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Abstract

This paper examines data from three communities in Auckland, New Zealand's largest and most ethnically diverse city. The purpose is to determine whether some of the surprising sociolinguistic patterns emerging in communities where there has been extensive immigration generalise to other, similar urban areas.

We examine the realisation of 'the' prevocally (N=747): Standard English prescribes [ði], but [ðə] is generalised for many speakers and this generalization typifies many contact varieties of English. Our research confirms that this variant is a diagnostic of highly mixed communities; it occurs principally in the speech of L1 speakers of English exposed to large numbers of L2 English speakers in the two preceding generations. However, we do not find young men leading the change as they do in London. Our analysis suggests that closer scrutiny of the phonetics of unstressed vowels (usually of little interest in variationist sociolinguistics) is warranted, as the quality of these too and how they interact with other vowels in the system may be subject to intergenerational change.

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Miriam Meyerhoff, Alexandra Birchfield, Elaine Ballard, Helen Charters &
Catherine Watson

1 Introduction

This paper examines data from three communities in New Zealand's largest and most ethnically diverse city, Auckland, to determine whether previous results from communities where there has been considerable migration generalize to other urban areas where there is no ethnic majority.

We examine the realization of *the* prevocally (N=747): Standard English prescribes [ði], but [ðə] is generalized for many speakers and this generalization typifies many contact varieties of English. Our research confirms that this variant is a diagnostic of highly mixed communities; it occurs principally in the speech of L1 speakers of English exposed to large numbers of L2 English speakers in the two preceding generations. However, we do not find young men leading the change as they do in London. Our results suggest that in the early stages of change, linguistic constraints are significant, but as an innovation diffuses through the community, more general linguistic principles are important.

2 Realization of the English Definite Article

Prescriptively, English has two allomorphs of the definite article, [ði] before vowels and [ðə] elsewhere (see constructed examples in (1) and (2)). The third author of this paper confirms that this was the rule taught to her when she started school in New Zealand (as a native speaker of Cantonese) in the 1970s.

- (1) a. [ði æpl] 'the apple'
b. [ði endlɪs dɪskʌʃn] 'the endless discussion'
c. [ði ɒnə.ɪ mɛmbə] 'the honorary member'
- (2) a. [ðə pipl] 'the people'
b. [ðə lɪŋgwɪstɪks klɑs] 'the linguistics class'
c. [ðə juʒl sʌspɛkts] 'the usual suspects'

The literature attests to some variation in this. Developmental variation seems to be very important, that is L1 speakers up to the age of 4-5 tend to generalize [ðə] (Newton and Wells 1999, Gaskell et al. 2003) so that you get things like (3):

- (3) a. [ðə (?)ɪglu]
b. [ðə (?)ɛndʒɪm]

There is an option of glottal epenthesis in such cases, however in this study we have not looked at the distribution of glottals.¹ Second language speakers of English of all ages are reported to generalize [ðə] before vowels, and the generalization of [ðə] before vowel initial Ns is also attested as a feature of contact varieties of English in North America, the United Kingdom, South Africa, in Asia and in the Caribbean (Fox 2015:151-153 reviews this literature).

2.1 Generalization of [ðə] in Multicultural London English

Fox (2015) documents the generalization of [ðə] in London English where, as with many of the features that have been studied in the Multicultural London English project, the change appears to

¹ Although this option seems to be pervasive, there is limited literature on the distribution of glottal stops word-initially, Racz (2012).

be led by what is (sociolinguistically speaking) a surprising group of speakers. The highest frequencies of these incoming forms are found in the speech of young Bangladeshi males and young Anglo males are following, with young female speakers lagging. Cheshire (2011, 2013) examined the use of [ðə] before vowels in their larger corpus of inner-city London English, and they corroborated Fox's finding. This generalization has also been reported as a feature that persists in the speech of 3rd generation descendants of Italian migrants to the UK. This fact, in conjunction with the patterns in the Multicultural London English project lead Cheshire and her colleagues to conclude that this is a feature of group second language acquisition. People growing up in a community like inner city London, where there is no longer any ethnic/ethnolinguistic majority, are being exposed to a large number of different input varieties from a very wide feature pool (Mufwene 2001, Aboh & Ansaldo 2006). In London, Cheshire and her colleagues have suggested that this is what leads to the emergence of "ethnically neutral" forms (Cheshire et al. 2013).

In the next section, we explain why we chose to investigate the realization of the definite article in the speech of Aucklanders in New Zealand.

