammy 2013). This is possibly due to the covert prestige and urban connotations of this variant (Trudgill 1988).

Older WC males show a small amount of fronting (8%) for voiced variants only, which is potential evidence of the origins of this variant in Manchester (Table 6). The data are consistent with a situation where TH-fronting originated in Manchester as a change affecting voiced variants, used sparsely by the now older WC males. WC males from the next generation propel this change and extend it to voiceless variants. Today, the youngest generation have continued this trend, with differences between voiced and voiceless frequencies on the decrease. However only WC males display next to no difference

between /θ/ and /ð/ frequencies in the youngest age group, indicating again that this is the social group leading the change.

It may be somewhat surprising that for such a socially salient variable, TH-fronting is not subject to style-shifting in this dataset, with the majority of speakers behaving fairly consistently across casual, careful, wordlist and minimal pair styles. However, previous studies have also found this lack of style-shifting, and in some cases, increased fronting in formal and reading styles (Robinson 2005: 189; Stuart-Smith et al. 2007: 236; Schleef and Ramsammy 2013). If TH-fronting is truly the fastest spreading phonological change in British English, then perhaps the social stigma associated with the variable has also rapidly changed in speakers' assessments, with the youngest generation being less aware of the non-standard connotations than their parents or grandparents. Speakers who are aware of and acknowledge the stigma of fronting avoid it completely; speakers who use it, make no attempt to style-shift.

As the model in Table 5 above shows, variation in TH-fronting is also subject to linguistic factors, the effects of which are plotted in Figure 6. With regard to position in the word, we are more likely to find fronting in word-medial position, e.g. *brother*, *catholic,* than in initial or final position (also found by Stuart-Smith and Timmins 2006). As seen previously in Figure , fronting is more likely in voiced segments such as *smooth,* over voiceless segments such as *tooth,* again, a result which corroborates findings in previous studies (Kerswill and Williams 1999; Llamas 1998; Britain 2003). Figure 6 also shows that a following consonant favours fronting, whereas a following vowel disfavours it (see also Clark and Trousdale 2009; Schleef and Ramsammy 2013). This result is perhaps unsurprising, given phonological evidence that a following consonant results in the (th) being placed in the coda, and that processes of neutralisation are known to occur in coda position (Kiparsky 2008).

Figure 6. Linguistic effects of voicing, following segment and position on TH-fronting

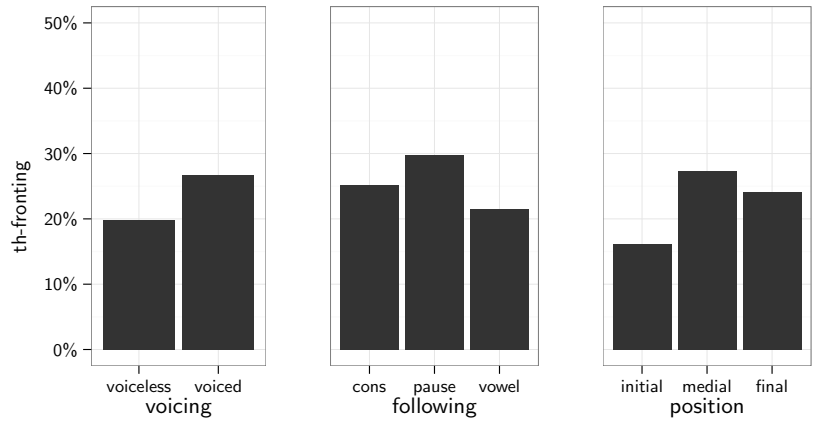


Table 7. Linguistic effects on TH-fronting

	initial	medial	final		voiced	voiceless
Position	16%	27%	24%	voicing	27%	20%
N	2311	2393	1100	N	1995	3819

	cons	pause	vowel
following	25%	30%	21%
N	1209	171	4309

Medial position shows a significantly higher proportion of fronting than both initial and final position, and in turn final position is significantly higher than initial position (confirmed by switching the intercept; $p = 0.0078$). Differences in voicing are highly significant, with voiced /ð/ more likely to be fronted than voiceless /θ/, which is consistent with the suggested diachronic development of the change. A following pause, i.e. phrase-final (th), is significantly more likely to result in a fronted variant than a following vowel or consonant.

