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Mā te hangarau te oranga o te reo Māori e tautoko ai?
Can technology support the long-term health of the
Māori language?

A thesis submitted in fulfilment
of the requirements for the degree

of

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THE UNIVERSITY OF
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Abstract

Can contemporary technologies be used to support the ongoing health of an endangered language? Since the late twentieth century unprecedented and substantial social changes have been propelled by advances in contemporary technologies. Continuous connectivity harnessing digital communication, mass media and social networking has enabled instant diffusions of ideas, viewpoints and values. Unrestrained broadcasting and publishing by the general populace and the absence of the traditional media gatekeepers has been linked to the weakening of traditional cultural and linguistic ties as the private, more intimate oral domains inherent to minority indigenous cultures are being opened up to more public modes of consumption. Additionally, significant numbers of minority language speakers switch from the use of their own languages in digital environments to a language that is globally more recognisable. This type of digital language switching emulates the historical occurrence of language shift as minority language speakers opt to use a language that they perceive to be of more benefit to themselves and to their children.

Ironically, language revitalisation initiatives are embracing the ubiquitous attributes of digital technology. A joint venture between the Microsoft Corporation and the University of Waikato resulted in Māori-language interfaces for Microsoft Office and Windows. These and similar interfaces for a range of other applications were investigated. The testing groups were largely unaware the translated interfaces existed and expressed pleasure and pride to see te reo Māori within the various technologies. Following engagement the feedback was less positive. New words, unfamiliar uses of words and poor translations were cited as significant difficulties. Ensuing navigation was often hesitant and uncertain. Were the translations unsuitable? Is te reo Māori unusable within these technologies? The high incidence of task completion suggests difficulties may have arisen from a previous competence with the technologies in another language - English in this case. Future initiatives would do well to consider that perceived difficulties might arise from factors other than the design of the interfaces themselves.

Te reo Māori is being used on Twitter. Particular events significantly impacted the use of tweeting in te reo. During Māori Language Week the number of tweeters increased. During the Matatini Festival the volume of tweets increased. While creating an online Māori-language community, a range of strategies became necessary to maintain and prolong some conversations. At times, bilingual tweets extended faltering conversations. Sometimes forwarding tweets drew success. Furthermore, a significant number of people preferred to watch without engaging directly – perhaps a target area for future strategies.

Te reo Māori is a viable option within various technologies as evidenced by the increasing use of the language on a range of contemporary platforms. Translated interfaces provide opportunities for language promotion and extensive language visibility. The development of an online language forum has shown that conversations in te reo Māori can be successfully fostered using social media. Understanding the differences between the static visibility of translated interfaces and the dynamic nature of online conversations can be a huge asset for language strategies once issues of awareness, perception and extended engagement are successfully addressed.

Key words: Te Reo Māori, Māori Language Strategy, language revitalisation, digital technology, translated interfaces, language communities.

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This achievement is not the work of one, but the work of many

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- Te Puna Tautoko – Māori student support
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- MAI ki Waikato (Māori and Indigenous research students)

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¹ At the time of writing, Professor Smith was Pro-Vice Chancellor Māori.

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Preamble

Whakataukī

Ka ngaro te reo, ka ngaro tāua, pērā i te ngaro o te Moa.

If the language is lost, man will be lost, as dead as the Moa.

This whakataukī speaks to the importance of preserving a language that carries the heritage and uniqueness of its speakers. Te reo Māori is indigenous to Aotearoa/New Zealand and is spoken nowhere else in the world. The language conveys the rich history and culture of the Māori. The sustained health of te reo Māori is of utmost importance for Māori, since their poetry, song, and tikanga (*protocols*) can only be accurately conveyed using te reo. If the language were to fade and no longer be spoken, the identity of Māori, the expression of their world view, the histories and stories that underpin their culture, would ultimately fade and the Māori would be lost – hence, “as dead as the Moa².”

(Waitangi Tribunal, 1986, pp.13,14)

Pepeha

Ko Te Arawa tōku waka

Ko Mātaatua tōku waka

Ko Tūwharetoa tōku iwi

Ko Te Whānau-ā-Apanui tōku iwi

Ko Ngāti Hine tōku hapū

Ko Te Whānau-ā-Te Ehutu tōku hapū

Ko Korohe tōku marae

Ko Tūkaki tōku marae

Ko Tongariro tōku maunga

Ko Whanokao tōku maunga

Ko Taupounui-ā-Tia tōku moana

Ko Mōtu tōku awa

Ko Waikato tōku awa

Ko Apanui Ringamutu te tangata

Ko Te Heu Heu te tangata

My pepeha I consider to be a rite of passage – a passport of sorts. My pepeha describes part of my ancestry, how that ancestry links me to certain areas of New Zealand and where those regions are located in terms of features like mountains and rivers. Part of my identity as Māori is outlined here (others parts such as tūpuna

² The Moa is an extinct species of bird that was native to Aotearoa/New Zealand

(*ancestors*) and whakapapa (*lineage*) are sometimes included by others). I would be foolish and somewhat arrogant to assume that anyone reading this pepeha is immediately interested in my connection to those places mentioned. It is much more the case they will search for their own connection first. Can they link to these places or these people? Do they know anyone from these places? And so forth. It is likely my own connections come into consideration after the reader has recognised their own link if there is one. This realisation came to me when I was in London. Upon meeting other Māori we were more interested in where each of us was from – did we know so-and-so, which marae do you hail from? It seemed that after each of us had formed some sort of link with the other, through our ancestral ties, then we could progress to learning each others' names. It felt appropriate and grounding that even on the other side of our planet this was still 'our way'.

This research

In 2005 as a student in the Department of Computer Science at the University of Waikato I was aware of a joint project between the Microsoft Corporation and the University of Waikato. Translators from the University were in the processes of interpreting the interfaces for Windows XP and the Microsoft Office suite for use in te reo Māori³. At the time I thought this was 'pretty cool'. In the processes of learning to speak te reo Māori, I thought I should engage with Ms-Word using the Māori-language interface. After a few attempts I abandoned the idea and reverted back to the English-language version. I found the Māori-language interface difficult to navigate and my understanding of the language made progress frustratingly slow. With the benefit of hindsight I see one of the problems was my previous exposure to the English-language version and an expertise gained from prolonged use and some specific training (in English). I would come to realise the other problem was that I was continually translating te reo Māori back into English. At that time I opted for what I considered to be a less painful, more expedient option. That is one likely reason that my grasp of te reo Māori is still frustratingly rudimentary.

³ Discussed further in Chapter 4

This particular research journey arose from conversations with Dr. Te Taka Keegan⁴ regarding the translated interfaces of Windows and Office. Te Taka has a knack of asking questions and positing situations in ways that compel resolution. At that time, in 2011, we wondered whether or not the Māori-language interfaces were being used and, if so, to what level. Did people know these interfaces existed with a Māori-language option? When they did know, what were their perceptions of being able to engage using te reo Māori? Te Taka did all the leg work for the initial survey, described in Section 4.2, and then became the instigator, facilitator and driver for the much larger nationwide survey described in Section 4.3. The research might have ended there but part of the feedback from the larger survey described a Māori-language option on the BNZ automated teller machines (ATMs). That wider research journey around translated interfaces is presented as Chapter 4.

A conference facilitated by Ngā Pae o te Māramatanga in 2013 provided an opportunity to present much of this research that by then had grown to include the use of te reo Māori in blogs and micro-blogs⁵. The data quantifying Māori-language tweets had been gathered from the Indigenous Tweets website which is described in Chapter 5. To say that I was pleasantly surprised that Professor Kevin Scannell, the creator of that website, was sitting in the audience is an understatement. Kevin became an avid supporter, sharing his work and his ideas without reservation. A significant proportion of Chapter 5 is valid and sensible because of Kevin's shared expertise. Note that Kevin's work has not been replicated by anyone (as far as we know) for the use of minority languages within Facebook. For this reason alone, the research performed on the Twitter platform was not applied to Facebook.

⁴ Dr Te Taka Keegan is a senior lecturer in Te Mātauranga Putaiao Rorohiko me te Pāngarau (*The Faculty of Mathematical and Computing Sciences*) at Te Whare Wānanga o Waikato (*The University of Waikato*)

⁵ Described in Section 5.1.1

This research might be considered to be somewhat dated. The field work and analyses were completed in 2015. My sabbatical in 2016 means that the investigative work and most of the research outcomes are now over two years old. The discussion and analysis sections have been revisited and updated where it has been sensible to do so. This includes references to updated web pages, some technologies such as ATM interfaces and current analyses of Māori-language tweeting. Some reference has also been made to the Māori Language Act 2016, and the resulting Te Ture mō te Reo Māori 2016 / The Māori Language Act 2016 which repealed the original Māori Language Act 1987. However, the priority of completing and delivering this research meant further investigations into more recent developments have not been undertaken in any significant depth.

Conventions

All references cited follow the American Psychological Association (APA) format. Where the source is a personal communication, however, this has been identified using a footnote rather than in-text citation.

Although many Māori words may have multiple translations they have each been used in consistently the same context throughout this thesis. Therefore an English translation, written in italics and contained in parentheses, is included immediately after the first use of each word and in some cases a brief explanation is included as a footnote. At times the English translation may also be repeated in an effort to minimise the need to backtrack to a previous translation.

Most kupu Māori (Māori *words*) have the same spelling for the plural versions of the singular. For instance kupu might mean *word* or *words* – depending on context. The English language used around the Māori word would assist the reader to determine the difference. For example, 'the kupu is', vs. 'the kupu are'.

Some sections contain extended texts written in te reo Māori. Where these texts have not been translated the reader will know that these particular messages are written specifically for people who will understand their meaning.

Whakatauki, whakatauāki, whakatauākī (*proverbs*) can most times be used interchangeably, however, in terms of accuracy, when the originator or orator is known, the correct usage is whakatauākī.

Pākehā refers to those New Zealanders who are not Māori. It is a term usually applied to New Zealanders of European descent. In this thesis, the term is used to differentiate rather than to define and therefore no other translation is given. This thesis includes the use of Pākehā and Pakeha. The use of Pākehā is used where the writing is mine and is not a direct quote from another author – in which case the term 'Pākehā' or 'Pakeha' is used as an accurate reflection of the original quote.

The tohūtō (*macron*) is used in the written form of te reo Māori to signify a double vowel which is pronounced with an extended sound. For instance, the pronunciation of the 'a' sounds in Pākehā should have a longer duration than the 'a' sounds in Pakeha.

Te reo Māori', 'te reo', and 'reo', are used interchangeably with 'the Māori language'. 'Māori' has also been used although most often refers to the people rather than the language. 'Māori' is used to mean the language only when the context is clear within the writing.

Where quotes from other authors have been used, they have been inserted verbatim. Conventions such as tohūtō (*macrons*) have not been added where they are missing from the quote. Where mistakes in quotations may be construed, such as adding the English possessive format to a Māori word, for example, Māori's, [*sic*] has been inserted within the quote to signify the anomaly is contained in the original writing.

Where website authorship can be attributed to an organisation that is known by either their Māori title or their English title, I have endeavoured to use the prominent author name on the relevant webpage. Ministry of Education vs Te Tāhuhu o te Mātauranga is one such example. I am also mindful of the philosophy of Dr. Pat Hohepa who reasons that the predominant use of Te Taura Whiri i te Reo Māori instead of The Māori Language Commission, for instance, is more than a translation shift – it is also a shift into the Māori world, one of the Two Worlds which comprise Aotearoa/New Zealand. In terms of this writing, that philosophy is merely applied to specific organisations whose Māori titles are far better recognised (by New Zealanders) than their English titles. Te Māngai Pāho (*The Māori Broadcast Funding Agency*) and Te Puni Kōkiri (*The Ministry of Māori Development*) are two further examples.

In terms of citations from a single website that has multiple webpages, the url⁶ or address for the root page has been referenced where that page shows a menu system or links that makes further navigation relatively intuitive. The aim of the single reference is to minimise clutter and ambiguity both in the references section and in in-text citation.

The Māori name for New Zealand is Aotearoa. Both versions can be used separately or together as in 'Aotearoa/New Zealand'.

