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Syllable-timing and Maori English[1]

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The issues surrounding "Maori English" have generated a great deal of discussion among New Zealand linguists over the last twenty five years (eg, Richards 1970, Benton 1985, 1991, King 1993, Bauer 1994, Holmes and Bell in press, Holmes forthcoming). Linguists disagree on whether it exists at all, whether it is an ethnic dialect or a social dialect of New Zealand English, with suggestions that it is a myth (eg Benton 1991), a stereotype (Bauer 1994) or simply a contextually variable register of New Zealand English (NZE). In the search for this ephemeral variety, a number of linguistic features have been suggested as characteristic of Maori English (see, for example, Benton 1991, Bauer 1994). There has, however, been little systematic research exploring these claims.[2]

One feature which is widely cited as distinguishing between Maori English (ME) and other New Zealand varieties is the rhythm of ME. It has been suggested that ME is more syllable-timed than Pakeha English, ie. all syllables, not just stressed syllables, occur at roughly equal time intervals.

Maori English is most easily recognised by its pronunciation, in particular by the voice quality and the rhythm. The rhythm is more syllable-timed than that of other varieties of NZE, with more full vowels in unstressed syllables (Bauer 1994: 414).

Essentially Bauer is suggesting that the use of full vowels where reduced vowels might be expected gives the impression that Maori English is more syllable timed than Pakeha English. Such comments are based on observation; there has been little systematic research using carefully matched speech samples investigating the extent to which such features occur in the speech of those who use Maori English compared to users of Pakeha English.

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[2] See, however, Holmes forthcoming.

It is possible that this tendency is reinforced by the fact that the Maori language (like Japanese) is a mora-timed language (W. Bauer 1981). Mora-timing provides a rhythmic pattern which is more similar to syllable timing than to stress timing.

When there is a distinction made between short (one-beat) and long (two-or-more beat) syllables, so that each short vowel .. is mapped onto one 'beat' or time-interval, and each long vowel is mapped onto two, the language is said to be .. mora-timed (Donegan 1978: 53).

Though Maori is no longer widely spoken, even young Maori people who do not speak the language will have had regular contact with it, often through older family members, but also at meetings on the marae, and on the radio and television. This exposure to Maori rhythms in contexts where Maori is an admired and prestigious code may influence their use of English. In other words the mora-timing of Maori may contribute to the tendency for ME to sound more syllable-timed than Pakeha English.

Taking up Bauer's suggestion that Maori English is characterised by "more full vowels in unstressed syllables", Helen Ainsworth (1993) undertook a small study to compare the speech of newsreaders on different radio stations. She recorded news broadcasts from the BBC World Service, from two commercial New Zealand stations, from the more conservative New Zealand National programme and from the Maori news service, Mana News. All the speakers were male. An analysis of about two and a half minutes of speech from each broadcaster provided evidence that the Maori newsreader used a rhythm which could be described as more syllable-timed than any of the others. On the other hand, the BBC newsreader used the most stress-timed rhythm, while the New Zealand Pakeha newsreaders fell in between these two extremes. In other words, the results suggested the existence of a continuum from RP through cultivated or standard Pakeha English to cultivated or standard Maori English pronunciation in terms of the degree of syllable timing which characterised these different accents of English.

Ainsworth's 1993 study was valuable in that it piloted a methodology for identifying degrees of syllable-timing in different varieties of English. But it involved only five male speakers using a relatively unusual style (broadcast reading aloud). In the study described in this paper we have extended the methodology to a larger group of speakers interacting in the most basic speech style, casual conversation.

Method

In order to establish the extent to which syllable-timing characterised the speech of Maori vs Pakeha New Zealanders, excerpts were selected from the Wellington Corpus of Spoken New Zealand English (WCSNZE) involving

10 Pakeha New Zealanders and 10 Maori New Zealanders[3]. Since we were interested in the extent to which this feature characterises current NZE, the conversational speech of younger New Zealanders (aged between 20 and 35) was the focus of the analysis. Ten minute excerpts from the conversations of twenty younger middle class people in the WCSNZE were selected for this study. Table 1 illustrates the distribution of the sample.