3 The Auckland Voices Project

Most of the work that has been done on New Zealand English has dwelt on the English spoken in Wellington and Christchurch. Our project focuses on the English spoken in Auckland, New Zealand's largest city. Figure 1 shows that the population of Auckland has always been a significant proportion of New Zealand's total population,² consistently amounting to about 30% of the total population of New Zealand since formal Censuses have been taken (the apparent dip in the 1950s is an artefact of changes in where the boundaries for 'Auckland' were drawn). This is one of the reasons Auckland is an interesting field site. Demographically, it seems clear that what constitutes New Zealand English has been, and will continue to be, defined by the sheer number of people in Auckland.

The non-parochial reason why Auckland is of interest to sociolinguistics is that because there have been very high levels of migration to Auckland in recent decades (Aucklanders born overseas = 30%; New Zealand as a whole = 19%), Auckland constitutes a good proving ground for replicating or checking on some of the findings that have come out of the Multicultural London English project. Like many urban centers world-wide, there is also extensive internal migration, so well over half the people who live in Auckland were not born there.

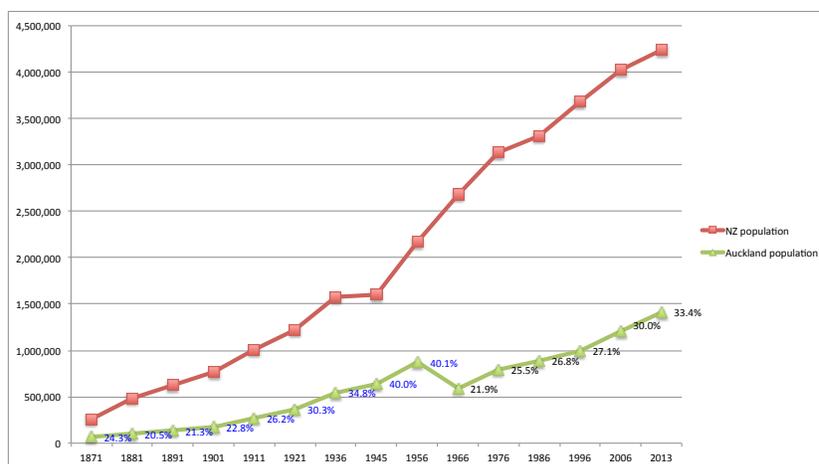


Figure 1: Population of New Zealand (top line) and population of Auckland as percentage of total (lower line). Data sources: stats.govt.nz Censuses and NZ Official Yearbooks.

² The Māori name for Auckland, Tāmaki Makarau, can be translated as roughly, *Tāmaki, having many lovers*. This is because even in pre-European times the dual harbours and volcanic soil made it a desirable and therefore populous location.

The Auckland Voice Project is comprised of three sub-corpora (one of oral history recordings, one of recordings with primary school children telling stories, and one corpus of sociolinguistic interviews), the findings in this paper are from the corpus of sociolinguistic interviews. These were done in three parts of Auckland between 2016 and 2018: in Titirangi in the west of Auckland, Mount Roskill (central) and South Auckland (Papatoetoe, Manurewa and Ōtara) which are much more ethnically diverse. We recorded in two age groups: speakers who are under 25 and speakers who are over 40.

All three areas have experienced average levels of migration since the turn of the century, but their ethnic and ethnolinguistic profiles are rather different. Titirangi is an area that has been and remains predominantly White. South Auckland had a large Māori population before Europeans arrived, and in the 1950s and 1960s it was where most of the Pacific Island communities moved to (especially migrants from the Cook Islands, Samoa and Tonga). There is continued ongoing migration from Samoa and Tonga which refreshes those communities. Mount Roskill was largely farmland until about the 1950s, and it was mainly White initially, however, in recent years it has changed and become much more mixed, to the point where there is no ethnic majority in the area now. In other words, Mount Roskill is crucial in that it resembles the sociolinguistic context of the inner London areas where Multicultural London English has emerged. Our contrast between a community that has *become* ethnically mixed and one that has been ethnically mixed for some time allows us to directly explore the question of whether changes which might be taking place are a consequence of the local English being shaped from a multilingual feature pool or whether it is a distinctive feature of London.

We recorded interviews with 64 Aucklanders all of whom are L1 speakers of English. They may have another co-first language, but they are not second language speakers of English, so our results are not shaped by acquisition issues. The conversations we recorded lasted between an hour and four hours and we mainly used local interviewers, who had grown up in those communities, or, where this was not possible, were reasonably well-matched on sociodemographic measures.

4 Analysis and Results: The Generalization of [ðə]

The second author took primary responsibility for the extraction and coding of approximately 1700 tokens of the definite article before a vowel. The dependent variable was the use of the centralized vowel instead of the (prescribed) tense vowel, i.e. [ðə]³ vs [ði]. Unclear tokens were excluded, e.g. cases the definite article occurred before a high tense vowel since this often results in ambiguous forms such as [ði:ziəst].

