

**Te whakahuatanga i te reo Māori: Kua ahatia e tātou i roto i ngā tau 100 kua hipa nei?**

*(The pronunciation of Māori: What have we done to it in the last 100 years?)*

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**Aria (Abstract)**

E kī ana te whakataukī: ‘Toitū te whenua, whatungarongaro te tangata.’ E tika ana pea kia whakawhānuitia tēnei, kia pēnei ai: ‘Toitū te whenua, whatungarongaro te tangata, rerekē haere te reo.’ Nō te mea, he mea tahito te reo, he mea e tukuna iho nei e tēnā whakatipuranga ki tēnā whakatipuranga, engari ahakoa pēhea, ka rerekē haere. Ko te reo Pākehā o nāianei, ehara i te reo o Rūrūtao mā, o Tiōha mā. Kua rerekē te whakahua, kua uru mai he kupu hōu, kua ngaro ētahi kupu, kua rerekē hoki te whakatakoto i ngā kupu.

Kei te pēnei hoki te reo Māori. I roto i ngā rautau e rua kua hipa nei, he nui ngā āhuetanga o te reo kua kore e pērā tonu i ō te reo o mua atu. He nui ngā kupu kua tīkina atu ki te reo Pākehā, ā, kua tangatawhenuatia. He nui ngā kupu hōu kua hangaia i ngā tau tata nei hei kawē i ngā kaupapa o te ao hōu e kōrerohia ana ki te reo Māori. He maha hoki ngā kupu kua tīni te tikanga, pēnei i te ‘pūtea’, i ngā wā o mua he momo kete, i nāianei he puna moni! Mō te āhua o te papareo, ko ētahi o ngā whakatakoto e rangona ana i ēnei rā, kāore i tika i tērā atu rautau.

Mō te taha ki te whakahua i te reo, me pēhea te tiroiro? Koinā te kaupapa o tētahi rangahau kātahi anō ka tīmata, ā, ko te kaupapa o tēnei pitopito kōrero he whakamārama i te āhua o taua rangahau me ētahi o ngā kitenga e putaputa mai ana i te mahi. Nō reira ko te taitara o te tuhinga nei: ‘Te whakahuatanga i te reo Māori: Kua ahatia e tātou i roto i ngā tau 100 kua hipa nei?’ Ko te mahi he mea tautoko-ā-moni nā te Pātea Mātenga.

*In the words of the proverb: 'The land remains, but humankind vanishes.' One should perhaps extend this to read: 'The land remains, humankind vanishes, and language changes.' For languages are old, handed down from one generation to another, but no matter what, they change. Present-day English is not Shakespeare's or Chaucer's language. The pronunciation has changed, new words have entered the language, some words have been lost, the grammar is now different.*

*Māori is like that as well. Over the last two centuries, many aspects of the language have become different. Many words have been borrowed from English, and become part of the language. Many new words have been created in recent years to accommodate the new topics now being spoken about in Māori. Many words have changed their meaning, e.g., 'pūtea' originally a type of basket, but now a 'fund', source of money. In the grammar, there are now constructions being used which were not correct in earlier centuries.*

*So far as the pronunciation is concerned, how is one to observe its development? That is the substance of a research project which has only just now begun, and it is the purpose of this paper to explain the nature of that research and show some of the preliminary findings. Hence the title: The pronunciation of Māori: What have we done to it in the last 100 years? The project is supported by the Marsden Research Fund.*

### **Te Take (Introduction)**

Ko te rōpū rangahau nō Wīwī, nō Wāwā: ko ngā pūkenga hoki he whānui. Ko ētahi e whai ana i ngā āhuatanga o te reo Māori, engari ko Margaret Maclagan rāua Catherine Watson he tohunga ki tēnei mahi, ki te āta wetewete i ngā tūmomo tangi o ngā reo. Arā, ko tā te rōpū rangahau e whai nei ko te āhua o te whakahua i te reo Māori i roto i te rautau kua taha ake nei. Me tēnei anō; kua roa kē ngā reo e rua e noho tahi ana i Aotearoa nei, ā, kua neke atu hoki i te kotahi rautau te iwi Māori e kōrero ana i aua reo e rua. Nō reira ko te tuarua o ngā pātai: I pēhea te whakapā o tētahi reo ki tētahi? Me pēhea e taea ai te rangahau ngā piki me ngā heke o te whakahua i roto i ngā tau? Heoi anō, waimarie te hunga rangahau i te tokomaha o ngā kaikōrero i hopukina ā rātou kōrero e te Reo Irirangi i ngā tau 1946-8. Ko aua rīpene kei te pātaka e kīia nei ko Ngā Taonga Kōrero e tiakina ana. Ko te nuinga he Pākehā, engari ko ētahi he Māori. Ko ngā kaumātua nei he mōhio ki ngā reo e rua, engari ko te reo Māori te reo tuatahi. Nō reira, ko te āhua o te rangahau he āta tātari i te whakahuatanga a aua kaumātua, me te whakarite ki te reo e kōrerohia ana i ēnei rā.<sup>1</sup>

Ko ngā hōtuku o tēnei mahi ko ēnei rōpū e toru e whai atu nei. He tāne anake, nō te mea e pērā ana te rōpū tuatahi:<sup>2</sup>

- Ko ngā kaikōrero kei ngā Taonga Kōrero ā rātou kōrero e puritia ana;
- Ko ngā kaumātua, āhua 65-80 te pakeke i nāianei;
- Ko te reanga taitamariki: 15-30 tau te pakeke i nāianei.