The term 'indigenous' is used widely within this thesis in its generic form, referring to indigeneity in wider contexts. As such the initial letter is not capitalised as it would be if the reference was to a specific Indigenous people.

Terms such as restoration, revitalisation and regeneration have been used interchangeably within this thesis to describe the overall concept of reversing language shift rather than the particular nuances that each of those words define. I appreciate that this is not an accurate use of the terms and apologise in advance to linguists, language experts and those who would deem such usage overly cavalier.

⁶ url: a uniform resource locator, sometimes called a web address, is a reference used to locate and retrieve a web resource

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1

Mā te hangarau te reo Māori e ora ai?

Whakatauāki

Ko te manu ka kai i te miro, nōna te ngahere.

The bird that feeds on the berries (of the Miro tree), its domain is the forest.

Ko te manu ka kai i te mātauranga, nōna te ao.

The bird that feeds on knowledge, its domain is the world.

This whakatauāki reflects a time in our history when the attainment of knowledge and learning provided tools, and perhaps a particular outlook, that enabled a 'broadening of one's horizons' and helped to make the world 'smaller' and more accessible for a portion of the population. The sentiment still holds true, however, the amount and depth of knowledge that can now be accessed by the general populace, using a range of recently developed technologies, would have been largely inconceivable a few decades ago. In fact, vast stores of online information have grown exponentially each decade since the 1970s and an array of contemporary technologies has enabled an unprecedented ability to acquire information and knowledge. Using the World Wide Web to access the Internet is fairly commonplace. Mobile technology means continuous connectivity, even when one is on the move, is a capability that is now widely taken for granted. The ease of access to knowledge, data and information ensures that the world is a much more accessible domain. In terms of this whakatauāki, that ease of access would impact a larger proportion and a wider cross-section of the 'bird' population.

1.1 Introduction

Everyday global, national and local interactions have come to embrace the prevalence of digital technologies. For the general populace this is underpinned by the provision of technologies that enable an unprecedented connectivity and the ability for continuous sharing (with varying levels of interactivity with other people). The impact on social change has been phenomenal. At times it would appear that interactions in the virtual world are as important as they are in the 'real' world – evidenced by a general use of mobile technologies in everyday situations and a widespread dependence upon the connectivity that those technologies provide. The growth and global uptake of social media platforms such as Facebook, YouTube, Instagram and Twitter would suggest that the potential to be received, and perhaps read, by the multitudes - whether known to the publisher or not - is hugely important to a significant portion of the world's population. At an estimated 1,500 million unique monthly visitors, Facebook edges out YouTube⁷ in terms of levels of engagement but, more importantly, the numbers imply a level of engagement worldwide that would have been inconceivable a few decades ago. General access to the internet might currently be considered run-of-mill, for example, but that access has only been widely possible since the advent of the World Wide Web⁸ in 1989.

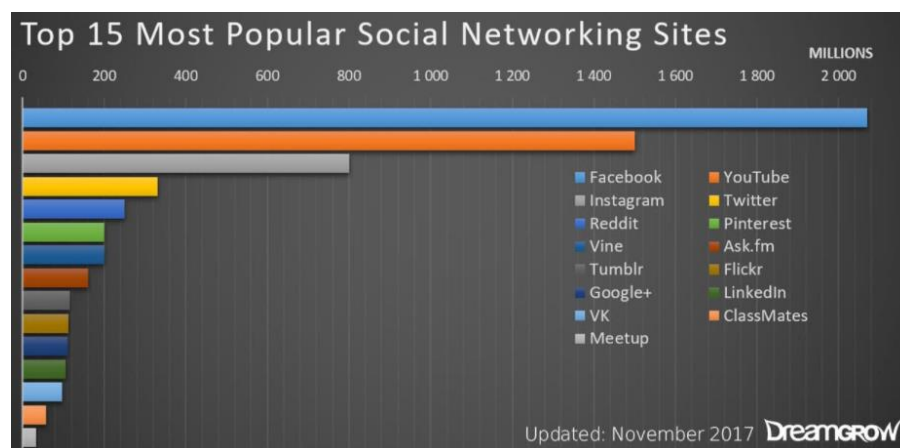


Figure 1: Most popular social networking sites⁹ (Last update – 8 January 2018)

⁷ See <http://www.ebizmba.com/articles/social-networking-websites>

⁸ A protocol for accessing some of the information contained within the Internet (also referred to as WWW, W3, the Web).

⁹ See <https://www.dreamgrow.com/top-15-most-popular-social-networking-sites/>

In order to be widely received while using social networking sites, one would appreciate that the use of a widely recognised language would be necessary. Conversely, the incursion of contemporary technologies into areas that have traditionally been the sanctum of an indigenous minority language means that local users of those technologies are under pressure to engage using a major language. The resulting language-switching in both instances emulates historical occurrences where language communities have chosen (or have been forced) to use a more dominant language that is politically or economically more powerful, or, perceived by minority language speakers to be more useful and more prestigious for themselves and for their children.

When language communities shift their everyday language use to that of another language, for whatever reason, it generally means their own language will become less spoken or will change over a period of time, until the original language will cease to be spoken or heard. Over 90% of the world's 6,000 or so languages are considered to be minority languages. The plight of those languages and their levels of endangerment in terms of language loss, although not a new phenomenon, is recognised as a worldwide crisis. The decline of languages worldwide has been well documented and linguists and language experts now predict the loss of approximately 3,000 languages within the next few generations¹⁰ (Harrison, 2007; Janson, 2002; UNESCO, 2009).

The world's treasures begin to diminish when a language ceases to be spoken. The unique ideas and beliefs, the relationships and ways of doing and the distinctive views of the world that were carried by that language become difficult to portray and describe accurately. The memories of particular traditions and communal peculiarities, linked to a people and conveyed by their language, are consequently presented in another language as tarnished interpretations. In the worst case, the connection to those people exists only as archived histories, the original culture fading with the declining use of the language until both are lost as living reminders. The loss is generally heralded by a brief obituary to mark the passing of the last fluent speaker followed by fleeting references to a lost culture as the years pass by.

¹⁰ These points are discussed in depth in Chapter 2.

During the 1970s concerns were expressed regarding the poor health of the Māori language and the prospects of survival for te reo Māori as a living language (BRC Marketing and Social Research, 2002). Some predicted that within the passing of one generation native speakers of the Māori language would cease to exist (Te Puni Kōkiri & TeTaura Whiri i te reo Māori, 2003). Initiatives over the past 50 years or so have sought to halt the decline of te reo Māori and to increase the number of fluent speakers. The language enjoyed a brief resurgence, especially in the 1990s, but recent statistics are less positive. According to Statistics New Zealand (2013, p.11), "[i]n 2013, 125,352 Māori (21.3 percent) could hold a conversation about a lot of everyday things in te reo Māori, a 4.8 percent decrease from the 2006 Census."

Technology-based solutions have been widely utilised by Māori to secure the health of their language. Websites exist that are totally in te reo. Whānau (*family*), hapū (*sub-tribe*) and iwi (*tribe*) have set up sites that ensure their own members (and others) are able to access 'information from home' and stay in touch regardless of where they may be in the world. Other sites have been built as repositories of information, resources for language learning and online reading, and dictionaries to assist translation. The development and provision of stores of text and related resources for teaching the language have been a focus for many initiatives. Language and cultural regeneration initiatives have employed a variety of technology-based options that were previously unavailable. More recently, developments have included the provision, in te reo Māori, of interfaces for a number of popular web-based and computer-based applications. Translated interfaces are now available for a variety of applications that include MS Office, Windows and the Google search engine. Interfaces have also been translated for other technologies that now include mobile phones, learning management systems and self-service machines such as automated teller machines (ATMs) and library issuing devices¹¹. However, there is no clear overarching strategy aimed at aligning a host of well-meant initiatives that, for the most part, seem to operate independently of each other.

¹¹ These technologies are discussed in Chapter 4.

1.2 Thesis Statement

Technology-based solutions should be tailored to support the widespread use and visibility of te reo Māori, to increase the number of arenas and situations where using te reo is considered normal, and to promote daily use of te reo in a variety of contexts. Investigations into existing initiatives need to be considered as part of Māori language strategies aimed at securing a strong future for the language. The outcomes of any such investigations would be useful in identifying issues of engagement and perception, determining where the current gaps might be in terms of language use, creating templates that could be utilised for other technology-based solutions, and informing language policy at a regional and a national level. It will also be important to recognise the differences in language use when one is engaged with translated application interfaces versus engaging conversationally within social platforms for instance. The main singular difference might highlight the static nature of language visibility, in terms of translated interfaces, and the more dynamic visibility of language use within online language forums.

The minority voices of the indigenous are a rare occurrence in the language of global contemporary technologies. It might be ironic then to expect that the use of these technologies can bolster and sustain the health of an endangered minority language. Even more so when one considers that the recent exacerbation of minority language decline has been attributed in no small part to recent advancements in digital technologies. This research will investigate the use of te reo Māori within some selected technologies and questions the role of those technologies, and technology in general, within Māori-language strategy. The investigations will aim to identify areas of effectiveness in terms of interactions within the technologies and to identify usability and engagement issues that may need to be addressed prior to implementing technology-based initiatives for language acquisition and use. Given the ubiquitous nature of digital technology, it is an expectation that some outcomes of this research might also be useful for other minority groups seeking to reverse the effects of language shift and to implement programs aimed at restoring the health of their own languages.

1.3 Rationale

Te reo Māori is classified by a UNESCO report as being ‘vulnerable’, that is, most children speak the language, but only in certain domains (e.g. in the home)¹² (UNESCO, 2009). A closer look at the definitions would suggest the health of te reo Māori sits somewhere between ‘definitely endangered’ - children no longer learn the language as a mother tongue in the home, and ‘severely endangered’ – the language is spoken by grandparents and older generations; while the parent generation may understand the language, they do not speak it amongst themselves nor do they speak it to their children. Languages are considered to be at risk when they are not transferred to children. The younger generations are considered to reflect the pulse of a language – “even languages which older, but not younger, children in a community have acquired are at risk” (Nettle & Romaine, 2000, p.8). The transfer of a language from one generation to another, referred to as ‘intergenerational transmission’ is widely considered to be the cornerstone of language revitalisation strategies and the most critical success factor for the survival of languages (Chrisp, 2005; Fishman, 1991:2000; Lewis, 2009). It might be the case that some technologies are able to engage younger generations using ‘at-risk’ languages. While language transfer within these technologies may not be intergenerational in the normal sense, benefits might be realised where engagement amongst younger generations in an endangered language can be strategically utilised to foster ongoing interactions in a variety of settings.

Language regeneration initiatives have embraced the storage capabilities, widespread portability and continuous availability of a variety of information and communication technologies. Importantly, these opportunities also provide new avenues to promote and preserve languages and cultures (Kai’ai, McDonald & Moorfield, 2006). Education providers now have the ability to provide computer-based teaching and learning resources and the capability to circulate information over the World Wide Web using technologies such as electronic mail and learning management systems. Current developments include the provision, in te reo Māori, of interfaces for a number of technologies and applications. Te reo Māori is also

¹² Language endangerment and language vitality is discussed in more depth in Chapter 2.

being used on Twitter. As indigenous people become increasingly concerned about the health of their language and cultures, they are becoming more interested in a range of technologies as one part of the answer to preserving language, knowledge and traditions for future generations (Dyson & Underwood, 2005).

Indigenous websites already exist that represent indigenous organisations and promote indigenous e-commerce. They also further the unique concerns of indigenous communities that include cultural maintenance and revitalisation (Dyson & Underwood, 2006). The digitisation of Māori and Hawaiian newspapers highlights the use of digital libraries as cultural repositories that are available on the internet, free of charge, and with language switchable interfaces (Keegan, 2007). The ability to use an increasing range of technological devices and applications in an endangered language increases the opportunity to engage and inspire learners to learn and use those languages.

