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First Dialect Retention of Mobile Speakers Regarding New Zealand English Vowels

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Az első dialektus megtartásának vizsgálata külföldön élő új-zélandi beszélők kiejtésében.
Absztrakt: Jelen tanulmány az elsőként elsajátított dialektus megtartását vizsgálja külföldön élő új-zélandi beszélőknél az elöl képzett, rövid magánhangzók esetében, melyek kiejtése stabil és szembeötlő jegye ennek a nyelvváltozatnak. Az akusztikai vizsgálat során az F1 és F2 értéket mértük három tartósan külföldön, és három, születése óta Új-Zélandon élő beszélőnél, majd összehasonlító elemzést végeztünk. Az eredmények azt mutatják, hogy a külföldön élő beszélők kiejtése megváltozik, azaz hasonló lesz az új lakóhelyükön használt sztenderd kiejtéshez. E folyamat során a vizsgált magánhangzók tipikus új-zélandi kiejtése kevésbé jellegzetessé válik, de nem tűnik el teljesen, és így egy, a sztenderdhez közelebb álló kiejtési forma jön létre, mely szignifikáns különbséget mutat a külföldön és Új-Zélandon élő beszélők formánsértékei között. Ez arra utal, hogy míg a beszélők alkalmazkodnak az új dialektushoz a beszélőközösségbe való könnyebb beilleszkedés érdekében, új-zélandi identitásukat is igyekeznek megtartani.

Abstract
The present study examines first-dialect retention in the speech of expatriate New Zealand speakers through the acoustic analysis of the short front vowels, a stable and salient feature of this variety. The F1 and F2 values were measured for three expatriate and three lifelong New Zealand residents, followed by a comparative analysis. The results show that expatriate speakers converge towards the target dialect by altering their pronunciation. In this process, the New Zealand realisation of these vowels is softened in their speech but does not disappear completely, resulting in a realisation closer to the standard pronunciation of the dialect of destination, with a significant difference between the formant values of expatriate and lifelong New Zealanders. The findings indicate that while the speakers accommodate to the new dialect which they are exposed to in order to fit in the speech community, they also aim to keep their original New Zealand identity, fulfilling two goals at the same time.

1. Introduction

Second-language and second-dialect acquisitions are widely researched topics nowadays due to the high geographic mobility of speakers. As Graddol (2006) states, the number of international migrants doubled between 1960 and 2000, and this tendency continues, resulting in changes in the linguistic mix of the target countries. Therefore, language contact situations are very common, providing the opportunity to do research on speakers' ability to acquire a second language. However, speakers often go to live and work in a country where a different dialect of the same language is spoken. Such situations lead to dialect contact and/or the acquisition of a second or new dialect.

So far, research has mainly focused on the process of how the new dialect is acquired, concluding that speakers adopt some new features rather than the whole linguistic system of the second dialect, and realisations vary across contexts (Walker, 2014).

However, only a few studies have examined the retention of features of the first dialect after acquiring the new one. One of them is Bowie (2000), who found that stable features of the first dialect are more likely to be retained than features that are undergoing change. The present study addresses this issue by investigating whether the pronunciation of the short front vowels of New Zealand English (NZE) is retained by mobile speakers after spending considerable time outside New Zealand, and we hypothesise that speakers retain the pronunciation of these vowels because these are well-established features of NZE.

The short front vowels were chosen for analysis because their pronunciation is different in NZE compared to other dialects of English, and these are stable and characteristic features of this variety. For the sake of simplicity, we refer to these vowels by using keywords from Wells' lexical sets: TRAP, DRESS and KIT. These lexical sets show the pronunciation of the English phonemes and represent the words that historically have the vowel in the keyword. The realisation of these vowels (explained in section 2.3) is examined in the speech of six male New Zealanders. At the time when the recordings were made, three of them had spent their whole lives in New Zealand, while the others had moved to other countries and lived there permanently. The first and second formant values of the vowels were measured by using the Praat software (Boersma & Weenink, 2022) to determine if there is a difference in vowel quality in the speech of expatriate speakers compared to lifelong residents of New Zealand.