3.3 T-glottalling

T-glottalling, the phonological process whereby /t/ is replaced by a glottal stop in non-initial position, has been reported for accents all over the UK in recent years.[8] An initial analysis revealed that the variation in Manchester is between canonical [t] and full glottal replacement, with little in the way of pre-glottalised variants found in the South[9]. T-glottalling occurs commonly in word-final position following vowels (e.g. *cat*), in consonant clusters with sonorants word-finally and medially (e.g. *fault, centre),* and when preceding a syllabic consonant (e.g. *little*). Glottalling is found less frequently, though increasingly, in intervocalic foot-medial position (e.g. *better;* henceforth referred to as intervocalic). Although the process has been described as heavily stigmatised in the past (Milroy et al. 1994: 4), results from more recent studies support that negative connotations are declining and today only exist for intervocalic glottalling (Fabricius 2000; Foulkes and Docherty 2007).

In our dataset, tokens which were excluded from collection included plurals (e.g. *cats*), 3rd person singular -s (e.g. *gets*), and those preceding a /t/ in the following word (e.g. *get together*), which cannot be reliably determined by impressionistic means. Also excluded were /t/s which never undergo glottalling in Manchester, such as those which are part of word-final consonant clusters with non-sonorant consonants (e.g. *kept),* in a word-medial /tr/ sequence, (e.g. *petrol)*, and /t/s in the onset of a stressed syllable such as *attack, Italian* (although *–ee/-oo* words such as *tattoo, canteen* were considered; discussed below).

8 On this issue, see the contributions in Minkova (ed. 2009).

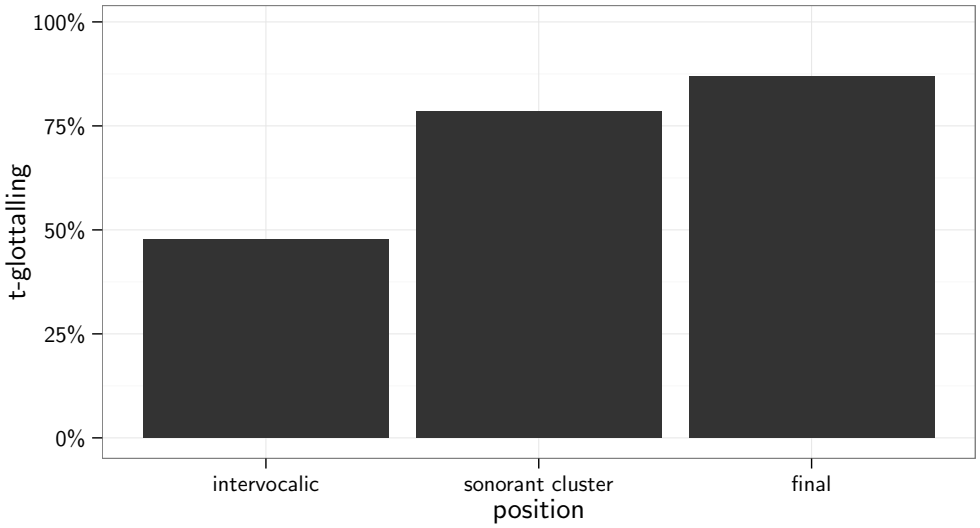
9 /t/ to /k/ before syllabic /l/ is also found in Manchester so *little* can become *likkle*, and *hospital hospikal*. This is rare, highly stigmatised and likely to fade in the next few generations.