It might seem that the ability to engage with various technologies using te reo Māori would be beneficial for the language. It might also seem that the provision of Māori-language translations for selected interfaces for a range of technologies would be useful even if only in terms of language visibility. However, minimal collaboration between technology-based Māori-language initiatives has resulted in a lack of strategic synergies that these types of ever-growing resources may have been able to provide. This has been compounded by the paucity of definitive studies that relate the availability of these technologies to outcomes that will support language survival and revitalisation. The value of initial investigation may well be derived from the identification of issues around awareness and engagement. There doesn't appear to be any immediate value in developing Māori-language capability in technology if that capability is unknown or unused. Furthermore, if the perception of the use of te reo within those technologies is negative, and overall engagement doesn't happen, one might question the value of these types of developments. It would therefore be useful to identify issues that impact on general engagement and perception and to determine how particular technologies can support the survival, revival and continued health of te reo Māori.

1.4 The Research

This research arose primarily from the availability of Māori-language interfaces for Windows XP and Microsoft Office 2003. The interfaces were a result of a joint project with the University of Waikato (as technology partner with Te Taura Whiri i te reo Māori (*The Māori Language Commission*)) and the Microsoft Corporation. One might expect that the use of popular applications in te reo Māori would be beneficial in terms of improving the health of the language. However, five years after the launch of the original Māori-language interfaces, the levels of engagement with these interfaces remained largely unknown. In 2010, other Māori-language interfaces were available for applications that included Google web-search and Moodle – a Learning Management System. Initial investigations canvassed selected schools to gauge levels of awareness and issues of engagement and perception with regard to these translated interfaces. That investigation was extended, in conjunction with the Ministry of Education, to include Māori-medium schools nationally. The research base also broadened to include the translated interfaces for self-service machines and mobile technology. The projects based upon the Māori-language interfaces are described in Chapter 4.

The Māori-language interfaces could be expected to provide visible cues that te reo Māori can be used within contemporary technologies. However, engagement with those interfaces might be regarded as passive given that users are navigating and selecting from pre-set menus. Since one measure of language health can be gauged by how the language is used to interact and communicate with others, the scope of investigation was widened to propose the use of te reo Māori within language forums – more especially using online social networking. Existing functionality allowed the analysis of the use of te reo Māori within the Twitter¹³ platform. For this reason alone Twitter was used as the de facto social media platform for gauging the online use of te reo Māori and for the development of an online Māori-language community.

¹³ This is discussed in depth in Chapter 5

The overall aims of this research are to determine:

- issues of engagement and usability when interacting with selected technologies using te reo Māori;
- the perceptions of the use of te reo Māori within digital technologies;
- the role of technology in the restoration of te reo Māori; and,
- how particular technologies can be used to support the ongoing health of te reo Māori.

Underlying themes will include:

- issues around language switching and reversing language shift (both globally and for Māori);
- the considerations for halting and reversing the declining health of an endangered minority language;
- the usefulness of this research for other minority languages that may be endangered; and,
- the usability of contemporary technologies within language strategy.

1.5 Research questions and methodology

Four research areas will be examined.

1. The use of te reo Māori within contemporary technologies;
2. Normalising the visibility of te reo Māori within technology;
3. Language loss and Reversing Language Shift (RLS); and,
4. Technology-based solutions for language revitalisation strategies.

The research proposes to answer this question:

Can digital technology be used to support the ongoing health of te reo Māori?

Two types of technology engagement are considered:

1. Māori-language application interfaces
 - Single user engagement with a translated interface
2. A Māori-language community using social media
 - Wider access to the public
 - Multiple participants within the conversations.

During the course of this research the following methodologies have been used:

1. Critical literature review - a global picture of endangered languages, language shift and language survival and revival.
2. Archival search - an outline of particular histories and milestone events in New Zealand.
3. A rudimentary analysis of selected Māori language strategies and initiatives.
4. Informal survey - translated software interfaces: issues of awareness, engagement and perception.
5. Formalised survey - translated application interfaces: an extensive (nationwide) investigation to determine issues of awareness, engagement and perception.
6. Collaborative project - screen modifications on automated teller machines (nationwide) to gauge the effect of increased Māori-language visibility on engagement with the Māori-language screen option.
7. Activity testing and questionnaire - library self-issue machines, engagement and perception.
8. Usability study - using a Māori-language interface on a smartphone.
9. Data analysis - the Māori language profile on Twitter.
10. Informal engagement - developing a Māori-language community on Twitter.

The methodologies and methods used for each of the investigations have been described further within the relevant sections.

1.5.1 Thesis Structure

Chapter 1 – An introduction to the research

Chapter 2 – Reversing Language Shift – a review of selected literature

- Languages in crisis (endangerment and loss)
- Reversing language shift
- Intergenerational transmission
- Digital Natives and intragenerational conversations

Chapter 3 – Reversing Language Shift in Aotearoa/New Zealand

- an historical outline of some milestone events in New Zealand:
 - European contact,
 - The New Zealand Declaration of Independence,
 - The Treaty of Waitangi,
 - The Waitangi Tribunal,
- Māori language strategies

Chapter 4 – Translated Interfaces – issues of awareness and engagement

- Translated application interfaces
 - Preliminary survey,
 - Secondary survey.
- Self-issue machines
- Smartphone

Chapter 5 – Te Reo Māori and Social Networking (Twitter)

- The Māori-language profile on Twitter
- Influencing Māori-language tweeting
- Developing a Māori-language community on Twitter

Chapter 6 – Summary discussion and conclusions

- Discussing the issues and observations arising from the research
- Limitations of this research and future research directions

1.5.2 Research Ethics Comment

The use of particular methodologies, specifically surveys, usability testing and the use of questionnaires, during this research process required ethical approval. The ethical application was widened to include the intention to engage within social networking and to develop a Māori-language community within Twitter. Since the proposed research was deemed to include typical methodologies that are used within Computer Science ethical consent was approved by the Ethics Committee of The Faculty of Computing and Mathematical Sciences, University of Waikato.

1.6 Expected Outcomes

Using a selection of digital technologies, this research proposes to:

1. determine language suitability i.e. whether or not the extended use of te reo Māori can be fostered within digital technologies; and,
2. identify whether or not those technologies can then be used to successfully support the ongoing health of te reo Māori.

1.6.1 Language use and technology

Intergenerational transmission is regarded as the cornerstone for ensuring language health and longevity. Younger generations are a primary focus for revitalisation strategies where intergenerational transmission is normally fostered in the home environment, neighbourhood and close community. It is evident that the younger generations are actively engaged with various forms of contemporary technologies. The use of te reo Māori in technological domains and the way that users interact with the technologies and with each other will be critiqued to identify whether or not these conversational spaces can suitably promote language use and support language learning. It may be that prolonged engagement, using te reo Māori, provides similar gains where the focus is more on overall language use rather than language transmission intergenerationally.

A key component of ongoing language health is ensuring that the language is always being used by the younger generations. The current digital awareness of younger generations might imply a rethink in terms of education, language acquisition and language use. Strategies that have been used historically may no longer be as successful as they once were. Do language initiatives aimed at influencing the way digital technologies are used need to be tailored for particular generations? If younger generations were to be encouraged to use te reo Māori while they were engaged with digital technologies, it would be useful to know what approaches would have the best results (and which ones don't). The activities used in this research will be observed with these points also in mind.

Investigations centred on a selection of translated application interfaces will seek to quantify general awareness levels of each of the selected interfaces. The aim will be to provide measures of uptake and interaction. Do people know the interfaces are available in te reo Māori? Are those interfaces being used? Activities that include observed engagement and usability will be undertaken to determine the effectiveness of the interfaces in terms of encouraging uptake and prolonged interaction. Are they perceived to be easy to access and use? What are the general perceptions of the participants who agree to use and critique the efficacy of the interfaces? Can or should those technologies be utilised in Māori-language strategies? Language restoration is a long journey. How should translated technologies evolve to reflect the changing needs of speakers of te reo Māori? The ability to use te reo Māori within some contemporary technologies generates a raft of questions that tend to gravitate around issues of engagement and usability. The activities that have been undertaken as part of this research will seek to identify and resolve as many of those unknowns as is possible. It may well be the case that once identified, the resolution of some themes and ideas will need to be a part of other research. It is also very likely that any future research will uncover issues and possibilities that this research hasn't.

This research ponders the role of an awareness and engagement strategy. While some projects have resulted in outcomes that arguably have some benefit in terms of revitalising te reo Māori, it is evident that many of these have operated in their own silos. As a result the outcomes are largely unknown by the wider population for whom the initiatives were undertaken. There appear to be projects that seek to

add value to revitalisation strategies but, on the whole, are largely uncoordinated and the outcomes poorly conveyed. Lewis (2007) advocates planning, situational analysis and marketing as important parts of the regeneration activity. Measures of awareness and endeavours to increase language visibility will be observed to gauge the effect of attempting to elicit a notable uptake in engagement with technologies using te reo. Will raising language visibility in certain environments increase the use of the language in those areas? A useful outcome of initiatives based upon language visibility would be the identification of what seems to work.

The pervasiveness of digital technologies, and in particular social networking platforms, provides opportunities for minority language groups to broadcast and converse in their own language. This research analysed the use of te reo Māori on the Twitter platform – aiming to understand the factors that influence broadcasts and the incidence of tweeting using te reo Māori. Can the locations of tweeters and the conversation links be identified and will those bits of information provide some insight into why te reo Māori tweets have been posted? Analysing location-based data is expected to identify some of the environmental factors that compel people to broadcast in digital mediums using te reo Māori. There might be some merit in encouraging more people to engage in social media using te reo Māori. A groundswell of Māori language use would increase the visibility of the language, promote extended language use and, arguably, improve conversational fluency. The development of a Māori-language community using Twitter will aim to determine whether or not this may actually be the case. Analysing participation within this community is also expected to identify general, and perhaps specific, tactics that will prolong conversations and engagement. There is also an opportunity to determine some factors that can be used to create space for specifically themed conversations for a variety of interests and pre-existing groups.

The catalyst for undertaking this research, as mentioned, has been to determine whether or not the Māori-language interfaces for Windows and Microsoft Office were being used. The sphere of investigation widened to include other interfaces and digital spaces where te reo Māori is being used. The overarching aim has evolved. The research seeks to identify how digital environments can be tailored and used to promote engagement using te reo Māori. The rationale being the provision of avenues that will support the use and extended health of te reo Māori.

2

Reversing Language Shift

A review of selected literature

2.1 Introduction

Language loss is not a new phenomenon. Approximately 81% (about 31,000) of the world's languages are thought to have been lost to-date and the current number of languages are believed to be half of what they were 500 years ago (Nettle & Romain, 2000; Armstrong, 2011). The languages of the world have undergone a myriad of changes brought about as the social conditions of language communities are somehow changed. The wholesale shift by minority language speakers to use another (usually major) language generally signals the deterioration and eventual demise of their own. As the shift continues, those particular languages are heard less often, until ultimately they are no longer spoken and all that is embodied by that language begins to be lost to the world. The decrease in the use of a language resulting from the shifting preferences of its speakers is a matter of widespread concern as efforts by affected groups seek to preserve minority mother tongues against a backdrop of loss resulting from the domination of major languages. Of relevance to this research is the reaction by concerned language communities to the potential loss and the declining health of their own languages.

Languages are emerging and others are disappearing all the time. This is neither unique nor unusual. Language loss and language shift have occurred repeatedly throughout history (Janson, 2002, p.97, p.235). The disappearance of languages is an ongoing event for humanity and has been happening for thousands of years - but the event itself is normally gradual and one of attrition and assimilation (Grenoble, 2011; Wurm, 1996, p.1). Sudden (or abrupt) language loss could occur as a result of disease, natural disaster or warfare for example (Grenoble, 2011; Wurm, 1996). In such instances, the sudden loss of a language usually arises when the speaking population or language community is also lost suddenly, or vanquished as in the case of warfare. This type of rapid loss is relatively uncommon. Languages are more likely to be lost over a number of generations as speakers choose to not speak their

language to each other and/or to not speak it to their children (Austin & Sallabank, 2011; Dorian, 1998; Wurm, 1996).

The world's languages are now being lost at an alarming rate. Most at risk are the many minority indigenous languages. Half of the world's languages are expected to be lost over the next few generations. The threat of demise to most of the world's linguistic diversity and the scale to which it is expected to occur is recognised as a worldwide crisis (Foundation for Endangered Languages (FEL), 2013; National Geographic, 2014). The documentation of current language loss globally has quite possibly provided much of the catalyst for the many initiatives and research projects around the world aimed at language survival and regeneration.