Based on the results, it can be stated that speakers neither replace nor keep entirely the New Zealand pronunciation of these vowels. Rather, the typical New Zealand realisation is softened and less emphasised in the speech of expatriates compared to lifelong New Zealand residents but is still present in their speech. These findings support evidence from previous observations in this area, and the softening of these unique pronunciation features is probably due to accommodation, that is the speakers' effort to make communication effective in the new community. However, these features are not completely lost because the speakers also want to preserve their national identity.

2. Theoretical background and hypothesis

2.1. Previous Research

According to Evans Wagner (2012), in studies of second-dialect acquisition (SDA) regarding adults, researchers do not take the age factor into consideration, probably because adult speakers and even adolescents are well after the critical period of language or dialect acquisition. Therefore, there are individual differences like interspeaker variation in their speech but no different stages to compare in their dialect acquisition. In spite of the observed interspeaker variation in SDA, general patterns were found for social factors. Bigham (2010) claims that instead of making qualitative changes, speakers change the range of variation in their speech. Similarly, Nycz (2013a,

2013b) observes a gradient change towards the second dialect. Walker (2014) states that longer exposure to the second dialect results in greater accommodation to the second dialect and that simpler changes are easier to acquire for mobile speakers compared to complex phonological features. As can be seen from the above discussion, studies have mainly focused on how and to what extent the second dialect is acquired by mobile speakers, and research seems to be scarce on the retention of the first dialect. The existing literature includes the work of Evans and Iverson (2007), who examine the pronunciation of mobile speakers and find that speakers maintain their original accent but modify it slightly to adjust it to the new dialect. In addition, Bowie (2000) examines the speech of mobile speakers and finds that stable features of the first dialect are more likely to be retained than features that are currently undergoing change.

2.2. Communication Accommodation Theory

Accommodation is also relevant from our point of view. According to Giles and Ogay (2007), Communication Accommodation Theory (CAT) suggests that speakers are able to change their linguistic behaviour to make social distance smaller or greater based on their intentions. Convergence means that speakers change their communication in such a way that their speech becomes more similar to the people's speech around them. Converging to a common linguistic style makes it easier to fit into the community and also makes communication easier and more effective. Specifically, phonetic convergence, as Lewandowski and Jilka (2010) explain, is the process whereby the pronunciation of interacting speakers becomes similar. Acoustic measurements provide evidence that acoustic convergence affects prosodic as well as segmental features affecting vowel formants, vowel duration and the voicing of vowels among others. However, convergence is not without drawbacks because it might result in the loss of personal or social identity. As Trudgill (1986) points out, initially short-term adjustments may lead to long-term changes in one's pronunciation.

Based on the above findings, we chose a stable feature of NZE, the pronunciation of the short front vowels, and hypothesise that expatriate speakers retain this feature in their speech with the remark that we expect minor changes in the realisation of these vowels. To prove our hypothesis, this feature was examined in the speech of expatriate New Zealanders and speakers who spent their whole lives in New Zealand. For a better understanding, a short explanation of the examined pronunciation features is given in the next paragraph.

2.3. New Zealand English Short Front Vowels

As Hay et al. (2008) explain, settlers in large numbers started to arrive in New Zealand in 1840, after the Treaty of Waitangi was signed and British sovereignty over New Zealand began. Settlers arrived in three waves, with the majority coming from the British Isles in all three waves. According to Trudgill (2004), the British settlers brought relatively high tokens of TRAP and DRESS along with lower realisations. While these vo-

wels lowered later in England, the high realisation came out as the winner in the process of new-dialect formation in the first 50 years of the development of NZE. Trudgill et al. (1998) state that later, TRAP started to raise further, occupying the phonetic space of DRESS. It was followed by the raising of DRESS, which occupied the phonetic space of KIT, and as the last step, KIT centralised and became a schwa-like vowel. Therefore, to avoid overcrowding in phonetic space, the short front vowels underwent a vowel chain shift, which was a push-chain and consisted of three sequential steps. The vowel chart in Figure 1 below illustrates this process: the dashed-dotted line is TRAP raising, the dashed line is DRESS raising, and the dotted line is KIT centralisation.