The independent variables modelled were: the following vowel, stressed versus non-stressed NP (examples 1-3), and three social factors – age of the speaker (older versus younger), gender of the speaker, and community.

1. It's not about the individual, it's more about how [...] we're gonna keep the reputation of the school. (Arush, younger Mount Roskill)
2. And I'm thinking, the other two have got away with a few things, so I can try that. (Ellen, older Mount Roskill)
3. Yep, this was the original and the rest were mainly farms. (Jemaine, younger South Auckland)

The following vowel was coded as it was uttered rather than the vowel class it might canonically have been considered to belong to (though mostly realizations of the following vowel were as expected), because we are interested in exploring possible phonetic conditioning of the definite article. The analysis of following vowel was done auditorily and while this introduces the possibility of listener bias, there was spot checking of coding to ensure agreement. The canonical New Zealand English vowel space is shown in Figure 2, and the vowel space for our older and younger speakers in all three communities (see Watson et al. 2018 for the statistical methods allowing the presentation

³ We use the symbol [ə] to represent the centralized vowel in New Zealand English. This symbol is used for schwa and the vowels in the KIT class of words.

TITIRANGI		SOUTH AUCKLAND		MT ROSKILL	
	N=329		N=260		N=385
Input prob.	0.02		0.06		0.008
Following segment					
thought	0.95	<i>fleece</i>	0.92	<i>fleece</i>	0.98
<i>fleece</i>	0.84	choice	0.73	goat	0.65
trap	0.78	thought/nurse	0.69	mouth/face	0.64
face	0.76	<i>square</i>	0.67	price	0.62
<u>start</u>	0.75	mouth	0.67	<i>square</i>	0.58
kit/schwa/nurse	0.62	dress	0.55	thought	0.56
price	0.60	kit/schwa	0.48	dress	0.50
lot	0.29	price	0.45	choice	0.45
choice	0.28	lot	0.41	nurse	0.42
<i>near/square/mouth/goat</i>	0.19	trap	0.41	kit/schwa	0.34
dress	0.08	face	0.4	trap	0.24
<u>strut</u>	0.05	mouth	0.15	lot	0.21
		<u>strut/start</u>	0.06	<u>strut/start</u>	0.08

Table 3: Effect of following segment on older speakers' use of [ðə] in three Auckland communities.

TITIRANGI		SOUTH AUCKLAND		MT ROSKILL	
	N=150		N=297		N=347
Input prob.	0.53		0.88		0.78
Following segment					
<i>fleece/dress/near/square</i>	0.95	<i>fleece</i>	1	<i>fleece</i>	0.95
choice	0.87	<i>square</i>	0.87	face	0.72
trap	0.68	lot/thought	0.77	choice	0.70
<u>start</u>	0.66	mouth/face	0.73	thought/nurse	0.70
mouth	0.58	price	0.61	<u>start</u>	0.63
lot	0.41	choice	0.51	lot	0.61
goat	0.41	trap	0.44	dress	0.53
thought/nurse	0.31	kit/schwa	0.39	trap	0.53
kit/schwa	0.29	<u>start</u>	0.36	goat	0.43
price	0.24	goat	0.31	face	0.42
<u>strut</u>	0.19	dress	0.22	kit/schwa	0.39
face	0.17	<u>strut</u>	0.22	<i>square</i>	0.28
				<u>strut</u>	0.15
				mouth	0.04

Table 4: Effect of following segment on younger speakers' use of [ðə] in three Auckland communities.

Table 3 shows that the input probability for the older speakers in Titirangi, South Auckland and Mount Roskill differ considerably. The following segment is shown in terms of the more familiar key words in Wells' (1982) lexical sets, but recall that our coding was based on an acoustic assessment of the phonetic realization of the following vowel, not the expected phonemic quality. The table highlights in *bold italics* where the following vowel was a high front vowel, but the resolution of the hiatus was clear enough that we felt confident that we were coding the vowel in the definite

article. These are cases where there would be a feature clash between the prescribed vowel in [ði] and the initial vowel in a word like /izi/ ‘easy’. Underlining is used to highlight cases where the following vowel has an initial low central vowel (START and STRUT are generally considered to only differ in length in New Zealand English, see Figure 2). These are contexts in which there might be a feature clash between the generalized central vowel in [ðə] and the immediately following vowel.

For most of the older speakers in Table 3, it seems clear that there is some sort of dissimilatory effect, such that [ðə] more likely to be generalized before high front vowels but is strongly disfavored before another low, central vowel. The exception to this is the higher probability of [ðə] before a START vowel among older Titirangi speakers, which we comment on further in section 4.2.