Linguists generally agree that there are 6,000 to 7,000 spoken languages in the world at this time (Gordon, 2005; Harrison, 2007; Hinton & Hale, 2001; Janson, 2002; Lewis, 2009; UNESCO, 2009). According to Crystal (2000), *Ethnologue*, the largest present-day survey of living languages, first published an edition in 1974 that listed 5,687 languages. The thirteenth edition published in 1996 contained listings for 6,703 languages (Crystal, 2000, p.3). The fifteenth edition of *Ethnologue* lists 7,299 distinct languages (Gordon, 2005). Linguists and language experts agree that most of the world's minority languages are endangered and predict that about one third of the current languages are likely to be lost within the next few decades and about half will have been lost by the turn of the century (Austin & Sallabank, 2011; Crystal, 2000; Harrison, 2007; Janson, 2002; SIL International¹⁴, 2014). There are many reasons why a language might become endangered. Austin & Sallabank (2011, p.5) provide four main categories for the causes of language endangerment and loss:

- natural catastrophies, famine, disease
- war and genocide
- overt oppression – often in the name of ‘national unity’ or assimilation (including forcible resettlement)
- cultural, political, economic dominance

¹⁴ SIL International state they are a faith-based nonprofit organization. They are also the publishers of *Ethnologue*. Retrieved from <http://www.sil.org/about>

When more than one factor impacts upon a language a significant drop in language health can be expected. This is widely in evidence as many minority indigenous languages, already extremely endangered, are slowly being edged out by the major, more global languages such as Mandarin, Spanish and English (Alis Technologies, 2014; Armstrong, 2011; SIL International, 2014).

The ease of access and availability of global communication has escalated the number of endangered languages that are under threat of extinction. This is due largely to the pervasion of major languages in areas where until recently only minor languages were spoken (Kalzner, 1995. p.ix). The exacerbation of shifting language preferences has been attributed to the modern communication upsurge as more pressure is placed on minority language speakers to use languages that are more dominant, more prestigious, or more widely known than their own (Wurm, 1996, p.iii). It is not uncommon for members of a minority language community to use modern media in a major language, at the very least to ensure their broadcasts are received and recognised by as many people as possible. The current combinations of pressure on minority language speakers to use a major language more often is causing the disappearance of languages in increasing numbers – giving minority language communities serious cause for alarm (Crisp, 2000; Wurm 1996).

The spread of dominant languages coupled with the wholesale uptake of digital technology further impacts minority cultures as their artefacts, previously reserved for private and more intimate domains, are shared globally. The impact of these and similar technologies "... has acted as a battering ram against the traditional cornerstones of social authority and meaning" (Warschauer, 2001, p.1) – a phenomenon that is forcing people to reconsider the concepts of ethics and privacy (Molina, 2014). The unbridled sharing of wisdoms that are usually privileged and sacrosanct further marginalises already-endangered languages and the traditions and practices of the cultures that those languages underpin. Ironically, minority language groups are implementing strategies that harness the capability and influence of web-based and other digital technologies as they seek to reclaim spaces for the ongoing use of their mother tongues (Cazden, 2003; Crystal, 2001; Dyson & Underwood, 2005).

More than two thirds of all internet users engage with Facebook and nearly one quarter engage on Twitter (Duggan, Ellison, Lampe, Lenhart, & Madden, 2015). These and similar social media networks have created conversational spaces and provided ordinary people with the power of expression in the public arena without the usual media gatekeepers (Cross, 2011, p.1). The drawcard is being able to say what you want, when you want, to an audience that is always listening. Continuous interconnectedness and access to vast amounts of information and new ideas has created an allure that is changing awareness levels and fostering a new sense of intragenerational ¹⁵ community (Cross, 2011, p.7). The public have a new appreciation of information and have altered perceptions and behaviours, especially in terms of conversation content, given that the ability to verify fact and fiction is immediately available. Technology-driven social change has resulted in a massive transformation of social behaviours, interactions, interrelations and expectations (Cross, 2011; O'Connor, 2012). In many situations it is not uncommon to see people more focussed on their mobile phones than on what is happening around them. This transformation is relatively unappreciated and the ability to remain digitally connected with each other and the world in general is something that is now expected rather than admired. Unfortunately for endangered languages, ensuring a wider audience and breadth of connectivity generally requires engagement using a major language.

Language speakers will shift from their own language to another for a variety of reasons. Sometimes they have little choice as is the case in instances of oppression, colonisation, or vanquishment. Other times that shift emphasises the perceived significance or prestige of the new language. The consequence of either is the premature decline of their own mother tongue (Grenoble, 2011; Janson, 2002; Kalzner, 1995). As their language declines, heralded by the declining numbers of speakers, emerging generations are forced to decide whether or not to discard their mother tongues in favour of languages that are more widely spoken and thought to be of greater use to them (Austin & Sallabank, 2011; Kalzner, 1995). As the pattern cycles through successive generations, the use of that particular tongue declines until it is no longer heard.

¹⁵ This is discussed further in Section 2.5

Given that language shift normally results from choices made by the language community in general, one might question whether or not language loss is an issue worth attention. What is really lost? Is that loss significant? How is language loss important – if indeed it is? It is difficult to describe the full extent of loss when a language is no longer spoken or remembered. Language is considered to underpin a culture (and vice-versa) by communicating survival mechanisms, establishing and cementing identity and conveying traditions and ideas unique to that particular culture (Austin & Sallabank, 2011; FEL, 2013; National Geographic, 2014; UNESCO, 2010). The transfer of a language and traditions to successive generations ensures the preservation of all that identifies one culture from another (Fishman, 1991:2000; Harrison, 2007; Kalzner, 1995). Reversing the effects of shifting language preferences by individuals and groups is driven by the need to protect and preserve their unique cultural identities from gradually being pushed aside by the dominant languages and cultures. The strategies of reversing language shift must understand the importance of that language and how it conveys concepts of tradition, knowledge and identity for its speakers.

Te reo Māori, the indigenous language of Aotearoa/New Zealand, is undergoing a renaissance of sorts as language activists seek to restore language vibrancy and vigour (O’Carroll, 2013a, p. 232). Language regeneration efforts, especially over the past half century, have produced a variety of initiatives seeking to halt the declining health of te reo Māori and increase the number of fluent speakers (Benton, 1991; Chrisp, 2005). Early community-based language initiatives were created that focused on nurturing the language in educational settings and developing spaces where the language could be safely used and the wider community could be involved directly¹⁶. Recently, the use of contemporary technologies is making significant inroads into the areas of language acquisition, wider communication and networking. The development of small online language communities, encouraging the use of te reo Māori, and the advent of translated application interfaces is slowly embedding a Māori-language profile in various forms of new media. Recent technologies have included translated interfaces for a selection of computer

¹⁶ This is discussed in Section 3.6

applications, mobile technology, physical self-service machines and social media¹⁷ (Keegan, Mato & Ruru, 2015; Mato & Keegan, 2013; Mato & Keegan, 2013a).

This chapter discusses language endangerment and describes the causes and effects of language shift. The reasons and motivations for preserving a language are considered by determining what is lost and why that might be important to particular cultures and ethnicities and to humanity in general. Strategies that might be undertaken to reverse or manage the incidence of language endangerment and loss are investigated and some literature relating to these strategies is also reviewed. Analyses of this review will identify and comment on some characteristics and principles that should be considered within strategies that aim to reverse language decline, stabilise language health and underpin various language revitalisation initiatives. Finally, a discussion regarding the impact of technology and how that might affect revitalising strategies is undertaken. In particular, the widely recognised importance of intergenerational language transmission and an observed phenomenon described here as intra-generational interaction. The discussion is based upon observations that digital communication, especially within social media, occurs largely in a lateral fashion that tends to disregard generational differences. Given the importance of language transmission intergenerationally and the significant presence and wholesale uptake of technology-based platforms such as social networking, especially by younger generations, there would seem to be good reason to reassess how the identified language revitalisation principles and strategies are applied to language groups whose younger generations are actively online for extended periods of time.

¹⁷ This is discussed in Chapters 4&5

2.2 Languages in crisis

The majority of the world's languages are spoken by relatively tiny numbers of people. Linguists and language experts generally agree that there are some 6,500¹⁸ spoken languages and have similar estimations of the proportional statistics of the world's speaker populations. For instance: approximately 95% of the total languages are spoken by only 5% of the population (Crystal, 2002; Gordon, 2005; Kalzner, 1995) versus 96% of the world's languages are spoken by 3-4% of the population (National Geographic Society, 2017). Rather than highlight such small differences (in terms of statistics) and for ease of reading, the following bulleted points have been presented to provide a sense of global language numbers, uptake and relative diversities. Of the world's population:

- 12%-16% speak Chinese/Mandarin;
- almost 2 billion people, about one quarter of the population, speak either Chinese/Mandarin, Spanish or English as first-language speakers;
- 32% speak the world's top 5 spoken languages as first-language speakers;
- 43% speak the world's top 10 spoken languages as first-language speakers;
- 49% speak the world's top 20 spoken languages as first-language speakers.

(Fact Monster, 2015; Good Magazine, 2016; Gordon, 2005; Grenoble, 2011; Kalzner, 1995; One World Nation Online, 2017)

In terms of languages:

- 83% are spoken only in single countries;
- 52% are spoken by fewer than 10,000 people;
- 28% are spoken by less than 1,000 people;
- 660 languages have fewer than 100 first language-speakers;
- 180 are spoken by between 10 and 50 speakers;
- 200 are spoken by less than 10 speakers.

(Austin & Sallabank, 2011; Cosmos, 2009; Kalzner, 1995; Janson, 2012; UNESCO, 2009)

¹⁸ Estimations of language numbers vary from 5,000 to 7,000 - this chapter will use 6,500 as an arbitrary average

It is clear that a relatively small number of languages, a handful by comparison, are very widely spoken by a very large percentage of the global population. The top 10 most spoken languages alone account for almost half of the world’s first-language speakers – see Table 1. At the upper end of engagement numbers, about 350 languages (5% of the total) are spoken by at least one million speakers each, and, overall, by 95% of the world.

Table 1: Approximate number of first-language speakers per language (top 10)¹⁹

Language	No. of speakers	%²⁰
1. Chinese/Mandarin	1,197,000,000	16.0
2. Spanish	414,000,000	5.5
3. English	335,000,000	4.5
4. Hindi	260,000,000	3.5
5. Arabic	237,000,000	3.2
6. Portuguese	203,000,000	2.7
7. Bengali	193,000,000	2.6
8. Russian	167,000,000	2.2
9. Japanese	122,000,000	1.6
10. Javanese	84,300,000	1.1

Note: The macro-languages of Chinese/Mandarin and Arabic include 13 individual languages and 18 individual languages respectively with at least 1 million speakers for each of those individual languages.

¹⁹ Source: Fact Monster (2015) <http://www.factmonster.com/ipka/A0775272.html> (derived from *Ethnologue* 2014).

The macro-languages of Chinese and Arabic include 13 individual languages and 18 individual languages respectively with at least 1 million speakers each

²⁰ Based on a population of 7.5billion Source: worldometers (2017) <http://www.worldometers.info/world-population/>

At this point in human history, the majority of languages, spoken by very few people, are about to vanish (FEL, 2013; Gordon, 2005). Of the 2000 or so languages in Africa alone, it is expected that about 10% will be lost over the next few generations. Speakers of some languages number in the hundreds or perhaps belong to a single village or just a handful of families. The approximately 400 languages that are spoken by less than 50 speakers are already on the brink of extinction. The ability for small language communities, numbering less than 100 speakers, to sustain everyday use of a language for even one generation is difficult to imagine - yet at least 10% of the world's living languages are now in this position (FEL, 2013).

To illustrate the speaker/language ratio, the following figures represent proportional first-language speaker statistics as if the world's population was only 100 people. Based on the data in Table 1, 16 of those people would speak Mandarin/Chinese and the top five languages, in terms of speaker numbers, would be spoken by just over 32 people as depicted in Figure 2.