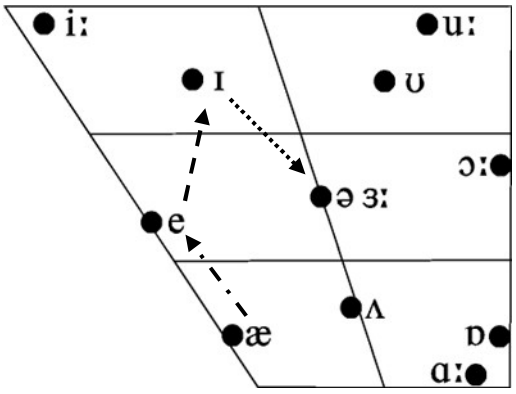

Figure 1: Short front vowel chain shift in NZE

As a result, in modern NZE, TRAP is pronounced as [ɛ], DRESS as [ɪ], and KIT [ə]. As Hay et al. (2008) explain, the pronunciation of the short front vowels is salient in NZE and also positively valued without any negative social connotation. Thus, the analysis of these vowels is ideal for the topic of the present study.

3. Methods

3.1. Data Collection

For the acoustic analysis, the speech samples of six male New Zealand speakers were collected. The speakers were divided into two groups as follows:

- Group 1: New Zealand speakers who had spent their entire lives in New Zealand;
- Group 2: mobile speakers of NZE who had left New Zealand and permanently settled in another country.

The following requirements were employed in both groups: (1) speakers were either born in New Zealand or moved there before the age of seven, the end of the critical period in language acquisition; (2) they were non-Maori New Zealanders because the pronunciation of Maori speakers might be influenced by their mother tongue, the Maori language; (3) they were adult speakers.

Speech samples for Group 1 were collected from contemporary New Zealanders. Informants were asked to speak about a random topic they chose, and a few alternatives

were provided to make their choice easier. There were three available male speakers in Group 1.

Speech samples for Group 2 were selected from the International Dialects of English Archive (IDEA), where speakers were also allowed to speak about a topic they chose, which makes the comparison between the two groups possible as speakers use the same register. Three male speakers met the requirements of Group 2 in IDEA.

Lifelong New Zealand speakers are referred to as LS, and expatriate New Zealand speakers as ES. In both groups, the speakers were named consecutively, such as LS1, LS2, etc. The relevant background data of the informants are provided in Table 1.

	Speaker no.	Place of birth	Age	Places of residence	Date of recording
Lifelong New Zealanders	LS1	Wellington, NZ	57	Wellington, NZ	2021
	LS2	Wellington, NZ	50	Wellington, NZ	2021
	LS3	Wellington, NZ	18	Wellington, NZ	2021
Expatriates	ES1	Christchurch, NZ	27	Johannesburg, South Africa; Illinois and Kansas, US	2004
	ES2	Darfield, NZ	36	London, UK; Sydney, Australia; Toronto, Canada	2007
	ES3	Gisborne, NZ	46	England, UK; Hong Kong, China; Sydney, Australia; California, US	2017

Table 1: Background data of the informants

3.2. Data Analysis

The analysis focuses on the realisation of the TRAP, DRESS and KIT vowels with special emphasis on differences between the pronunciation of speakers belonging to Groups 1 and 2. Words containing the vowels we examined were cut from the recordings, and the first and second formant values were measured by using the Praat (version 6.2.18) software (Boersma & Weenink, 2022). Point measurements were made at the steady state of the vowel around its centre and not close to its beginning or end to avoid the coarticulatory effects of the preceding or following sounds.