Āhua tekau ngā kaikōrero o ia rōpū, ā, ka tirohia ō rātou reo e rua

*The research group is spread over several universities and combines a wide area of expertise. Many of us are researchers of Māori language, however Margaret Maclagan and Catherine Watson bring expertise in the study of phonetics. The*

*research group is investigating the pronunciation of Māori over the last century. Further, Māori and English have now long been living side-by-side in New Zealand, and Māori have been bilingual for over a century. Our second question is thus: What has been the influence of these two languages on each other?*

*How is one to study the progress of the pronunciation over the years? The research group is fortunate to have at its disposal a number of speakers whose speech was recorded in 1946-8 by Radio New Zealand. These tapes are held in the Radio New Zealand Sound Archives. Most of the speakers are Pākehā, but some are Māori. These Māori elders spoke both languages, though Māori was their first language. Thus the research consists in the careful analysis of these elders' pronunciation and the comparison with the language as spoken today.<sup>1</sup>*

*The data for this study consist of the following three groups. All are male, since the Sound Archive speakers were all men:<sup>2</sup>*

- *The speakers in the Sound Archive tapes;*
- *Elders alive now, aged between 65-80;*
- *Younger speakers, aged 15-30.*

*There are ten speakers in each group whose English and Māori will be analysed.*

Kua tīmata kē te tiroiro i ētahi wāhanga o te whakahuatanga. Tuatahi ko te whaihau, te korehau o ngā orokati /p, t, k/. Te tikanga o tēnei kupu 'whaihau' e pēnei ana. I te tangata e kōrero Pākehā ana, ka puta tētahi paku hau i muri i ēnei oro. E rangona ai tēnei, me mātua whakatū te ringa ki mua tata i ngā ngutu, me te whakahua i te kupu 'tar', tōna tikanga ka rangona te hau e pupuhi nei ki ngā matimati. Kātahi ka whakahuatia ko te kupu 'star', ā, kua kore e rangona te hau. Koinei e kīia ai ko te /t/ o te kupu 'tar' he whaihau, ko tō te kupu 'star' he korehau. Nā, i āta whakaritea te whaihau, korehau rānei o ēnei oro i roto i te reo o ētahi kaikōrero tokotoru. Ko te kitenga, tata kore e whaihau te reo o ngā kaikōrero TK, engari kua kaha haere te whaihau o ēnei oro i roto i te reo o ngā reanga o muri mai. Nā te aha? Nā te whakatata pea o te whakahua i ēnei oro Māori ki ō te reo Pākehā.

*Some aspects of pronunciation have already been investigated. Firstly, the aspiration of the consonants /p, t, k/. The meaning of the term 'aspiration' is the following. When one is speaking English, a bit of breath is released after these sounds. To appreciate this, one should place one's hand immediately in front of one's mouth and say the word 'tar'. One will feel a puff of air on the fingers. If one says 'star', this puff of air will not be felt. The extent of aspiration of these sounds in the speech of three speakers has been studied and it was found that there was very little aspiration in the speech of the older speaker (Sound Archive), but that it increased in the generations since then. Why? Perhaps because these sounds are becoming more like the corresponding English sounds.*

Pērā anō te <wh>.<sup>3</sup> I ēnei rā, ko te whakahua a te nuinga i tēnei oro, he [f], pērā anō i tō te reo Pākehā. He wā anō, ka rangona hoki he [h], [ϕ], [ʌ]. Ko aua whakahua anō i whakamahia e ngā kaikōrero TK, engari ko tā rātou tino whakahua he [ϕ], ehara i te [f].<sup>4</sup>

Ko tā mātou e whakamārama atu nei i tēnei tuhinga ko te whakarite i ngā oropuare roa me ngā mea poto o te reo o ngā kaikōrero o tērā atu rautau me ō te reanga taitamariki o nāianei.

*Similarly the pronunciation of the sound represented by the letters <wh>.<sup>3</sup> In modern Māori, the usual pronunciation is [f], as in English. One does also encounter [h], [ϕ], [ʌ]. All of these pronunciations occurred in the Sound Archive speakers, but the dominant pronunciation was [ϕ], not [f].<sup>4</sup>*

*In this paper, we compare the pronunciation of the short and long vowels in the speech of the 19th century speakers and the younger group of today.*

Tokorua ngā kaikōrero o ia rōpū ka noho hei taurira mō ō rātou whakatipuranga. E toru tekau ngā whakaputanga o ia oropuare i kohia, ka āta inengia me te whakarite kia kitea ai kua pēheatia te whakahua i roto i ngā tau.

Ko ngā kaikōrero o ngā Taonga Kōrero ko:

Raureti, i whānau mai i te tau 1885, Te Awamutu (Ngāti Maniapoto, Tūwharetoa);  
Hoani, i whānau mai i ngā tau 1880, Paeroa (Ngāti Tamaterā)

Nō te reanga taitamariki ko:

Matiu, i whānau mai i te tau 1972, Waihopai (Te Whakatōhea);  
Te Rau, i whānau mai i te tau 1979, Ōtaki (Ngāti Raukawa, Ngāi Tahu)

*Two speakers from each group will serve as examples for their cohort. Thirty articulations of each vowel were collected, analysed and compared, in order to plot what has happened over the years. The Sound Archive speakers are:*

*Raureti, who was born in 1885 in Te Awamutu (Ngāti Maniapoto, Tūwharetoa);  
Hoani, who was born in the 1880s in Paeroa (Ngāti Tamaterā)*

*The younger speakers are:*

*Matiu, who was born in 1972 in Invercargill (Te Whakatōhea);  
Te Rau, who was born in 1979 in Ōtaki (Ngāti Raukawa, Ngāi Tahu)*

Ka toko ake i reira te pātai me pēhea tēnei mea te oropuare e inengia ai, e kōrerohia ai, e whakaritea ai?