Figure 7 shows that, as previous descriptions of other dialects have shown, intervocalic glottalling in Manchester is the context which shows the lowest rate of application, with word-final /t/s showing the highest rate. /t/s which are part of a cluster with another sonorant, such as *wanted,* fall in between. The rest of this analysis focuses on word-final postvocalic /t/ (e.g. *cat*), and intervocalic /t/ (e.g. *butter*).[10]

Table 8. Coefficients of a generalised mixed-effects logistic regression for word-final T-glottalling, with speaker as a random effect (sd= 1.364).

	Estimate	Std. Error	z-value	p-value
Intercept (following cons.)	4.6169	0.4252	10.8590	<0.0000
Age	-0.0393	0.0098	-4.0110	0.0001
following pause	-1.0829	0.1819	-5.9540	<0.0000
following vowel	-1.1782	0.1403	-8.4000	<0.0000

Figure 7. T-glottalling across different phonological contexts



Generalised mixed-effects logistic regression analyses were carried out separately on final and intervocalic tokens, with 3,727 tokens for word-final (t) and 2,043 tokens for intervocalic (t). Table 8 shows the results of the regression on word-final /t/, which finds age and the following segment to be the only significant predictors. Age, as expected, is the

10 Although not explored in this chapter, medial /t/s which are part of consonant clusters show interesting patterns and realisations. For example, inversely to the n-flap pattern found in American English, where *twenty* may be pronounced /twe.ni/ with no audible /t/, in Manchester the glottal may win out, producing something like /twe?i/, with no audible /n/.

strongest predictor, with older speakers showing less tendency towards a glottal articulation (as can be seen from the negative estimate). The model does not find gender or social class to be significant predictors overall, and this holds when running the model with individual age groups and interactions. This pattern is consistent with word-final T-glottalling being an advanced change nearing completion, operating across different social groups in the community.

The results of the intervocalic glottalling regression are shown in Table 9. Age, gender and social class make up the significant predictors of this model. Again, age is the strongest predictor, with older speakers less likely to show a glottal stop, as can be observed by the negative estimate. Similarly, females and MC speakers are less likely to glottalise than their male and WC counterparts. The fact that gender and class are not significant predictors of word-final glottalling, but are for intervocalic glottalling is not unexpected given that the latter is a more recent change, with some social groups ahead of others. This result, i.e. the female lag and lower rates by MC speakers, is likely related to the fact that intervocalic glottalling is more stigmatised than word-final glottalling. This trend is plotted in Figure 8; the numbers are reported in Table 10.

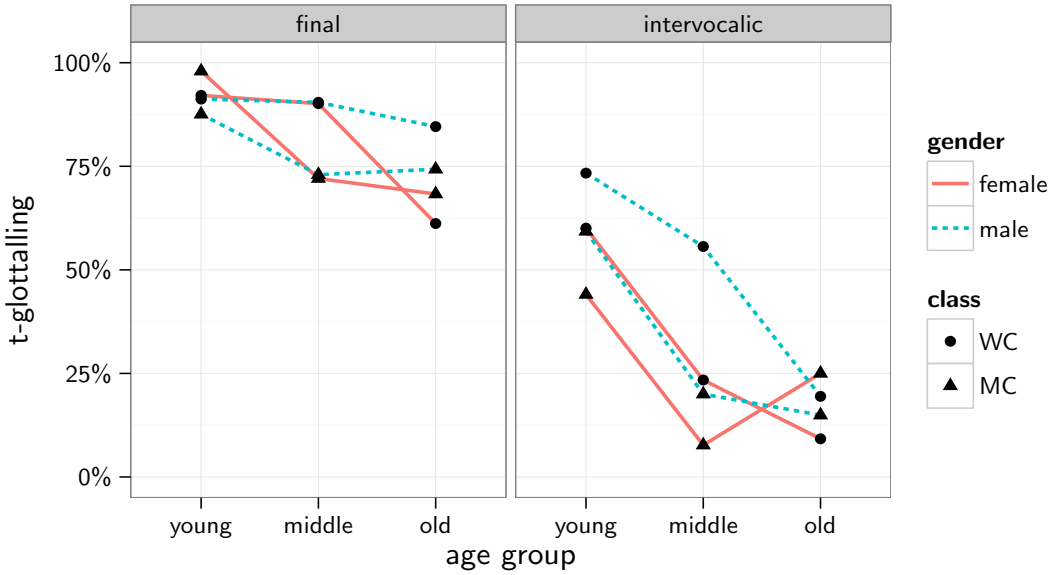
Table 9. Coefficients of a generalised mixed-effects logistic regression for intervocalic T-glottalling, with speaker as random effect (sd = 1.1492).