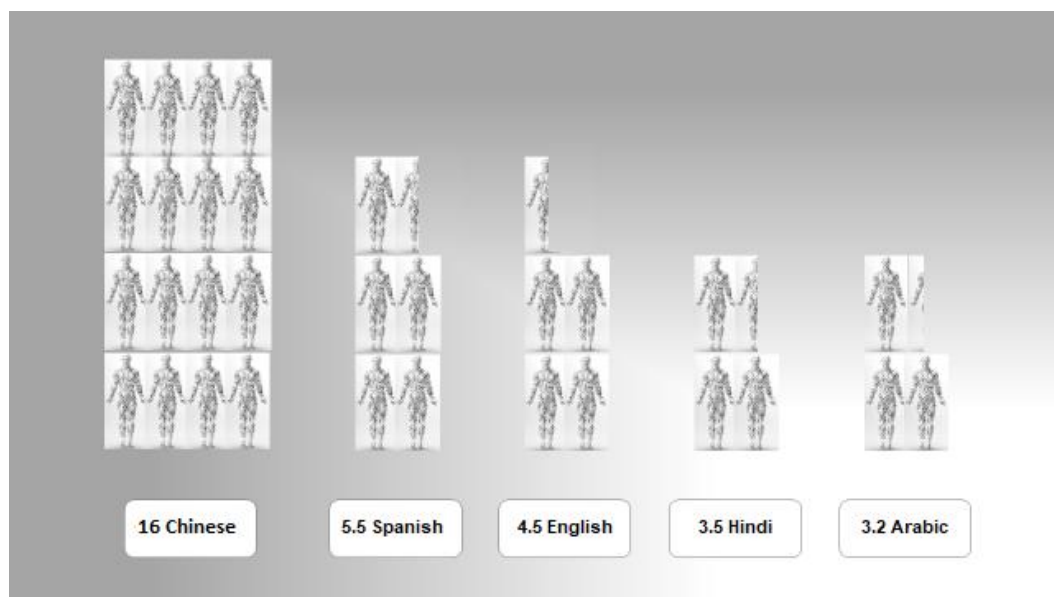


Figure 2: **32.7** people would speak the top **5** languages (from 100 people)¹⁹

Note: The macro-language of Chinese/Mandarin includes 13 individual languages.

Slightly more than 10 people would speak the next 5 most spoken languages. This means the top 10 languages would be spoken by 43% of the total first-language speaker population - Figure 3.

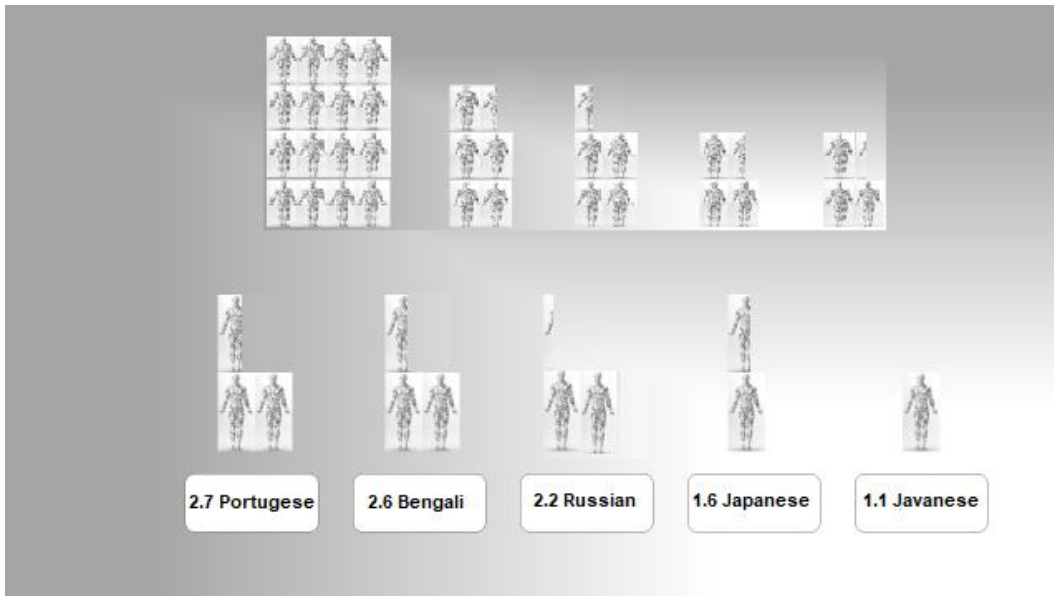


Figure 3: A further 10 people would speak the top 10 languages (from 100 people)¹⁹

In total, 95 out of the 100 people would speak the most-spoken 350 languages - Figure 4.

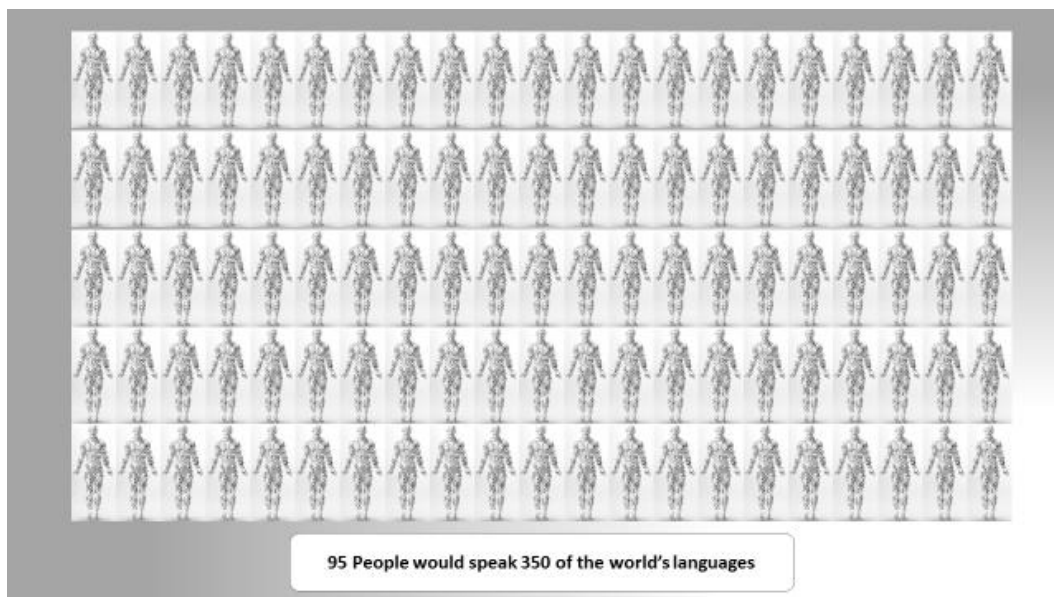


Figure 4: 95 people would speak the top 350 languages (from 100 people)

This means that the 5 remaining people would speak the remaining 6150 languages - Figure 5.

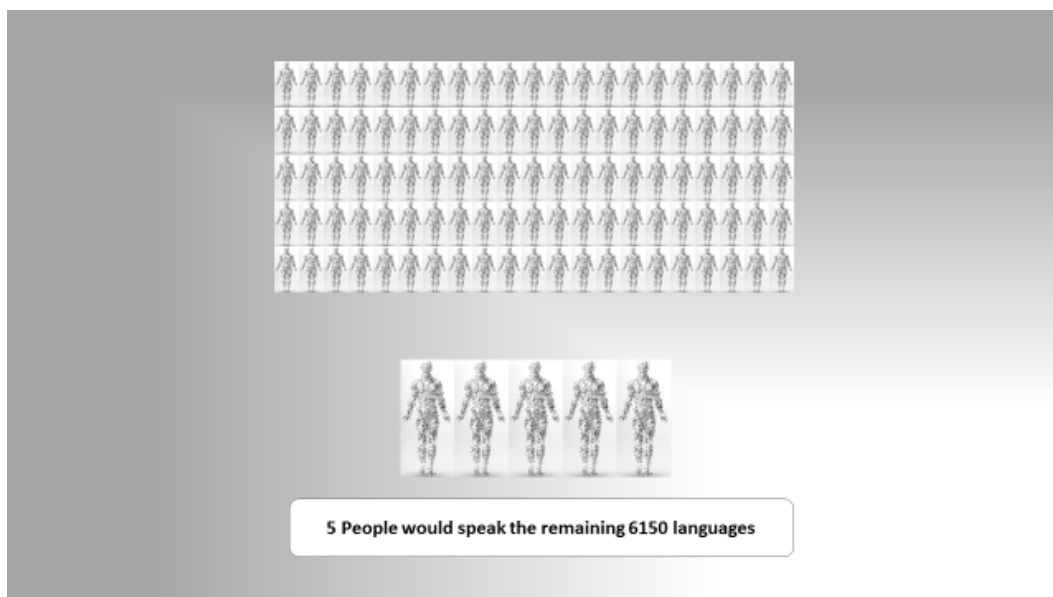


Figure 5: 5 people would speak the remaining **6150** languages (as a first language)

It is clear that the many languages in the world are not dispersed evenly amongst the first-language speakers. The fact that the vast majority of languages are spoken by a very small minority of the total population means that there is so much more pressure for minority language speakers to shift their speaking preferences to a major language. The ‘shrinking of the world’, especially in terms of connection via travel and communication, also compounds the pressure to engage using a tongue that is more widely understood. The risk of loss for the minority languages is extreme because the few remaining speakers tend to be elderly and the languages are being spoken progressively less by successive generations (Harrison, 2007; Hinton & Hale, 2001; Janson, 2002; Lewis, 2009). Given that younger people more often connect through travel and social media, one can see how the smaller languages are struggling for a voice. At this point in modern human history many languages in the world will cease to be spoken within the next few generations (FEL, 2013; Janson, 2002; Lewis, 2009).

2.2.1 *Atlas of the World's Languages in Danger*

The Atlas of the World's Languages in Danger was compiled by a team of 30 linguists assembled by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) with the support of the Norwegian Government. The Atlas was first published in 1996, a second printed edition was published in 2001 and a testing online version, launched in 2005, was finalised as an interactive digitised version of the Atlas in 2009. According to UNESCO (p.1, 2009), the Atlas intended to:

- raise awareness about language endangerment;
- ensure policy-makers, speaker communities and the general public are aware of the need to safeguard the world's linguistic diversity;
- be a tool to monitor the status of endangered languages;
- be a tool to monitor the trends in linguistic diversity at the global level.

(UNESCO, 2009, p.1)²¹

The latest edition of the Atlas (2010) is available in English, French and Spanish and lists about 2,500 languages having some level of endangerment. The interactive digital version²² lists 2471 languages - both versions include about 230 languages that have become extinct since 1950. The Atlas lists the degree of endangerment of each language and the country or countries where that language is spoken (UNESCO, 2014a). Data can be extracted from the online version of the Atlas for languages in various stages of endangerment categorised by country, language group or speaker population. The locations of the languages, listed by the Atlas, that are spoken by less than 500 people are shown in Figure 9.

²¹ Information sourced from the Atlas website prior to the 2009 launch will be referenced as (UNESCO, 2009), rather than the current (Moseley, 2010), since previously-sourced information can no longer be extracted in the same format from the current digitised version

²² See <http://www.unesco.org/culture/languages-atlas/>

2.2.2 *Vitality and health*

According to the Atlas, at least 43% of the world's languages suffer some stage of endangerment or are extinct (Figure 6). While this does not include languages for which little information is known, this still equates to more than 2500 languages. Although vitality is represented as levels of endangerment in Figure 6, other views regard vitality as a reflection of the size and composition of the language community or speaker population (Grenoble & Whalley, 2006). In this sense vitality could also be viewed as language health.