*The question arises how one is to measure, analyse and compare vowels.*

### **Ngā tikanga (Methods)**

E rua ngā huarahi: mā te āhua o te whakaputa o te oropuare i te waha tangata, ka tahi: mā te tiroiro i te oro e rere atu ana i te waha tangata ki te taringa o te hunga whakarongo, ka rua. Ko ngā oro katoa he pōkarekare nō te hau, nō reira ka

whakaritea ngā oro ki ngā ngaru, ki ngā karekare o te moana me ngā tihi, ngā hōhonu, ngā piki, ngā heke.

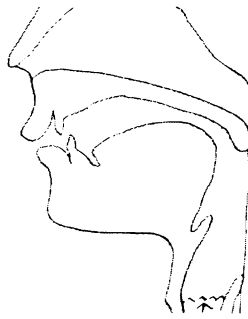
Mō te taha ki te whakaputa, ko te mea nui ko te takoto o te arero, arā, ko tēhea wāhanga o te arero e hikitia ana ki tēhea wāhanga o te waha.

*There are two approaches: the way in which a vowel is articulated in the mouth of the speaker; and the study of the vowel as a sound wave as it passes to the ear of a hearer. All sounds are fluctuations of the air, likened to the waves of the sea with peaks and troughs.*

*With respect to articulation, it is the position of the tongue which is the most important aspect, which part of the tongue is prominent and to what height in the mouth.*

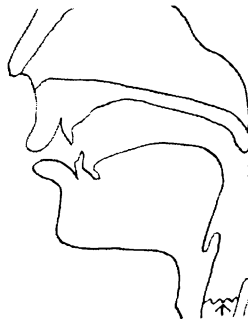
Ki te āta tirohia te pikitia nei, ka kitea ko te wāhanga o muri o te arero kua hikitia ki te wāhi o runga i roto i te waha, he [u].<sup>5,6</sup>

*This diagram shows the back of the tongue raised high in the mouth to produce the sound: [u].<sup>5,6</sup>*



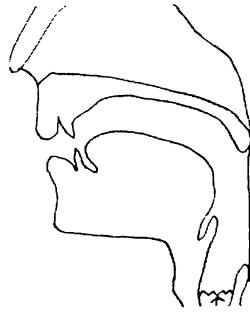
Ko te pikitia tuarua: ko muri tonu o te arero, engari kāore i te pērā rawa te teitei, he [o].<sup>7</sup>

*In the second picture, it is again the back of the tongue which is raised, but not so high: this is [o].<sup>7</sup>*



Tuatoru, ko mua kē o te arero e whai wāhi ana ki te whakaputa i te oro, he [e].

*In the third case, it is the front of the tongue (rather than the back) which is raised to produce the sound [e].*



Nō reira e pēnei ana te kōrero mō ngā oropuare, kei runga ~ raro rānei, kei mua ~ muri rānei. Ki te kīa tētahi oropuare he ‘oropuare runga’, ko te tikanga, kei runga rawa te arero e takoto ana i roto i te waha; ki te kīa tētahi oropuare he ‘oropuare raro’, ko te tikanga, te pikitanga ake o te arero i roto i te waha he tino iti noa iho; ki te kīa tētahi oropuare he ‘oropuare waenganui’, ko te tikanga, kei waenganui te arero i ngā nohoanga o ‘runga’, o ‘raro’ hoki. E pēnei ana anō te kōrero: ki te kīa tētahi oropuare he ‘oropuare mua’, ko te tikanga, kei te wāhanga o mua i roto i te waha te arero e hikitia ana; ki te kīa tētahi oropuare he ‘oropuare muri’, ko te tikanga, kei te wāhanga o muri i roto i te waha te arero e hikitia ana; ki te kīa tētahi oropuare he ‘oropuare pokapū’, ko te tikanga, kei waenganui o ngā wāhanga o mua, o muri hoki i roto i te waha te arero e hikitia ana. E pai ana hoki te kī, kei runga ake te [u] i te [o], kei mua atu te [e] i te [o].

*Thus, we say of vowels that they are high, mid or low, front, central or back. In other words, if we say that a vowel is ‘high’, we mean that the tongue is raised high in the mouth; if we say that it is ‘low’, we mean that the tongue is only slightly raised; if we say that it is ‘mid’, we mean that it is raised to a position that is somewhere between ‘high’ and ‘low’. Equally, if we say that a vowel is ‘front’, we mean that the tongue is raised at the front of the mouth; if we say that it is ‘back’, we mean that it is raised at the back of the mouth; if we say that it is ‘central’, we mean that it is raised in the area between the front and back of the mouth. Thus, we may say that [u] is higher than [o], and [e] is more front than [o].*

Koinā te āhua o te whakaputa oro, engari, i te oro e rere atu ana i te waha ki te taringa, he karekare hau te oro. Tua atu anō i tēnā, ko ia oropuare he hononga nō ētahi karekare e rere tahi ana. Ko ngā mea nui ko ngā karekare e toru e kīa nei ko F0, F1, F2, ā, ka inengia te tere o ia karekare, arā e hia ngā tihi karekare ia hēkona.