	Estimate	Std. Error	z value	p-value
Intercept (male, WC)	2.3324	0.3549	6.5710	<0.0001
Age	-0.0529	0.0074	-7.1210	<0.0001
gender (female)	-0.7088	0.2854	-2.4840	0.0130
class (MC)	-0.6506	0.2867	-2.2690	0.0232

Figure 8 furthermore shows the social patterning of glottalling, split into final tokens (left) and intervocalic tokens (right). Both processes are clearly distributed with regard to age; the older the speaker, the less likely glottalling is. Age aside, the two phonological contexts are distributed differently in social terms. Although final glottalisation tends to be used more by WC speakers and males, the differences are very small. The lack of gender difference for all but the oldest generation for final (t) shows that women have now caught up with men in the change and suggests that the stigmatisation of glottalling in this context is fading.[11] In fact, young MC females show the highest rates, although this could be due to age-grading; we see the same effect for H-dropping in this dataset.

Figure 8. T-glottalling in final and intervocalic contexts across social categories

[11] Though we are aware that, strictly speaking, the results presented here are evidence of use rather than stigmatisation or social evaluation.



Intervocalic rates show similar social patterning to the TH-fronting data: WC males in the middle generation are far ahead of everyone else in that age group, with MC females lagging behind. In fact, in the middle age group, WC males are the only speakers to show a considerable amount of intervocalic glottalling. This suggests that the change in this phonological context began in this social group, and is still led by them, with the other social groups moving in the same direction by the youngest generation.

The data are consistent with a situation where T-glottalling started as a phonological process affecting codas, e.g. the (t) in *cat*, before advancing to all non-stressed (t)s such as intervocalic *butter,* resulting in gender differences only within the generation in which the change really began to gain momentum. The advancement of a phonological rule to include more contexts may explain why some Mancunian speakers glottalise in the so-called *–ee/-oo* environments such as *tattoo, canteen, eighteen* (Harris and Kaye 1990: 271). Glottalling in this context is attested in the dataset, but is rare. As such tokens bear stress, this is likely an advanced stage of glottalling. In other dialects, such as those in the United States, /t/ cannot be reduced in the *–ee/-oo* set, i.e. T-flapping would not occur in this context. Over time, a phonological process may advance through the prosodic hierarchy, applying to more inclusive environments (Bermúdez-Otero 2010). This can be seen in the Manchester data, as the differences in age groups implies that glottalling started as a process targeting /t/ in the coda (i.e. final position) and over time advanced to all unstressed positions (e.g. intervocalic position). Glottalling in the *–ee/-oo* set shows the next stage of this process, that is, lenition in stressed position.

Table 10. Percentage glottaling for final and intervocalic contexts across social categories.

final

	female WC	male WC	female MC	male MC
young	92%	92%	98%	88%
	N = 648	N = 759	N = 564	N = 723
middle	90%	90%	72%	73%
	N = 162	N = 232	N = 186	N = 37
old	59%	78%	68%	74%

N = 211	N = 268	N = 142	N = 105

intervocalic			
female WC	male WC	female MC	male MC
60%	73%	45%	60%
N = 324	N = 365	N = 233	N = 411
23%	56%	8%	20%
N = 47	N = 151	N = 130	N = 30
11%	20%	24%	15%
N = 79	N = 150	N = 75	N = 67