Table 1. Sample used for analysis of syllable-timing

	Middle class 20-35 year olds	
	Female	*Male*
Maori	5	5
Pakeha	5	5

Using the methodology developed in Ainsworth (1993), it was assumed that a greater use of full vowels in unstressed syllables indicated more syllable-timed speech. Hence, the method of analysis involved examining the pronunciation of the vowels in words which are normally reduced in connected speech. These words were identified by reference to Gimson's (1980) list of grammatical or "form" words "which have two or more qualitative and quantitative patterns according to whether they are unaccented (as is usual) or accented (in special situations or when said in isolation)" (1980: 260). Where, for some reason, reduction was not an option, tokens were excluded: in other words tokens were included in the analysis only where there was an apparently unconstrained choice between a reduced and an unreduced variant. So words which were stressed for emphasis were excluded. And words which occurred in final position in a tone unit were excluded, since in this position form words are generally unreduced: eg *what were they living <u>for</u>?* where *for* is unreduced.

Tokens other than the definite and indefinite articles were categorised as follows:

[A] retaining the "strong" form with a full vowel

[B] an intermediate form somewhere between the "strong" and the "weak" form

[C] adopting the "weak" form with a vowel reduced qualitatively and quantitatively to /ɪ/or /ə/.

[3] This Corpus consists of one million words of spoken NZE made up as far as possible of speech excerpts of 2000 - 2500 words (approximately 15-20 minutes). These excerpts were selected to fill a pre-determined sample design which includes formal, semi-formal and informal or casual speech styles. (See Holmes 1995).

Tokens consisting of the definite and indefinite articles were categorised in the following way:

[A] "strong" forms / ðiː/ and /eɪ/

[B] intermediate forms /ðʌ / and /ʌ/

[C] "weak" forms /ð and /ə/

A minimum of 150 tokens from each ten minute speech excerpt were analysed. Percentages of each category of token were calculated for Maori, Pakeha, female and male speakers and then compared.

Results

The majority of grammatical words for both groups had vowels which were reduced qualitatively and quantitatively as would be expected in a stress-timed language such as English. However, a quarter of all the tokens which occurred consisted of full vowels, a considerable proportion in a stress-timed language. The analysis revealed differences between both Maori and Pakeha, and between women and men in the number of unstressed syllables which were pronounced with full vowels. The ethnicity differences were by far the most interesting, however, as table 2 and figure 1 demonstrate.

Table 2. Variants of vowel pronunciation by ethnicity

	Pakeha		*Maori*	
Variants	*%*	*No*	*%*	*No*
Full vowels	18.6	452	31.6	833
Intermediate[4]	4.5	110	6.8	178
Reduced vowels	76.9	1863	61.6	1621
	100	**2425**	**100**	**2632**

Figure 1 demonstrates that while all speakers used more reduced vowels than intermediate or full vowels, and the difference in the intermediate forms is insignificant, Maori speakers used considerably more full vowels than Pakeha speakers overall (31.6% vs 18.6%). This difference is highly statistically significant. (X2 (1df) with Yates correction = 112.023; $p < 0.001$; Mann-Whitney $p = 0.004$).

Gender is not a significant variable overall, as table 3 demonstrates. Women used 28% full vowels compared to 23% for men, a difference which was not statistically significant (Mann-Whitney $p = 0.096$).

[4] It is worth noting that almost all tokens classified in this category consisted of the definite and indefinite articles.