*That is how we use our mouths in the production (or articulation) or speech. However, we also use our ears to hear sounds. When a sound passes from the mouth of the speaker to the ear of the hearer, it does so in the form of air waves, that is, sound waves that are transmitted via air. Every vowel sound is made up of a combination of several air waves flowing together. The important ones are the first three, labelled F0, F1, F2, and one measures the frequency of each wave, that is, how many peaks occur every second. When we describe how sounds are transmitted and received, we are concerned with acoustics (rather than articulation).*

Hei tauira, ko te oro nei, a [i], he āhua pēnei te tere o ngā karekare hau e toru e pā atu ana ki te taringa kia rangona ai e te tangata taua oro:

[i]: F0 = 200, F1 = 300, F2 = 1800.

Mō te [o], e pēnei ana: F0 = 200, F1 = 450, F2 = 900.

I te tangata e whakarongo ana ki tētahi kōrero, ka mau ēnei karekare i te taringa, ā, ka haere te karere ki te hinengaro, he [i], he [o], he aha kē rānei tā te taringa i rongo ai.

*For example, for the vowel [i], the frequencies of the three airwaves which reach the ear so that the hearer perceives this sound are approximately:*

[i]:  $F0 = 200$ ,  $F1 = 300$ ,  $F2 = 1800$ .

For [o]:  $F0 = 200$ ,  $F1 = 450$ ,  $F2 = 900$ .

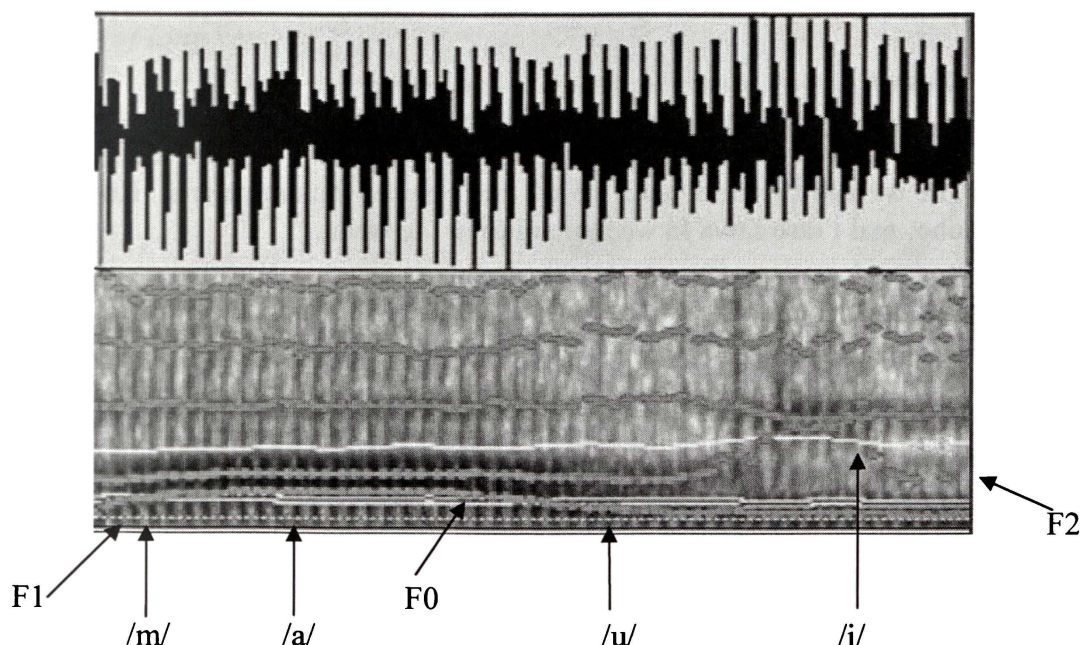
*As a hearer listens to speech, these waves are received by the ear, and the signal is passed to the brain that what the ear heard was [i], [o], or whatever else.*

Nā, i ēnei rā he pūrere, he mīhini anō hei ine i ēnei āhuatanga o te oro, ka taea hoki ki te rorohiko. Ko ngā pūmanawa rorohiko e whakamahia nei e tēnei rōpū rangahau ko: ‘Praat’ me ‘Akustyk’. Kāore he utu, he māmā hoki te tiki atu ki te ipurangi.

*There are now machines and computer software which measure these features of sound. The programs used in this project are Praat and Akustyk, both free downloads from the internet.*

Hei tauira, ko te kupu ‘Māui’ e whakahuatia ana e Raureti. Kei runga ake ko te whakaahua o ngā karekare hau, kei raro nei he raina e tohu ana i ngā inenga o aua karekare; arā, ko te raina āhua tōtika o raro, ko  $F0$ , ko ngā raina o runga ake ngā  $F1$ ,  $F2$ ,  $F...$ , nā, ko ngā mea e rua o raro ngā tino raina mō te ine i ngā oro. Ka kitea hoki te nekeneke, te piki me te heke o aua raina e hāngai ana ki te /a/, ki te /u/, ki te /i/ o te kupu.

*For example, take the word ‘Māui’ pronounced by Raureti. In the top part of the figure is a representation of the airwaves, below there are lines which represent the analysis of these waves; the relatively straight line at the bottom represents  $F0$ , the lines above  $F1$ ,  $F2$ ,  $F...$ , and it is the lowest two of these which are significant. One can see the shifts in the lines the rising and falling corresponding to the vowels /a/, /u/, /i/ of the word.*



Nā, ko te pai o ēnei tirohanga e rua, kei te hāngai tētahi ki tētahi:

Mai i runga ki raro, arā, e hāngai ana ki te heke o te arero, ko te nui haere o F1.