Table 11. Word-final glottalling rates by following segment

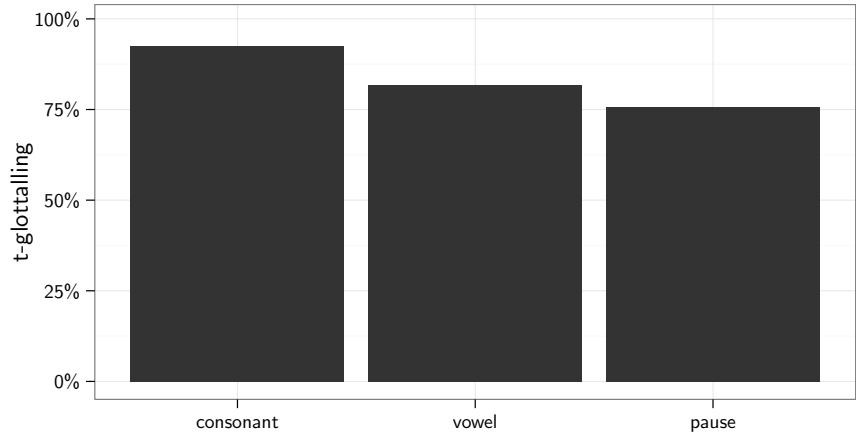
	consonant	pause	vowel
following	93%	76%	82%
N	1649	480	1185

Figure 9 shows that a word-final /t/ is more likely to be realised as a glottal stop when the following segment is a consonant (the difference between vowel and pause is not significant). This is not surprising, as some studies claim that word-final pre-consonantal [t] is rare in most varieties of British English (Foulkes and Docherty 2007), glottalling in this context is even found to be common in RP (Fabricius 2000).

Table 11. Word-final glottalling rates by following segment

	consonant	pause	vowel
following	93%	76%	82%
N	1649	480	1185

Figure 9. Word-final T-glottalling by following segment



T-glottalling is highly sensitive to style-shifting, as can be seen Figure 10, with rates dropping dramatically between interview and wordlist styles[12] in both phonological contexts. All social groups pattern in the expected way, shifting in the same direction, with WC males showing the least amount of style-shifting. It is interesting to note that, although intervocalic glottalling and TH-fronting are both said to be part of the set of "urban youth norms" (Williams and Kerswill 1999) and pattern similarly in social terms, they show different effects of style, with (th) displaying little style-shifting (cf. section 3.2 above). This is possibly related to the fact that glottalling is a process of lenition which speakers have more control over, whereas fronted variants result in a merger for some speakers and it may be difficult for them to switch between standard and non-standard forms. Glottalling, on the other hand, is an allophonic variant of /t/, as it is not a phoneme in its own right, unlike the fronted /f, v/ variants which are independent systemic segments in English.

12 Glottalling cannot be included in minimal pairs, and casual and careful interview styles showed no difference, hence only two style categories are recognised for this variable.