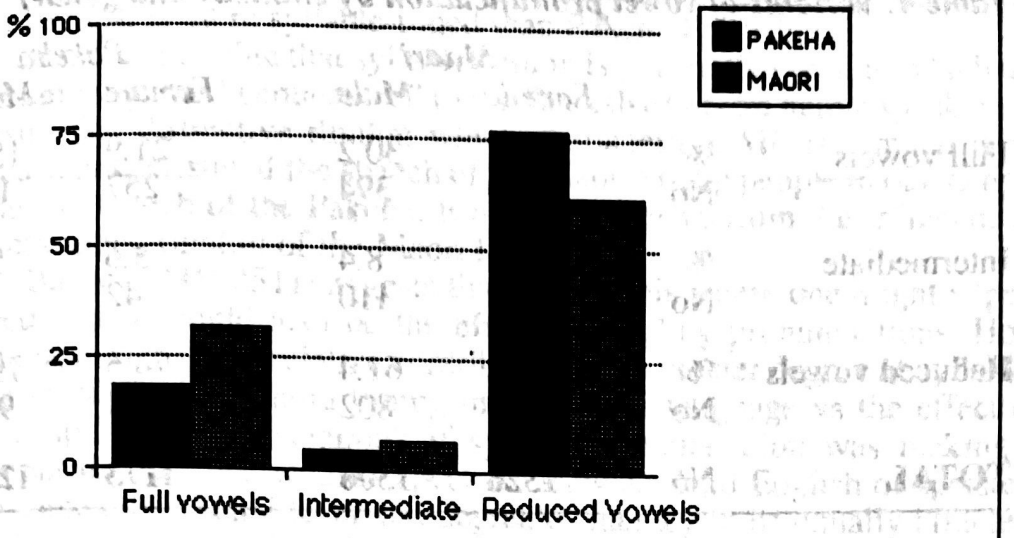

Figure 1. Variants of vowel pronunciation by ethnicity

Table 3. Variants of vowel pronunciation by gender
(I constructed this table)

	Female		*Male*	
Variants	*%*	*No*	*%*	*No*
Full vowels	27.9	696	23.0	589
Intermediate	4.4	110	7.0	178
Reduced vowels	67.7	1693	70.0	1791
	100	**2499**	**100**	**2558**

Within each of the ethnic groups, however, there was an interesting difference in the distribution of full vowels vs reduced and intermediate vowels by gender for Maori vs Pakeha, as table 4 illustrates. While there was little difference in the proportion of full vowels used by Maori women and men, Pakeha women used considerably more full vowels than their male counterparts.[5] This is clearly illustrated in figure 2 which diagrams the contrast in the percentage of full vowels used by Maori and Pakeha women and men.

[5]This difference proved significant using a chi-square test; X2 (ldf) = 15.609 with Yates correction, $p < 0.001$. However the Mann-Whitney test indicates a much lower level of significance $p = 0.016$.

Table 4. Variants of vowel pronunciation by ethnicity and gender

		Maori		Pakeha	
		Female	*Male*	*Female*	*Male*
Full vowels	%	33.1	30.2	21.9	15.6
	No	439	394	257	195
Intermediate	%	5.1	8.4	3.6	5.4
	No	68	110	42	68
Reduced vowels	%	61.8	61.4	74.5	79.0
	No	819	802	874	989
TOTAL	**No**	**1326**	**1306**	**1173**	**1252**