Only accented vowels were analysed because in NZE, there is no distinction between schwa and [ɪ] in unstressed syllables, and the analysis of such vowels would have led to false data in the case of the KIT vowel. Grammar words were also analysed if they were stressed. The phonemic context was variable and was not examined in detail, but vowels before [l] were excluded because, as Wells (1982) and Hay et al. (2008, 20) point out, in NZE, /l/ tends to be dark and greatly influences the preceding vowel. Bauer (1986)

states that l-vocalisation is frequently observed after front vowels: TRAP and DRESS neutralise in favour of TRAP while KIT merges with /l/. At least four tokens per vowel were analysed, and the list of the words containing the relevant vowels is given in Table 2. The analysed vowels are highlighted in italics and bold.

	TRAP	**DRESS**	**KIT**
LS1	h***a***ck, ch***a***t, th***a***t, ***a***ngry	m***a***ny, w***e***nt, ***e***nd, d***ea***d	h***i***m, th***i***s, th***i***ng, m***i***nutes
LS2	l***a***ndm***a***ss, h***a***s, ***a***nd	for***e***ver, r***e***st, g***ue***ss, l***e***ft	spec***i***fically, l***i***ve, k***i***d, Pac***i***fic, l***i***ving, b***ui***lding
LS3	f***a***mily, d***a***d, b***a***ck, h***a***ndcuffs	b***e***nd, g***e***tting, b***e***droom, ***e***nded	***s***ister, b***i***g, p***i***cked, ***s***ystem
ES1	th***a***t's, s***a***ndwich, b***a***ck, tr***a***velled, ***a***ccent	s***e***ven, w***e***nt, th***e***n, th***e***m	d***i***d, ***E***nglish, f***i***fty, f***i***shing, l***i***ve
ES2	***a***ccent, p***a***ssion, ***a***nd, p***a***ssionate	esp***e***cially, ***e***veryone, ***e***verything, w***e***nt, m***a***ny, d***e***coration	b***i***g, ***E***nglish, everyth***i***ng, h***i***story, l***i***ve, p***i***ss, th***i***s
ES3	b***a***ck, th***a***n, st***a***nds, c***a***tching, b***a***nned	m***e***mories, fr***ie***nds, th***e***n, d***e***finitely, l***e***ft	b***i***g, k***i***d, p***i***cks, l***i***ved

Table 2: The list of words for the speakers with the analysed vowels in italics and bold

In order to reduce variation caused by the physiological differences in the speech organs of different speakers, the formant frequency values were normalised by using the Bark Difference Metric based on King Wui Leung et al. (2016). Thus, the Hertz values were converted into Bark, and comparisons between the two groups were made by using the converted Bark values.

3.3. The Scope and Limitations of the Study

It should be noted that in the analysis, the phonemic environment was not examined in detail, but as it was variable, it did not contort our results. Also, the length of the recordings did not allow for the extraction of an ideal number of tokens, making the results tentative, but a tendency regarding second-dialect retention can be shown. Thus, a quantitative analysis was possible, and the results provide an insight into the retention of features of the first dialect for mobile speakers. Finally, the comparison of the linguistic behaviour of male and female speakers was not possible as the available informants were all male speakers. To gain information about this aspect, more data collection is needed from female New Zealand speakers.

4. Results

In this section, the results of the analysis of lifelong and expatriate speakers are presented, with the formant values of the two groups in Tables 3 and 4 respectively.

Group 1	Speaker no.	**TRAP**		**DRESS**		**KIT**	
Lifelong New Zealanders		Z1	Z2	Z1	Z2	Z1	Z2
	S15	4.92	12.55	3.79	13.20	5.10	10.78
	S16	5.34	12.17	4.60	11.85	4.86	10.53
	S20	5.14	12.73	4.03	12.85	4.12	10.40
	Mean value	**5.13** ****	**12.48**	**4.03** ****	**12.82**	**4.72** ***	**10.56** ****

Table 3: Results of Group 1
(**** p<0.0001 vs. TRAP Z1 in Group 2, **** p<0.0001 vs. DRESS Z1 in Group 2, *** p<0.001 vs. KIT Z1 in Group 2, **** p<0.0001 vs. KIT Z2 in Group 2, *unpaired t-test*)