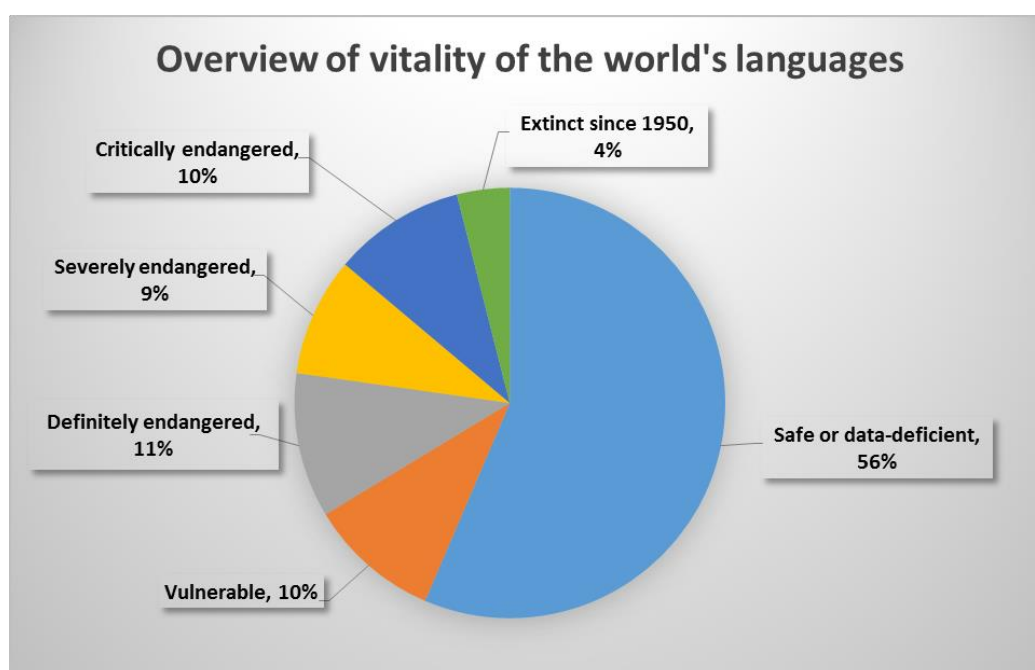


Figure 6: Vitality of the World's Languages²³

Language health is generally measured by two factors:

1. the number of people who speak that language, and,
2. the range of settings where that language is spoken.

In 2002 and 2003, UNESCO asked an international group of linguists to develop a framework for determining the vitality of a language in order to assist in policy development, identification of needs and appropriate safeguarding measures. The

²³ Sourced from <http://www.unesco.org/culture/languages-atlas/index.php?hl=en&page=atlasmap>

UNESCO Ad hoc Expert Group on Endangered Languages have identified nine major evaluative factors for language vitality - Figure 7:



Figure 7: Major factors of language vitality²⁴

Intergenerational language transmission is regarded as a key component for securing the ongoing health of a language. Ensuring the language is passed from generation to generation means the language is self-perpetuating. It is also critical to have a significant pool of speakers that are well represented in terms of numbers relative to the overall population. This means the language will still be spoken and heard even within the presence of one or more major languages. Minority languages will need to keep pace with changing trends and technologies – or run the risk of being left behind. This is likely to be much more important in terms of engagement by younger generations. The availability of materials that can be used for spoken and literacy-based language learning is important as is its placement within appropriate Governmental and institutional language policies - including official status and use. The level at which a minority language will be learnt, used and passed on will largely be determined by the attitudes of the members of each

²⁴ (UNESCO, 2014b)

language group toward their own language. Essentially, minority language speakers themselves must perceive an importance and element of prestige regarding their mother tongue. Their language vitality will hugely benefit if the language is treasured and spoken with pride.

The health of a language depends on whether or not the language is used in normal social contexts such as the home and extended family and wider community settings (Fishman, 1991, p.161; Fishman, 2000, p.73; Dorian, 1998, p.105). It is important that the use of the language, by people of all ages, is perceived as normal within wider social settings. It is this ‘normalisation’ that encourages and supports the use of an endangered language in everyday situations which is an important strategy for language revivalists. A focus on younger generations is also one way of ensuring continuity of language transfer. That is to say that whether or not a minority language is being used in everyday contexts by successive generations is perhaps the most important measure of success for strategies aiming to improve language health and reverse the effects of language shift. The factors that result in language shift need to be considered together since no single factor determines whether a language is endangered or not. In general however, a language could be considered endangered when it is no longer spoken, is spoken in fewer and fewer domains, the speakers use fewer of its registers and speaking styles, and/or stop transferring the language to the next generation (UNESCO 2014c).

2.2.3 Diversity

Linguistic diversity, or language richness, simply refers to the number of distinct languages in a given area. The world’s language diversity has fallen globally by 20% from 1970 to 2005 and indigenous language diversity has decreased regionally by over 60% in the Americas, 30% in the Pacific and almost 20% in Africa (Harmon & Loh, 2010, p.1). According to FEL (2013), it is likely that the languages that are spoken only in single countries (83% of all languages) are particularly exposed to the policies of a single government. The loss of language diversity is a critical concern for minority language groups and a primary focus in linguistics (Lewis & Simons, 2016). Based on current levels of decline, the outlook for survival of some languages appears grim. The pressures of a globalising world, the impact of urbanisation and the mobility and ease of movement have emerged over the past

few decades as powerful transformers of the sociolinguistic spaces where speakers of minority languages live and function (Lewis & Simons, 2016, p.1).

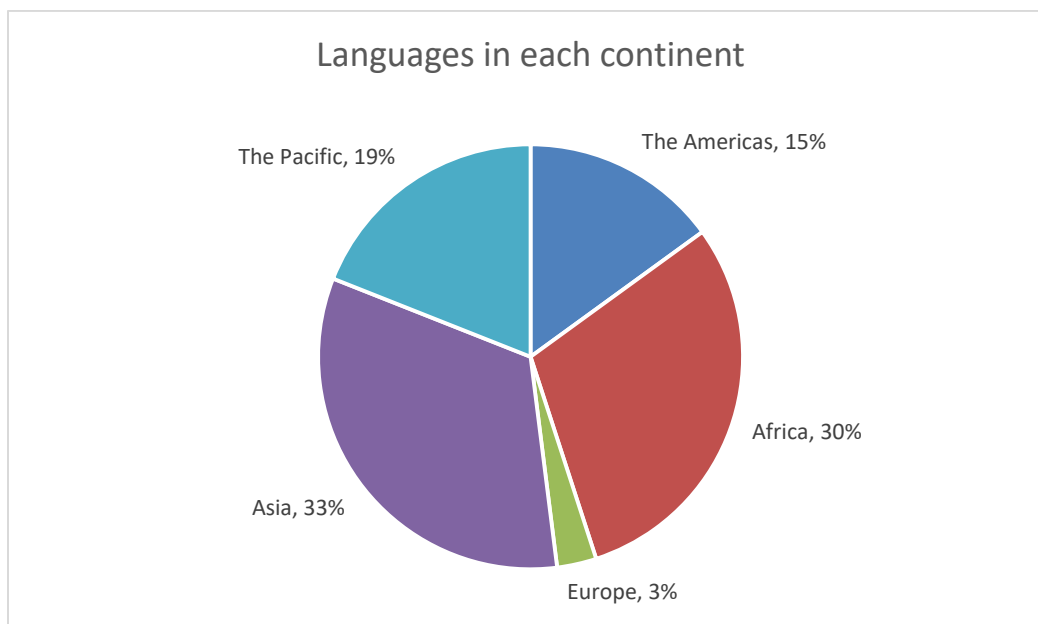


Figure 8: The proportion of the world's languages in each continent

Given that the world's linguistic diversity is under threat as languages everywhere diminish in use and number of speakers, it would be a worrying trend for language revitalisation activists and supporters if European language diversity were to be emulated in other parts of the world – notwithstanding the individual vitalities of each of those European languages (Austin & Sallabank, 2011, p.5, p.22; FEL, 2013). In terms of language variety, Europe is the least diverse with nearly 250 languages spoken by an approximate average of 220,000 speakers each (Gordon, 2005; Janson, 2012). The several hundred million inhabitants of Western Europe only speak about fifty of the major languages. The linguistic diversity that exists in Europe pales in comparison with the other continents - see Figure 8 (Austin & Sallabank, 2011, p.5). Africa and Asia alone account for approximately 2,000 languages each, the majority of which are endangered minority tongues (Austin & Sallabank, 2011).

2.2.4 *Measurement (Degrees of endangerment)*

Language endangerment, the threat of language loss, is not easily measured. Intuitively, there would be benefit to having a structure where levels of comparison can be ascertained. One obvious advantage of this would be the enactment of particular strategies to address certain levels of language health and vitality as they are identified. Some frameworks offer stages or levels of endangerment that allow a means of comparison, thereby gauging to some extent how endangered a language might be. Four frameworks have been selected for discussion, namely:

1. UNESCO 6-level scale of endangerment presented in the *UNESCO Atlas of the World's Languages in Danger*;
2. *Ethnologue's* 5-level categorisation of language vitality;
3. Fishman's 8-level Graded Intergenerational Disruptive Scale (GIDS);
4. The Expanded Graded Intergenerational Disruptive Scale (EGIDS).

2.2.4.1 *The Atlas of the World's Languages in Danger*

The Atlas describes levels of endangerment for slightly more than 2,500 languages. The data are also filtered by the numbers of speakers for each of those languages (see Table 2). Although Table 2 only reports on those spoken languages that are included in the Atlas, it is evident that almost 1700 languages, about one quarter of the world total, are spoken by less than 1000 people each.

Table 2: Degree of language endangerment and speaker numbers²⁵

Numbers of speakers					
	0-999	10000 - 99999	100000 +	No data	Total
Vulnerable	339	150	106	6	601
Definitely endangered	409	151	60	27	647
Severely endangered	431	48	11	36	526
Critically endangered	510	15	0	53	578
Extinct	218	1	0	10	229
Total	1907	365	177	132	2581

The UNESCO team consider a language to be ‘safe’ when the language is spoken by all generations in a variety of settings and intergenerational transmission continues uninterrupted (UNESCO, 2009). The data for Table 2 is no longer accessible in the original format. Previous assumptions that the 10,000-99,999 speakers of an extinct language may have referred to Latin were incorrect. The data refers to the Indonesian language of Bada²⁶. No further data was found on the updated Atlas website.

²⁵ Sourced from <http://www.unesco.org/culture/languages-atlas/index.php> May 2010

²⁶ Sourced from

<https://docs.google.com/spreadsheets/d/1mUYwl5ZUTp2OHD0r0hsco89YY5J8Qx2GWzTLFETzVnB4/edit?hl=en&hl=en#gid=1>

The Atlas defines six levels of endangerment:

- **safe** – The language is spoken by all generations, intergenerational transmission is uninterrupted;
- 📍 **vulnerable** - Most children speak the language, but it may be restricted to certain domains (e.g. home);
- 📍 **definitely endangered** - Children no longer learn the language as mother tongue in the home;
- 📍 **severely endangered** - Language is spoken by grandparents and older generations; while the parent generation may understand it, they do not speak it to children or among themselves;
- 📍 **critically endangered** - The youngest speakers are grandparents or older, and they speak the language partially and infrequently;
- 📍 **extinct** - There are no speakers left.



Figure 9: Locations of the World's endangered languages (less than 500 speakers)²⁷

²⁷ Retrieved from <http://www.unesco.org/culture/ich/index.php?pg=00206> May 2010

2.2.4.2 *The Ethnologue*

The Ethnologue: Languages of the World is self-described as an in-depth publication that presents data and information about all languages of the world²⁸. The result of a global research project, the published data was originally generated from a digital database of languages of the world and has been continuously updated by a globally distributed team of researchers, research assistants and interns (Simons & Fennig, 2017). The database is maintained at the headquarters of SIL International in Dallas, Texas, and continues to develop to suit the research needs of the Ethnologue user community. The database content, now primarily accessed online, includes an interface that allows community members and research collaborators some ability to enact reviews and updates on the data. Ethnologue currently makes data and information accessible for 7,099 recognised languages and is regarded by some as being an authoritative source on the languages of the world. The currency, breadth and volume of data are considered to be unsurpassed (FEL, 2013; Skutnabb-Kangas, 2002). The Ethnologue includes a classification system that was developed to categorise the vitality status of languages based upon the number of first-language speakers (Lewis, 2009).