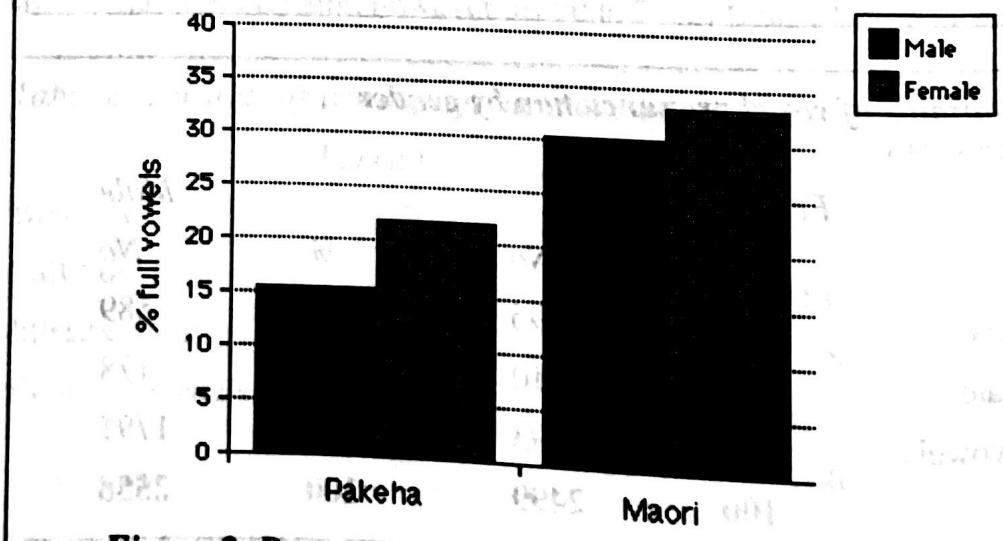

Figure 2. Percentage of full vowels by ethnicity and gender

Discussion

The analysis examined the proportion of full vowels used in English grammatical words where one would have expected reduced vowels in a stress-timed language such as English. The results demonstrated clearly that the most significant difference between groups in the data was that between Maori and Pakeha. Almost a third of the tokens analysed were pronounced by the Maori speakers as full vowels, compared to less than a fifth of the Pakeha tokens. It seems then that Maori women and men are more likely than Pakeha to pronounce small grammatical words in unstressed positions with full vowels. This tendency to produce more full vowels than is

customary in stress-timed English may well account for the impression that Maori English is more syllable-timed than Pakeha English.

It seems possible that syllable-timing is yet another feature which the Maori language has "bequeathed" to the English of Maori native speakers of English.[6] The distinctive rhythm which characterises ME is a much more marked characteristic of the speech of the Maori young people in our sample than in the speech of the Pakeha. It may well derive from the influence of the mora-timed rhythm of the Maori language.

Bauer (1986: 251) suggests that full vowels where one might expect reduced vowels could also be the effect of spelling pronunciations. How might one establish the relative contributions to a greater degree of syllable-timing in NZE of the mora-timing of the Maori language vs the effect of English spelling pronunciation? If spelling pronunciation was making a large contribution, one would expect the New Zealand English of speakers of the same educational level and degree of literacy to be equally affected, regardless of ethnicity. The fact that the English of Maori New Zealanders is characterised by a greater degree of syllable timing than that of Pakeha matched for educational level thus suggests that the influence of the Maori language is predominant.

Further support for this interpretation is provided by the fact that the middle-aged Maori newsreader in Ainsworth's (1993) study used an even higher level of syllable-timing than the young Maori in the present study. Working for the Mana Maori Media company, the newsreader would have been mixing mainly with Maori people, some of whom would have been regularly reading the news in Maori. This supports the suggestion that the greater level of direct and indirect contact with the Maori language experienced by Maori people, is an influence on the degree of syllable-timing in Maori people's English.

This interpretation is somewhat complicated by the style factor. The "reading aloud" style of a newsreader is more susceptible to the influence of spelling pronunciation than a relaxed conversational style. This factor, however, was equally relevant to all the newsreaders in Ainsworth's 1993 study, and cannot therefore account for the greater degree of syllable-timing of the Maori newsreader compared to the other newsreaders.

That style had some contribution to Ainsworth's (1993) results is suggested, however, by the fact that the levels of syllable-timing of all the newsreaders was relatively high compared to the conversational style of the young people used in the present study. In conversational style the range

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[6] Other features which may reflect the influence of the Maori language on English include the pragmatic tag *eh,* which it has been suggested may derive from the Maori tag *ne*, (see Meyerhoff 1994), devoicing of final obstruents in English (see Benton 1966, Holmes 1996), and the occurrence of unaspirated initial plosives (see Robertson 1994, Holmes 1995).

extended from a low of 15.3% by Maori males to a high of 33.1% by Maori women. As table 5 shows, the proportions of full vowels in the speech of the New Zealand newsreaders ranged from 24.7% on the commercial station to 54.2% on the formal Maori news station.