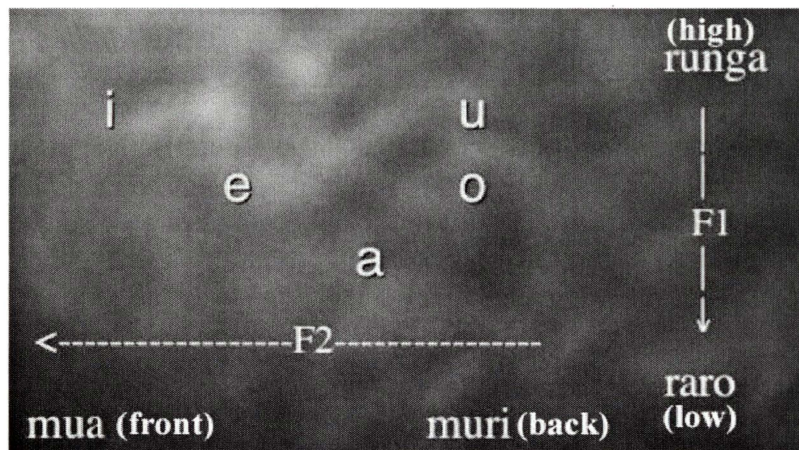
Mai i muri ki mua, ko te nui haere of F2. Nō reira, ka noho pēnei te kauwhata hei whakaatu i te wehewehenga o ngā oropuare.

*A convenient property of these two approaches (the articulatory approach and the acoustic approach) is that they match:*

*Tongue position descending from high to low corresponds to an increase in F1.*

*Similarly, the transition from back to front corresponds to an increase in F2.*

*Thus, the graph showing the vowel distinctions has the following appearance.*



Me mutu i konei te paku whakamārama i ngā tikanga me ngā taputapu o tā mātou mahi. Ka tahuri i tēnei wā ki te whakaatu i ētahi o ngā putanga.

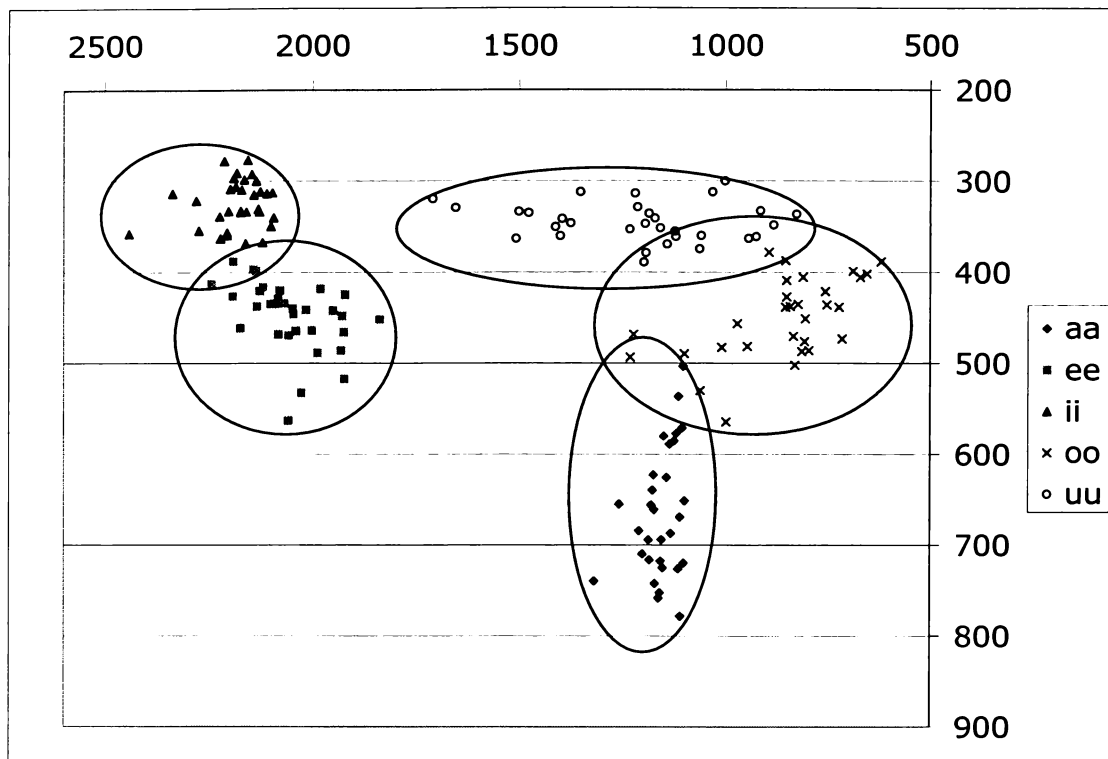
*Let that suffice as a brief explanation of the methods and equipment for the research.*

### **Ngā Putanga (Results)**

Hei tīmatatanga, anei te kauwhata (*Kauwhata 1*) o ngā oropuare roa i whakahuatia e Raureti. Ka kitea i konei, te whānui o ia oro, kāore i te ōrite i ngā wā katoa. Hei tauira ko te /u/, he wā anō kei muri rawa, he wā anō e neke whakamua ana. Ko te /a/, he whānui te noho, mai i raro rawa ki waenganui tonu i te waha.