Table 4 shows, firstly, that for the younger speakers, the input probabilities are very different. This gives a measure of change that has been taking place across the city. The same highlighting of the following high front vowels and low central vowels seems to show that the tendency for [ðə] to occur with a following high front vowel has become more clear. The numbers of tokens of the definite article before a vowel is quite low among younger Titirangi speakers and this necessitated combining DRESS with FLEECE and also NEAR and SQUARE; the onset for NEAR and SQUARE is well-known to be high and front in New Zealand English, see Watson et al. 2018, as in Figure 2, but also Hazenberg 2017). This again suggests a dissimilation effect. Whether it warrants being associated with the obligatory contour principle (Goldsmith 1979, perhaps more accurately understood as an optional contour preference in variationist terms, Guy & Boberg 1997) or as a preference for euphony or articulatory ease is an open question, but the general observation is clear.

4.2 Some Comments on Change with STRUT and START

Watson et al. (2018) analyzed the read speech collected in the Auckland Voices project and found, as with previous studies of New Zealand English (Maclagan 1982, Watson et al. 1998, Warren 2006), that there was no significant difference in the F1 and F2 values for strut and start. However, recent, independent work on Auckland English by Hazenberg (2017) suggests that there may be change taking place and that for some speakers of Auckland English there is a significant difference in F1. Indeed, the possible re-separation of strut and start was foreshadowed in Watson et al. (2000) and Warren (2006) who found evidence that there might be greater separation of the vowels in continuous speech (rather than read speech) and among younger speakers, respectively. Hazenberg (2017) found that STRUT vowels were significantly raised relative to START in the conversational speech of 45 Aucklanders (recorded in 2013-2015) and that this raising was most marked among younger speakers and queer speakers. Moreover, Hazenberg (2017) observed that the realizations of START were much more homogeneous than the realizations of STRUT among the different cohorts of speakers he recorded. Based on this, and the realization of STRUT across the cis-gendered and trans-gendered speakers of different ages that he sampled, he concluded that the realization of STRUT is available as a means of enacting some kinds of gender identity in Auckland.

Among both the older and younger Auckland Voices speakers (Table 3 and 4), following STRUT consistently disfavors the generalization of [ðə] while the effect of following START is much more variable. This would be predicted if the use of [ði] were also favored for dissimilation reasons, just as the use of [ðə] before FLEECE vowels is. The ongoing raising of STRUT renders it phonetically much closer to [ðə] than START is.

There are broader implications of this finding. Most analyses of English vowels do not look at the realization of unstressed vowels, as in function words like *the*. If we are correct in suggesting that the distribution of [ðə] is influenced by the quality of the following vowel, and if we are correct in suggesting that younger speakers exhibit a stronger dissimilatory effect with STRUT because STRUT has raised from START, then this suggests that the phonemic representation of *the* may be changing over time. The evidence that older speakers have a strong and consistent dissimilation effect with both following START and STRUT, but younger speakers have a clear dissimilation effect only for STRUT, suggests that the underlying vowel in *the* for younger speakers is more raised than the underlying vowel for *the* is with older speakers. That is, the older Aucklanders we interviewed may have a different phoneme associated with *the* than the younger speakers do. In line with this, we also note that the disfavoring effect of following KIT/schwa also appears to become more consistent among the younger speakers.

Further detailed analysis of the realization of vowels in conversational speech in all three Auckland Voices communities may shed light on the extent to which the distribution of [ðə] is conditioned by the phonetics of the following vowel.

5 Conclusion

We suggested at the outset that the Auckland Voices corpus was designed to determine whether some of the sociolinguistically surprising findings emerging from the Multicultural London English project emerge as a consequence of the extreme levels of ethnic mixing typical in inner London and communities like Mount Roskill, or whether it was a distinctive feature of London alone. Our exploration of the use of [ðə] before vowels in Auckland English suggests that there is change taking place, and the use of [ðə] is becoming more typical before vowels in all three communities across Auckland. However, we did not find evidence that there was any significant gender effect. When we drill down into the data of individual communities, to the extent that we find any effect for gender, young women seem to be leading the change, as would be predicted (Labov 2000).

Conversely, if dissimilation is an important factor constraining the distribution of [ðə], then it would seem that the generalization of the phonetic effect of the following segment as a trigger for dissimilation is more advanced in precisely the ethnically mixed communities that the Multicultural London English project have found to be leading change in London. This pattern is clearer in the older speakers in South Auckland and Mount Roskill with younger Titirangi speakers starting to follow, adopting the same phonetic principles as a basis for making sense of the variability present in the larger speech community.

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