Figure 10. T-glottalling in interview and wordlist styles

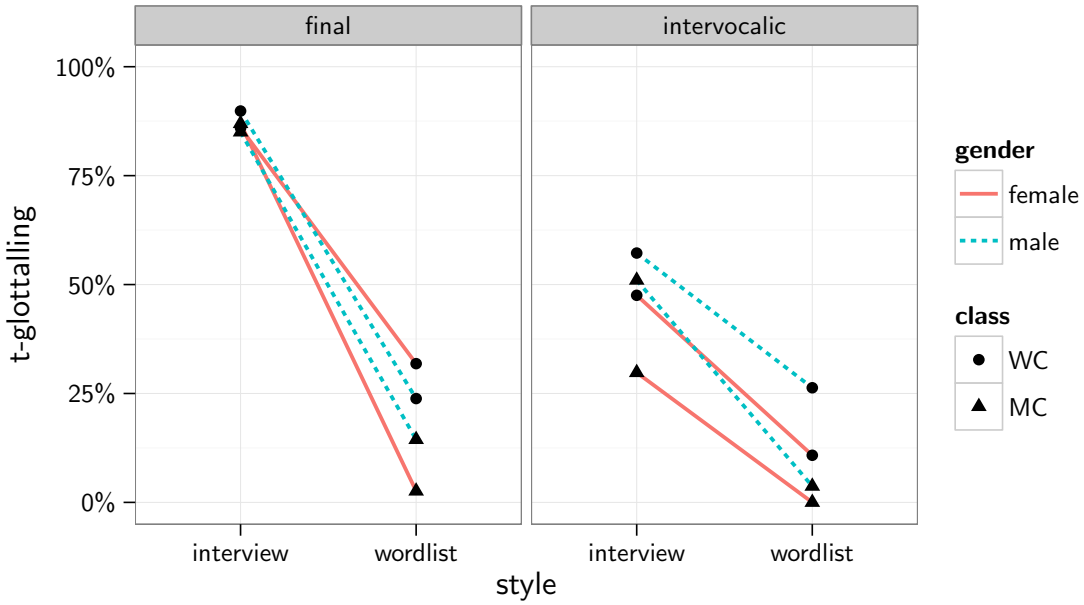


Table 12. Style-shifting rates in word-final T-glottalling

final				
	female WC	male WC	female MC	male MC
interview	85%	89%	88%	86%
	N = 1021	N = 1259	N = 892	N = 865
wordlist	21%	32%	3%	13%
	N = 297	N = 286	N = 89	N = 216

Table 13. Style-shifting rates in **intervocalic** T-glottalling

intervocalic			
female WC	male WC	female MC	male MC
48%	57%	31%	52%
N = 450	N = 666	N = 439	N = 508
13%	33%	0%	3%
N = 40	N = 43	N = 12	N = 30

4. Concluding remarks

The results reported above show that Manchester is participating fully in the two major consonantal changes sweeping across dialects of British English, i.e. T-glottalling and TH-fronting. H-dropping is a stable variable in Manchester; it is not receding, in contrast to

Southern dialects such as Milton Keynes and Reading, but in common with other Northern areas, such as Hull (Williams and Kerswill 1999). Not surprisingly, the social patterning of these three variables in Manchester is similar to that found in previous studies. At the same time, the large dataset at our disposal has enabled us to conduct a robust multivariate analysis of both social and linguistic factors, and obtain results, e.g. on the role of the grammatical category of the word, previously unavailable for British English dialects.

Future work will address the issue of potential linguistic differences between different parts of the city. Given that Manchester is surrounded by distinctive dialect areas, such as Liverpool and traditional Lancashire dialects to the north and west, Yorkshire to the north-east, and Cheshire to the south, it may well be that those disparate linguistic influences have resulted in linguistic differences between different areas in the city. However, it is not enough to show that speakers from different areas sound different, as social class is likely to be a confounding factor. Sociolinguistic studies of US cities have shown that in most cases, geographic differences within the same speech community are in fact due to social class differences, with geographic differences resulting from the concentration of different social classes in different parts of town. In other words, social class usually turns out to be the primary source of linguistic differentiation within the metropolis, and, consequently, speakers with similar socio-economic backgrounds usually pattern similarly linguistically, regardless of the part of town they grew up in. Therefore in order to test the role of different areas within Manchester as an independent factor, it will be important to control for social class.

Finally, the results reported above are based on the speech of White British Mancunians. In order to obtain a more complete picture of the sociolinguistic variation in Manchester English, ethnicity, a potentially important factor in this multicultural community, would need to be taken into account as well (see Drummond, this volume). We are currently exploring its role by analysing variation in the two largest ethnic minority groups in Manchester, i.e. Pakistani-Bangladeshi and Black Caribbean, and comparing it with the patterns found in the White population discussed above. It will be particularly interesting to see if ethnic effects remain constant across different types of variables and changes, such as the three consonantal variables analysed above or vocalic changes such as back vowel fronting (Baranowski 2014b), which show different social conditioning within the white population, and which may be operating at different levels of social awareness.

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