Table 3: Ethnologue Vitality Categories

Category	Description
Living	Significant population of first-language speakers
Second Language Only	Used as second-language only. No first-language users, but may include emerging users
Nearly Extinct	Fewer than 50 speakers or a very small and decreasing fraction of an ethnic population
Dormant	No known remaining speakers, but a population links its ethnic identity to the language
Extinct	No remaining speakers and no population links its ethnic identity to the language

²⁸ See <https://www.ethnologue.com/>

2.2.4.3 *The Graded Intergenerational Disruption Scale (GIDS)*

The Graded Intergenerational Disruption Scale (GIDS) was developed by Joshua Fishman and introduced in *Reversing Language Shift* (Fishman, 1991). The 8-level GIDS has served as the “seminal and best-known evaluative framework of language endangerment for nearly two decades” and Fishman himself is recognised as developing many of the major sociolinguistic concepts that inform the understanding of language use in society (Lewis & Simons, 2009, p.2).

Table 4: Fishman's Graded Intergenerational Disruption Scale (GIDS)²⁹

Stage	Description
Stage 8	The language attrition is so advanced that the few remaining users are generally socially isolated and elderly, and also very deficient in proficiency for everyday discourse.
Stage 7	Users are socially integrated, elderly, living in communities and conversing in their own language – albeit within their own (elderly) group.
Stage 6	The traditional tongue is spoken in informal settings but spoken interaction occurs between and within all three generations of the family.
Stage 5	Language literacy occurs in the home, school and community - the protection of the oral language is bolstered by connectedness - communities can remain connected by correspondence, newsletters and social media.
Stage 4	Language is used in lower education that meets the requirements of compulsory education laws and initiatives in local and less-specialised educational arenas are primarily state funded.
Stage 3	Language is used outside the language community in the non-neighbourhood/work sphere involving interaction between speakers and non-speakers of the particular language.
Stage 2	Language use occurs in governmental services and mass media that have direct, daily contact with the language community.
Stage 1	There is some use of the language in higher level educational, occupational and governmental arenas and media outlets - cultural autonomy is recognised and implemented particularly within the neighbourhoods/regions of the language communities.

The Graded Intergenerational Disruption Scale was devised to rate the ethnolinguistic vitality of endangered languages. The scale is intended to be a functional tool for proponents of language revival strategies. According to Fishman

²⁹ Fishman, 1991, pp.87-109

(1991), it is important for language health to transition through the stages, where Level 8 is the most endangered and the only speakers are members of the grandparent generation, and Level 1 the least endangered. At Level 1 the language is used in education, work, mass media, and the government at a national level. The scale has a key focus on intergenerational transmission in the maintenance of a language and is intended to underpin language strategies by provided a diagnosis of the language health throughout the revitalisation process.

2.2.4.4 The Expanded Graded Intergenerational Disruption Scale (EGIDS)

An expanded version of GIDS incorporates an alignment of the Atlas, Ethnologue and GIDS frameworks. The levels of this harmonised version, referred to as the Expanded Graded Intergenerational Disruption Scale (EGIDS), are designed largely to fit in with Fishman's GIDS (Lewis & Simons, 2009).

This expanded scale can be used to assess and categorise any known language – including those that have no speakers. The current status of a language can be determined by answering 5 key questions:

1. What is the current identity function of the language?
2. What is the level of official use?
3. Are all parents transmitting the language to their children?
4. What is the literacy status?
5. What is the youngest generation of proficient speakers?

Table 5: Expanded Graded Intergenerational Disruption Scale (EGIDS)

Level	Label	Description
0	International	The language is widely used between nations in trade, knowledge exchange, and international policy.
1	National	The language is used in education, work, mass media, and government at the national level.
2	Provincial	The language is used in education, work, mass media, and government within major administrative subdivisions of a nation.
3	Wider Communication	The language is used in work and mass media without official status to transcend language differences across a region.
4	Educational	The language is in vigorous use, with standardization and literature being sustained through a widespread system of institutionally supported education.
5	Developing	The language is in vigorous use, with literature in a standardized form being used by some though this is not yet widespread or sustainable.
6a	Vigorous	The language is used for face-to-face communication by all generations and the situation is sustainable.
6b	Threatened	The language is used for face-to-face communication within all generations, but it is losing users.
7	Shifting	The child-bearing generation can use the language among themselves, but it is not being transmitted to children.
8a	Moribund	The only remaining active users of the language are members of the grandparent generation and older.
8b	Nearly Extinct	The only remaining users of the language are members of the grandparent generation or older who have little opportunity to use the language.
9	Dormant	The language serves as a reminder of heritage identity for an ethnic community, but no one has more than symbolic proficiency.
10	Extinct	The language is no longer used and no one retains a sense of ethnic identity associated with the language.

The various frameworks can be used and applied to differing strategies for language regeneration. The frameworks are designed to be used as gauges of language endangerment and vitality. The relevant stages or levels of endangerment then inform particular strategies and initiatives. The EGIDS incorporates other frameworks and is closely aligned with Fishman's GIDS. Each EGIDS level is assigned a label identifying the major functional category for that level - Table 6.

Table 6: Category Labels for each EGIDS Level

EGIDS Level	Label
0	International
1	National
2	Regional
3	Trade
4	Educational
5	Written
6a	Vigorous
6b	Threatened
7	Shifting
8a	Moribund
8b	Nearly Extinct
9	Dormant
10	Extinct

All four frameworks are similar in that they measure speaker proficiency and numbers. The GIDS frameworks also identify the various arenas where the language is used and gauge the support from outside of each language group. There is some focus on the use of the target language in a wider context i.e. in the work place and in the presence of other language speakers. At the 'healthier' end of the scales, measures also determine the impact or support of external agencies such as government bodies and organisations trading internationally.

2.3 Endangerment and loss.

The evaluation and characterization of endangerment is defined as having two dimensions – “the number of speakers of the language and the number and nature of domains in which the language is being used” (Gordon, 2005, p.8). The more a language is used and the more instances or contexts that the language is used in, the less endangered it may be. However, the use of minority languages is declining worldwide as is the number of speakers of those languages (Austin & Sallabank, 2011, p.22). SIL International (2014) observe that when a language is at risk of no longer being used by the younger generation it could be considered to be endangered. This is also the case where a language is not used in normal social contexts by people of all ages (Fishman, 1991; Dorian, 1998). One method of averting language endangerment is to increase the language usage in everyday situations, more especially targeting younger generations (Dorian, 1998; Fishman, 1991:2000; Gordon, 2005). Intergenerational transmission, where the language is continuously passed from older to younger generations, is viewed as the most critical element of language restoration (Fishman, 1991:2001; Lewis & Simons, 2009; UNESCO, 2009).

There is often more than one reason a language begins to decline. Normally a language will suffer endangerment due to a combination of factors – rather than one aspect alone. Sometimes different forces might occur in tandem, or perhaps at once, often difficult to identify or distinguish separately. An example given by Austin & Sallabank (2011, p.5) refers to the endangerment of indigenous languages and cultures in Australia caused by disease and suppression following the effects of colonisation. Metaphors are used to describe this progression of declining use such as ‘endangerment’, ‘language shift’, ‘threatened languages’, ‘vanishing voices’; and, ultimately, ‘extinction’, ‘last words’, or ‘language death’ to mark the passing of that language (Harrison, 2007, p.5). Additionally, we allude to terms like ‘survival’, ‘regeneration’, and ‘revitalisation’ to describe efforts to ensure a language does not cease to be spoken³⁰.

³⁰ These descriptors are used interchangeably in this thesis

When a language ceases to be spoken, what is lost? What is the impact on those whose language has been lost? What will be the impact on those particular people, the wider society and future generations? As language shift becomes more widespread and minority tongues are no longer being learned by children, the threat of these languages becoming lost is increasing. Austin & Sallabank (2011, p.6) observe that unless these declining mother tongues are documented now, future generations may have no knowledge of them. This is reiterated by Crystal (2000, p.2), who states: “When a language dies which has never been recorded in some way, it is as if it has never been”. It is reasonable to expect that revitalisation of a dying language would meet with far greater success if effort was applied to improve the health of that language before it is lost or becomes critically endangered. Language endangerment, therefore, has a primary focus on the factors that compel speakers to abandon their language, either intentionally or otherwise, and the consequences that language death would bring to the community or group of communities where that language was formerly spoken (Gordon, 2005, p.8).

2.3.1 *Language Shift, Language Loss*

When a language ceases to be spoken it is often referred to as being lost, dead or extinct. The principle cause of language loss is a switch, that is generally intentional, where language speakers will discard their own tongue in favour of another that is perceived to be more dominant or more prestigious or more useful (Austin & Sallabank, 2011, p.27). This is commonly known as language switching or language shift. The loss of a language may sometimes be caused by a sudden loss of speaker population, however, an extended and gradual decline of a language is much more common (Austin & Sallabank, 2011, p.27). When speakers cease to speak their own native tongue and move to languages of wider communication (for example, major languages like Mandarin, English or Spanish), this shift generally recognises that the ‘new’ language, of what is usually a politically and/or economically dominant neighbouring culture, is more useful and more beneficial (Austin & Sallabank, 2011; Janson 2002; Dorian, 1998). The shift may also be effected by the processes of colonisation and assimilation; occurring internally but afflicted by an outside agency or culture.

Language decline is hastened by speakers who for various reasons decide that another tongue, in their actual circumstances, is a preferable communication tool for themselves and for their children (Janson, 2002, p.98). It is not uncommon for speakers of minority languages to regard a major national or international language as being a ‘more useful’ language option for their children than a ‘useless’ endangered language (Austin & Sallabank, 2011, p.11). “Parents in these circumstances will make a conscious or unconscious decision not to transmit the ancestral language to their children, and yet another language will be lost” (Dorian, 1998, p.3). The spread of dominant languages coupled with the hesitancy of parents to pass their own mother tongue to their children, results in the children then growing up learning and speaking the dominant language. Those children and/or their children may never learn or use their traditional tongue, or they may lose that ability as the language declines in use (National Geographic, 2014, p.1). According to Kalzner (1995, p.ix):

As the number of speakers diminishes in each case, a fateful decision must inevitably be made: the members of the rising generation must abandon their mother tongue and adopt instead a more widely spoken neighboring language that will be of greater use to them. By such a decision the lesser language is literally condemned to death, its ultimate passing awaiting only the death of the last speaker.

Cases where minority languages, especially those of smaller cultures, have been driven into the background by more powerful groups, whose own languages have thrived, are dotted throughout human history. The dominance of these larger languages arise because the speakers of these languages also tend to wield economic, political, social and cultural power. This generally leads to the marginalisation of the minority languages, pressuring the speakers of those languages to shift to the dominant tongue (Austin & Sallabank, 2011, p.1). Often these language displacements also result from factors associated with suppression, assimilation and colonisation - sometimes under the guise of official language policies. They may also result from the attraction of status or prestige that the new language may bring. Perhaps that new language itself is perceived as being better for the future of a minority language group, whether vanquished, assimilated or colonised, and for its children (National Geographic, 2014). At times multiple factors in unison might cause a wholesale language shift. Language loss is hastened when the pressure from

major languages steadily increases and smaller language communities progressively cease to speak their mother tongue to each other or to their children. This process is accelerating and indicators predict that there will be drastically less languages in just a few generations, despite the expected growth in the world's population (Janson, 2002, p. 236; National Geographic, 2014, p.1).

The loss of minority languages in the short term is expected to be high. Approximately 600 native languages, each with no more than fifty (elderly) speakers, are on the verge of extinction (Briand, 2013, p.13). Of the 2000 or so languages spoken in Africa, a 10% loss is expected over the next 100 years and at least 1000 of the world's languages will be lost overall within a couple of generations (Janson, 2002, p.244). However, a language may already be dead long before the last speaker of that language dies. Crystal (2000) postulates that a language is only alive as long as there is someone to speak it to (and it is being spoken). "When you are the only one left, your knowledge of your tongue is like a repository or archive of your people's spoken linguistic past" (Crystal, 2000, p.2).