*We turn now to some preliminary results. The following figure (Figure 1) displays the long vowels (signalled by a double letter in the legend) in Raureti's speech. One can observe the variation within each vowel: they are not identical all the time. For example, the /u/ is sometimes very far back, and at other times progresses towards the front. Similarly, the /a/ extends up from very low to a mid position.*

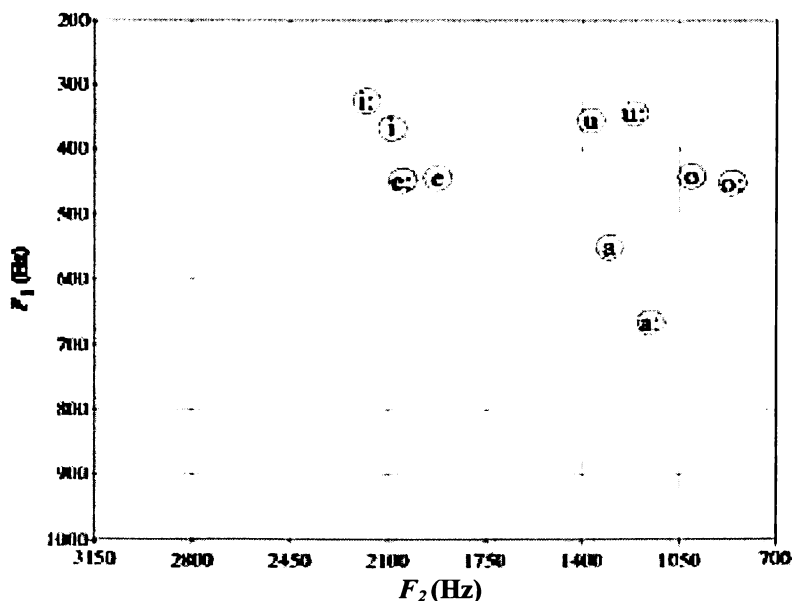
**Kauwhata 1: Raureti: Oropuare roa (Figure 1: Raureti: Long vowels)**



Ko te kauwhata nei e whakaatu ana i te whānui o te whakahua a Raureti i ngā oropuare roa. Kei te mea o raro nei (*Kauwhata 2*) ko ngā tino wāhi o ia oropuare, arā, te wāhi o waenganui tonu i te takiwa o ia oropuare, roa mai, poto mai.<sup>8</sup>

*This graph displays the range of Raureti's pronunciation of the long vowels. The following figure (Figure 2) shows the mean values for each vowel, that is, the central position for each vowel, both the long and the short.<sup>8</sup>*

**Kauwhata 2: Raureti: Whakawhānui o ngā oropuare roa (Figure 2: Raureti: Range of long vowels)**



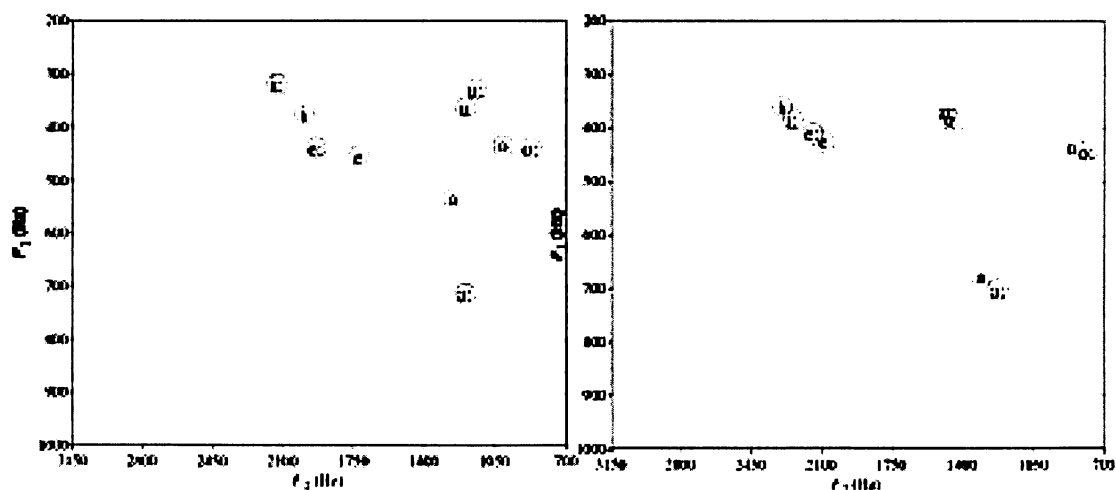
Kia pēnei te whakarāpopototanga o te whakahua i ngā oropuare, ka taea i nāianei te whakakotahi ki ētahi atu, te whakarite ki ētahi.

Kei te taha mauī o te kauwhata o raro nei (*Kauwhata 3*) ko te whakakotahitanga i ngā oropuare a Raureti me ā Hoani arā, a ngā kaikōrero TK, kei te taha katau ko te whakakotahitanga i ngā whakahuatanga a Matiu rāua ko Te Rau, arā, a te reanga taitamariki.

*When the pronunciation of the vowels of one speaker are summarised in this way, the results can then be combined and compared with other speakers' vowels.*

*The lefthand side of the following graph (Figure 3) displays the combination of Raureti's and Hoani's pronunciations, that is the two Sound Archive speakers', while the righthand side shows the combination of Matiu's and Te Rau's, as representatives of the younger generation of speakers.*

**Kauwhata 3: Ngā whakahuatanga o ngā kaikōrero (Figure 3: Pronunciations of the speakers)**



**Raureti rāua ko Hoani (Raureti and Hoani)      Matiu rāua ko Te Rau (Matiu and Te Rau)**

Ka kitea ngā rerekētanga. Ko te whakahua i ngā oropuare o nāianei kua kore e pērā tonu i tō tērā atu rautau. Kua whakanōhia tahitia ngā oropuare a ngā reanga e rua ki roto i ngā kauwhata o raro iho anō, kia māmā ake ai te kite atu i aua rerekētanga.