Table 5. Variants of vowel pronunciation in newsreaders' speech
(Ainsworth 1993)

RP (BBC News)	18.3
Independent/commercial	24.7
Standard NZE (National)	32.3
Maori (Mana News)	54.2

Reading aloud thus appears to increase the likelihood of full vowels compared to reduced vowels in unstressed syllables. Reading aloud is a style where one would expect maximum influence from the written form on the spoken, and where spelling pronunciations are therefore likely to make a contribution to the syllable-timed effect of the speech. It is also possible, however, that concern for intelligibility or the needs of the audience is another contributory factor (see Bell 1984). This would tend to favour more careful articulation, and the use of full vowels in unstressed syllable is one effect of such articulation. As Bauer (1995:324) comments,

the replacing of reduced vowels by full vowels is a fortition, not a lenition, and as such is the kind of process we would expect to find particularly in clear speech, speech which is oriented to the need of the listener.

Speed is another possible contributing factor: faster speech tends to result in more reduced vowels in unstressed syllables. On the pacier commercial station the newsreader speaks considerably faster than on the more sedate National station and Mana News programme. Since conversational speech is also generally faster than reading aloud pace, this may help explain both the lower proportion of full vowels in the commercial newsreader's speech, and the lower proportions in the conversational data used in this study.

This interpretation is further supported by the fact that when the conversationalists in the present study slowed their speech down for some reason, there was an immediate increase in the proportion of full vowels. Where technical explanations were being given, for instance, there was a tendency for full vowels to be used where reduced vowels might have been expected: eg. explaining how beer is brewed "*from* brewing point *to* drinking" ..... "by *the* pressure of *the* air" (DPC012-J). The italicised words featured full vowels. Similarly, where a speaker was hesitating and thinking carefully about what they were saying, there was a tendency to use fuller vowels. eg. "to do her final exam" (DPC156-A).

This analysis of the speech of a group of twenty young New Zealanders matched for ehtnicity, age and social class has demonstrated that syllable-timing is a feature of New Zealand English which characterises the speech of Maori speakers to a greater extent than that of Pakeha. Comparison with Ainsworth's (1993) results suggests that speech style is also a contributory factor to the syllable-timing of speech, with a reading aloud style favouring greater use of full vowels where one might have expected reduced vowels. Bauer (1995: 324-5) suggested that this phenomenon in NZE could be considered a simultaneous change from below and a change from above. He argued that the syllable-timing of Maori English was most characteristic of "the low social and ethnic groups", while spelling pronunciations tended to characterise the speech of those with "more than minimal education" (1995: 324.) This study demonstrates that syllable-timed speech characterises the speech of middle class Maori, so it is certainly not restricted to "low social and ethnic groups". The question of whether it has spread upwards will require an extension of this study to the speech of lower social groups. With respect to spelling pronunciation, this study suggests that speech style is an important influence on the number of full vowels for reduced vowels; the relative contribution of spelling pronunciations compared to audience demands for intelligible speech, or the slower speed of news-reading compared to conversation, is not clear. While the influence of relative speed could be further investigated, it is not obvious how the specific contribution of spelling pronunciations in reading aloud style might be identified.

Clearly, there is considerable scope for further research. There are many factors which need further analysis in establishing the distribution and extent of syllable-timing as a feature of Maori and Pakeha New Zealand English, as well as in exploring possible sources or explanations for the prevalence of this feature in NZE. The relative contributions of different social backgrounds, different styles, different age groups, varying degrees of proficiency in Maori, rural vs urban residence, and the degree of contact with Maori people reflected in the social networks of contributers, are among the most obvious areas for further examination. This study provides a starting point, however, in exploring this distinctive feature of Maori English.

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