Group 2	Speaker no.	**TRAP**		**DRESS**		**KIT**	
Lifelong New Zealanders		Z1	Z2	Z1	Z2	Z1	Z2
	NZ6	6.04	12.65	5.31	13.61	5.21	12.30
	NZ8	7.48	12.70	5.75	13.05	6.01	12.83
	NZ19	6.12	12.99	5.86	12.88	5.22	13.28
	Mean value	**6.48**	**12.79**	**6.67**	**13.14**	**5.55**	**12.78**

Table 4: Results of Group 2

The first part of the analysis examined the realisation of the TRAP vowel, and based on the results, it can be stated that a statistically significant difference was found between Group 1 and Group 2 regarding the Z1 value (p<0.0001). The lower Z1 value for speakers of Group 1 indicates that the TRAP vowel is higher in the speech of these speakers compared to Group 2. As for the Z2 value, there was no significant difference between the two groups.

The next part of the analysis examined the realisation of the DRESS vowel, and similarly to the TRAP vowel, a significant difference was found between the two groups concerning the Z1 value (p<0.0001). The lower value in Group 1 shows that DRESS is a higher vowel in the pronunciation of these speakers compared to Group 2. In the Z2 value, a statistically significant difference was not found between the two groups.

The last part of the analysis examined the realisation of the KIT vowel, and a statistically significant difference was found between the two groups regarding both the Z1 (p<0.001) and the Z2 values (p<0.0001). Speakers of Group 1 have a lower Z2 value, which means that in the speech of these speakers, the KIT vowel is more centralised in comparison to Group 2. The lower Z2 value in the same group indicates that speakers of this group have a higher realisation of the KIT vowel than in Group 2.

5. Summary and Discussion

In summary, significant differences have been observed for all the three vowels we analysed. Thus, the results show that the short front vowels are pronounced differently in the two groups. The TRAP and DRESS vowels are still raised in the speech of expatriate speakers but to a lesser degree than for lifelong residents of New Zealand. Regarding the KIT vowel, its centralisation is stronger in the speech of lifelong speakers compared to expatriate speakers. Therefore, TRAP and DRESS raising and KIT centralisation were slightly suppressed but not lost when speakers had been permanently exposed to the second dialect. As these are salient features of NZE and rare in other dialects, both changes can be explained by accommodation, that is convergence towards the standard pronunciation of these vowels to make communication more effective as well as to express solidarity with the interlocutor and group membership in the new speech community.

Also, the pronunciation of KIT differs regarding vowel height as it is realised as a lower vowel in the speech of expatriate speakers with a smaller difference between the two groups. This change is probably due to the effect of the dialect of the destination country where the speakers settled, but it would be difficult to determine which dialect they converge towards because each speaker lived in several different locations. As this is outside the scope of this study, it was not investigated further. Regarding intraspeaker and interspeaker variation, minor differences were found for all three vowels, probably due to idiolectal differences.

6. Conclusion

The present study has examined the retention of unique and stable pronunciation features, more precisely, the realisation of the short front vowels in the speech of expatriate speakers of NZE. To investigate this issue, the acoustic analysis of the speech samples of three expatriate and three lifelong male New Zealand speakers was carried out, followed by a comparative analysis. Based on the results, it can be stated that TRAP and DRESS raising, along with KIT centralisation, are still present in the speech of expatriate speakers, but to a lesser degree compared to lifelong New Zealand speakers. These results are similar to those reported by Evans and Iverson (2007) in that essentially, the examined pronunciation features are maintained but softened. Therefore, they are less salient and closer to the standard pronunciation of the dialect of destination. The findings are also in accordance with Bowie's (2000) observations that stable pronunciation features of NZE are kept even after the speakers have been permanently exposed to other dialects of English. Following Trudgill (1986), the observed changes in pronunciation can be seen as mild but long-term alterations in the speakers' accents. Probably, two distinct factors of CAT are at work in such cases, namely convergence towards the dialect of the destination country of mobile speakers and the

intention to keep their original New Zealand identity. As a result, the characteristic pronunciation features of NZE do not disappear completely but are altered to some extent, and this way, both goals are fulfilled.

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