*The differences are easy to see. The modern pronunciation of the vowels is different from that of the previous century. The following graphs display the comparison of the vowels of the two groups, so as to make the differences clearer.*

Hei taurira:

1. I mua, i roto i te reo o ngā kaikōrero TK, ko ngā oropuare roa kei waho o ngā mea poto e noho ana; ko te /ii/ kei mua, kei runga hoki i te /i/; ko te /aa/ kei raro rawa i te /a/. Engari, ki te āta tirohia ngā whakahuatanga a te rōpū taitamariki, ka kitea he āhua ōrite te nohonga o ngā mea poto me ngā mea roa.
2. Ko te /u/ o nāianei, kei mua noa atu i tō tērā atu rautau. Kua neke whakamua i roto i ngā tau.

For example:

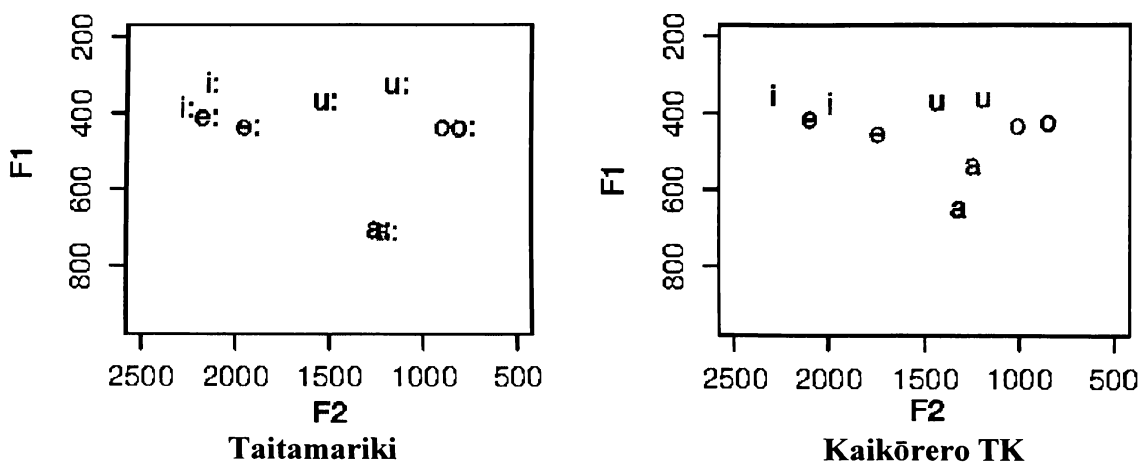
1. In the earlier group, the Sound Archive speakers, the long vowels lie well outside the short ones, that is, more towards the outside of the 'ba\ox', the 'articulatory space'; the /ii/ is further forward and higher than the /i/, the /aa/ is lower than the /a/. However, careful examination of the pronunciation of the younger speakers shows that the positions of the long and short vowels are very much the same.

2. The modern pronunciation of /u/ is much further towards the front (i.e., the tongue is raised more towards the front of the mouth) than it is in the case of the older pronunciation. It has fronted over the years.

Anei anō he whakaritenga:

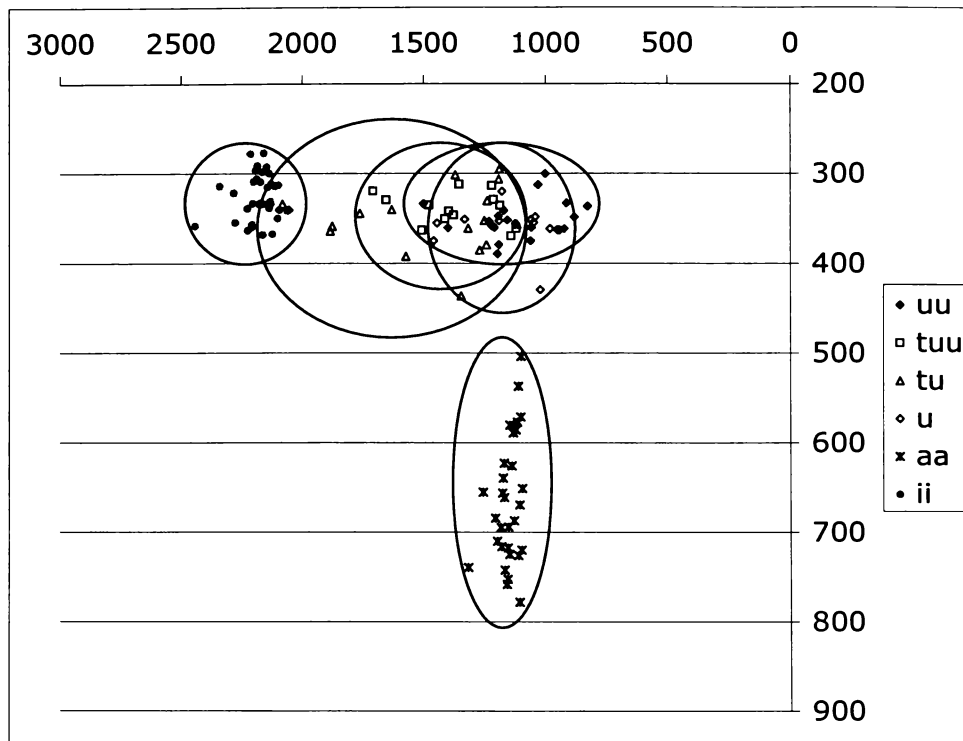
Here again are the comparisons:

**Kauwhata 4: Ngā whakaritenga o ngā kaikōrero (Figure 4: Comparisons of the speakers)**



Nā, ka kitea kētia ngā tīmatanga o taua nekehanga whakamua o te /u/ i roto i te reo ake o Raureti. Tirohia te kauwhata whakamutunga o raro nei. kei reira te /aa/, te /ii/, me ngā /uu/, /u/ katoa. Engari kua wehea mai ngā /u/ kei muri i tētahi /t/ e noho ana, ko ngā tapatoru me ngā porowhā puare.

*The beginnings of the fronting of /u/ can already be seen in Raureti's speech. The last graph below shows all Raureti's /aa/, /ii/, /uu/, and /u/, but those /u/ and /uu/ which follow /t/ have been separated out and designated with the hollow squares and triangles.*

**Kauwhata 5: Te whakahua o Raureti (Figure 3: Raureti's pronunciation)**

Te āhua nei, ko ngā /u/ i muri i te /t/ i neke tuatahi, ā, ko ērā atu katoa kāore anō kia neke i roto i te reo o Raureti, engari, i ngā tau mai i taua wā, ka whai mai te toenga o ngā /u/. Ka toko ake te pātai, nā te aha pea i pērā ai? Nā te āhua pea o te whakahua i te /t/, nō te mea i te tangata e whakahua ana i te /t/, ko mua o te arero e piki ana ki ngā niho, arā, te wāhi whakahua o te /t/ ko mua, ā, ka tōia te /u/ kia whai atu, kia māmā ake ai te whakaputa tahi i ngā oro e rua, i te /t/ me te /u/ o muri tata atu.

*It seems that those /u/ which follow /t/ were the first to shift forward, while the others had not yet begun to shift in Raureti's pronunciation. In the succeeding years until the present these other instances of /u/ have now also moved forward. The question arises as to why this has happened. It is perhaps the way in which /t/ is pronounced, since this involves bringing the front of the tongue towards the teeth, that is, the /t/ is a 'front' sound and attracts the /u/ towards itself to facilitate articulation of the /t/ with immediately following /u/.*

**He whakaaro (Some conclusions)**

Heoi anō, me waiho ēnei paku kōrero hei whakamārama i ngā whāinga me ngā tikanga o te rangahau nei. Ā te wā pea mā ngā mahi pēnei e taea ai te tāhu o te hītori o te reo Māori te whakatakoto, me ngā kōrero e whakaatu ana nā te aha i pērā ai.

*These then are the goals and methods of this research project. In due course, such research will provide considerable detail on the history of Māori and suggested explanations for the changes which have taken place.*

## Endnotes

1. Ko ngā tino kōrero mō te whakahuatanga o te reo Māori kei ngā pukapuka a Biggs (1961) rāua ko Bauer (1993). Ko ngā whakamārama whānui mō te rangahau i ngā oro reo kei ngā pukapuka pērā i tā Ladefoged (1982).

1. *Full accounts of the pronunciation of Māori can be found in Biggs (1961) and Bauer (1993). Ladefoged (1982) provides a good introduction to the study of phonetics.*

2. Ko te tūmanako, kia whakawhānuitia te titiro kia āta rangahaungia ai hoki te reo o te wāhine.

2. *It is hoped in due course to extend the study to women's pronunciation.*

3. Tirohia Maclagan and King (2002).

3. *See Maclagan and King (2002).*

4. Ko te tikanga o te tohu [ɸ] e pēnei ana me te 'f' of the reo Pākehā engari ko ngā ngutu e rua e pātata ana, ānō nei kei te pūhia atu he makawe kei te waha e takoto ana. Ko te tikanga o te tohu [ɱ] e tohu ana i te oro 'wh' o te reo Pākehā o ētahi, arā, te whakahua o ngā kupu 'white, whale' etc.

4. *[ɸ] designates a sound rather similar to 'f', but involving both lips, as if one were blowing away a hair lying across the mouth. [ɱ] is the sound used by some speakers of English in words spelt with 'wh', such as 'white, whale', etc.*

5. I te whakahuatanga o te [u], e kūtia ana ngā ngutu.

5. *Note that the lips are rounded in the production of [u].*

6. Ko te āhua o te noho o ngā ngutu me te arero i roto i ēnei pikitia he 'whāinga'. Ko ngā oro o mea reo, o mea reo kei te āhua hāngai, kei te whakatata ki ēnei whāinga. Nō reira, ka taea te kī, i runga anō i te noho o ngā ngutu me te arero i roto i mea reo, ko mea oro 'e tata ana ki te [u]', 'kei te whai i te [u]', 'kei waenganui rānei o te [u] me te [o] e whakahuatia ana'.

6. *Note that the position of the lips and tongue in these diagrams provides us with a series of 'reference points'. The actual sounds produced by speakers of particular languages can be related to these reference points. Thus, depending on the actual position of the lips and tongue, a sound may be said to be, for example, within the general domain of [u] or somewhere between [u] and [o].*

7. I te whakahuatanga o te [o], kāore i te pērā rawa te kaha o te kūtia o ngā ngutu i tō te [u].

7. *Note that the lips are less rounded in the production of [o] than they are in the case of [u].*

8. Ko ngā kupu 'oropuare poto', 'oropuare roa' he kōrero mō te rerekē o ētahi oropuare, o tētahi i tētahi, i runga anō i te roa o te whakahuatanga. Ko te oro kotahi (ētahi oro e rua rānei e tino tata nei te whakahua) he 'poto' mena he poto noa iho te wā o te whakahua, he 'roa' rānei ki te mea he roa ake te wā o te whakahua.

8. *The terms 'short vowel' and 'long vowel' are relative. They are used to refer to distinctions that are based on the duration of sounds. Thus, the same sound (or a very similar one) may be 'short' (lasting for a short time) or 'long' (lasting for a longer period of time).*

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