Consider the case of a language called Ayapaneco. From the sixty-eight native languages still spoken in Mexico today, Ayapaneco is one of a handful on the verge of extinction. Manuel Segovia and Isidro Velazquez are the last two speakers of this language. They live in the same village, Ayapa in Mexico, 500 metres apart and refused to speak to each other despite the cultural implications of losing their language. Linguists were attempting to preserve this language, in spite of the non-communication between the last two speakers. It was likely that when Segovia, 75, and Velazquez, 69, both passed, their language would pass with them (Ho, 2011). It is fortunate, according to Donnelley (2014), that for the sake of their language, both men have put aside their differences and are now passing their language to others in their community. One might consider this to be a good outcome for the language – especially when that language was perceived to be on its final path to extinction. Suslak (n.d.) says "The story has something so compelling, so primordial, that it keeps getting repeated." However, the story is entirely untrue.

The misrepresentation of the Ayapaneco plight has been central to a marketing campaign by telecom giant Vodafone. Vodafone's "Viva Ayapaneco" campaign outlines the dour state of the relationship between the last two speakers, how that

relationship was turned around so that both men are actively involved in teaching the language to others in their community and the prominent role played by Vodafone in that reconciliation. That role reportedly included the provision of a school building where the teaching and learning could take place. There was no mention during the campaign that the building was already in existence and already being used to teach the language. The campaign is supported by a “Viva Ayapanenco” website³¹ where people around the world can ‘adopt’ an ayapanenco word or phrase and post photographs and videos to the website. The adoptions are underpinned by the notion that a widespread repository, of one word and one sentence at a time, would ‘save’ the language and help to secure the ongoing health of Ayapanenco. According to Suslak (n.d., para 5), the Vodafone campaign is “... beautifully crafted, elegant, and undeniably appealing”. The story is so compelling that it is the myth that is so often retold. However, that myth is also “... breathtakingly dishonest and ill-conceived” (Suslak, n.d., para 5).

Although the oft-repeated story of Ayapanenco is based on a raft of half-truths and deceit, the tale itself raises a variety of discussion points worthy of consideration. For example, where the last two speakers of a language refuse to speak to each other, has the language already suffered a death of sorts? Furthermore, if a language is identified as having one remaining speaker, has the language died – given that the speaker has no-one left to talk to? How can multi-national corporates be taken to task for exploiting the plight of an endangered language? The fabricated tale of a language facing imminent extinction was made all the more repeatable by the apparent refusal of the last two speakers to speak to each other. How can the misuse and exploitation of a people and their endangered language be redressed? The campaign promoting the adoption of words and phrases “implies that if a teenager somewhere in London learns to say “You’ve got beautiful hair” in Ayapanenco then the language will live on” (Suslak, n.d., para 11). Is this a legitimate strategy for reversing language shift? In light of the website and the adoptions one might begin to question issues of ownership. Do the people of Ayapa still ‘own’ their language? Do they get to decide the fate of their language? According to Hill (2002, p.120):

³¹ See <http://www.mama.one/ayapanecowork/>

The theme of universal ownership specifically alienates endangered languages from their speakers and other members of communities in which the languages are spoken. The theme for hyperbolic valorisation converts endangered languages into objects more suitable for preservation in museums patronized by exceptionally discerning elites than for ordinary use in everyday life by imperfect human beings.

It is clear that as a language becomes heard less often its demise, marked by the passing of the last speaker of that language, is sobering thought - Table 7.

Table 7: Examples of recent language demise³²

Language	Location	Year	Last speaker
Nuchatlaht	BC, Canada	2016	Alban Michael ³³
Gugu Thaypan	Queensland, AUS	2016	Tommie George ³⁴
Klallam	Washington, USA	2014	Hazel Sampson ³⁵
Eyak	Alaska	2008	Marie Smith Jones
Ubykh	Turkey	1992	Tevfik Esenc
Aasax	Tanzania	1976	Unknown
Manx	Isle of Man	1974	Ned Maddrell
Wiyot	California	1961	Della Prince

Note that although Manx has been identified as a dead language, it is enjoying a renaissance that Crossan (2013) describes as “extraordinary”. Following the death of Ned Maddrell, the last known native speaker of Manx, the language, once regarded as a ‘poor man’s language’, is now being taught in selected schools. Discussion regarding the status of Manx questions its status of ‘extinct’. Although

³² Source –(Cosmos, 2009; Butler & Weigel, 2011)

³³ See: <http://www.timescolonist.com/news/local/jack-knox-a-silenced-tongue-the-last-nuchatlaht-speaker-dies-1.2201517>

³⁴ See: <http://www.snowchange.org/2016/07/a-legend-Indigenous-australian-leader-knowledge-holder-tommy-george-passes-on/>

³⁵ See: <http://www.independent.co.uk/news/world/americas/last-known-native-speaker-of-tribal-klallam-language-hazel-sampson-dies-aged-103-9115865.html>

there are no first-language speakers, there are reportedly approximately 1900 second-language speakers (Crossan, 2013). Historically, speaking Manx (within the Isle of Man community) has often attracted scorn and contempt from within – sometimes resulting in violence. Dorian (1998, p.3) notes that if a language is exclusively associated with low-prestige and socially-disfavoured people, potential speakers will distance themselves and prefer to adopt another language instead. This is no longer the case for Manx and the language is gaining increasing acceptance (Crossan, 2013, p.1).

2.3.2 *What is lost?*

The plight of speakers of threatened languages who resist the endangerment and extinction of their linguistic identities and traditions is gaining broad support as endangered language campaigners rally to help preserve the diversity of what is one of humanity's greatest treasures (National Geographic, 2014). When languages cease to be spoken the full extent of what is lost is difficult to determine. Sometimes that loss may not even appear to be obviously tragic, more especially to those who believe that language attrition and consolidation will support such philosophies as national unity and global solidarity (FEL, 2013). Similar viewpoints would argue that the world would be better served with one generic language underpinning one universal culture; insisting that belonging to a larger, more global identity makes more sense than insisting on preserving smaller group identities that are “mutually exclusive and necessarily parochial and mutually non-comprehensible local cultures” (Fishman, 1991, p.29). However, with their complex implications for identity, communication, social integration, education and development, UNESCO (2010) says languages are of strategic importance for people and the planet. Research would also suggest that the demise of a language results in such a loss of intellectual and cultural wealth that the world also loses “a distinct universe of mental constructs, with unique ecological wisdom acquired through millennia of direct contact with nature ...” (Briand, 2013, p.12). Additionally, one should take care to ensure that such rhetoric and notions of universal wealth and global ownership that might be construed from such descriptions as “the world's treasures” and “the loss to humanity” are more accurately considered and regarded in terms of

a global concern for the impending loss of the knowledge systems underpinned by each language (Hill, 2002, p.129).

Essential to life is the need for cultures to adapt and develop in order to survive the differing environments of our planet. For humans these survival mechanisms are largely conveyed through oral traditions and the languages inherent to each of those cultures (FEL, 2013). Furthermore, cultures that have strong connections to the natural world, dating back hundreds and perhaps thousands of years, develop relationships with the land, water, plants, animal, and ecosystems that are often profound and insightful (National Geographic, 2014). More often than not these relationships are undocumented and encoded only in oral languages. The United Nations (2009, p.6) recognises that:

Indigenous peoples are custodians of some of the most biologically diverse territories in the world. They are also responsible for a great deal of the world's linguistic and cultural diversity, and their traditional knowledge has been and continues to be an invaluable resource that benefits all of mankind.

An understanding of the environment and how people communicate and store knowledge would be greatly enhanced by the study of various indigenous languages (National Geographic, 2014). Therefore, every time a language dies, we lose a repository of insights and an understanding of some of the relationships that cultures have developed over centuries with the world around them.

Language is intrinsic to a culture's values and world view. The pride and identity of particular cultures and of their individuals and is often seen as symbols of ethnic and national identity (Austin & Sallabank, 2011; FEL, 2013; SIL, 2014). Through the people who speak it and what it allows speakers to say language defines a culture, a people, and a way of knowing and doing. Language is often nuanced to a particular area, people or community, where words that describe a unique cultural practice or idea may not translate precisely into another language. Many endangered languages have rich oral cultures with stories, songs, and histories passed on to younger generations, but no written forms (National Geographic,

2014). Languages carry a richness in the forms of ideas and experiences, ways of knowing and doing, world views, intellectual wealth, and cultural knowledge (Harrison, 2007; Kalzner, 1995; Lewis, 2007; Nettle & Romaine, 2000). When people choose to abandon a language, in favour of another, an entire system of experiences and knowledge begins to be lost, leaving the affected communities of former speakers, and humanity as a whole, much poorer (FEL, 2013; Harrison, 2007). Where those lost knowledge systems are unwritten or undocumented, the loss to humanity is not only that of cultural wealth, but also of significant ancestral knowledge and tradition that is entrenched within those indigenous languages (UNESCO, 2014, p.1). Effectively, a unique view of the world disappears (Austin & Sallabank, 2011; Stevenson, 2001).

Language and culture are so closely tied that losing a language invariably results in social and cultural disruption as well (Gordon, 2005, p.8; Kalzner, 1995; Krauss, 1992; Lewis, 2009). This disruption is sometimes partly countered by reflecting and incorporating the culture in the way the new language is used³⁶. An example is the modified use of English language in New Zealand to reflect Māori expression. For instance, *tēnā koe* is used as a greeting to one person where *koe* refers to you in the singular. *Tēnā kōrua* is used to greet two people and *tēnā koutou* when one is greeting more than two people. In summary:

Koe = you (singular).

Kōrua = you (two people)

Koutou = you (more than two people)

In English there is only one version of the word 'you' and the phrase 'I greet you' could refer to one person, two people, or many people. To impart some "Māoriness" to the English pronoun, many Māori use 'yous' or 'youse' to signify that they are referring to more than one person – generally without realising why they do that.

³⁶ Dr Richard Benton: personal communication (eMail): 3 October 2017

Language revitalisation seeks to uphold indigenous knowledge and, therefore, indigenous cultures, by ensuring the survival and restoration of endangered indigenous languages (Gallegos & Murray, 2010). Reyhner (1999, p.1) observes that indigenous language revitalisation is part of a larger attempt by indigenous people to retain their cultural strengths and identities in the face of assaults by a pervasive, modern, technology-based society that is becoming increasingly globalised and conversant in a handful of major languages. There is also another kind of preservation, of another type of knowledge. Specifically, the precious sources of data, so important to the many sciences, linguistics, anthropology, prehistory and psychology, for example, that encapsulates the diverse and unique expressions of the human mind through a vernacular, vocabulary and idiom (FEL, 2013). “Those concerned about language endangerment recognize the implications of the loss of linguistic diversity both for the linguistic and social environment generally and for the academic community which is devoted to the study of the language specifically” (Gordon, 2005, p.8).

Once a language ceases to exist, revival is thought to be extremely unusual (Janson, 2002, p.238). Some heartening news for languages that are critically endangered is that some may be saved from the brink of extinction. This appears to be the case for Cornish from Southwest England and Sîshëë from New Caledonia as efforts aimed at restoring both languages seem to be gaining some traction (Cosmos, 2009; Sorosoro, 2009). Language extinction is generally irreversible and has no known positive outcomes (FEL, 2013), but Hebrew is one example of an extinct language that was able to be revived from ancient script.

2.4 Reversing Language Shift (Language Revival)

Is it reasonable to expend energy on preserving a language and ensuring it continues to be spoken by relatively small numbers of people? Why bother? When people cease to use a language – for whatever reason, that language will tend to increasingly become less used, by dwindling numbers of speakers, until eventually the language is not spoken at all (Gordon, 2005, p.8). Given that endangered languages have been (apparently) discarded by the majority of their speaker populations, should anxiety, much less a desire to resurrect, exist regarding any impending loss of language? Should effort be applied to reverse the decline? When the health of a language declines and the language becomes endangered to the extreme of being completely lost, the easy option is to comment “so what?” and regard the language loss as inevitable and irreversible. With some knowledge of what is also lost when the language dies and how that might impact the rest of the world, one might appreciate the perseverance of language revivalists who believe (or must believe) that the process of language decline is neither inevitable nor irreversible (Grenoble & Whalley, 2006; UNESCO, 2011).

The process of reviving or revitalising a language involves understanding the forces that have led to or contributed to the declining health and vitality of that language. Simplistically, initial strategies would then be formulated to minimise, counter-balance and/or reverse the impact of many, if not all, of those forces (Fishman, 1991; Grenoble & Whalley, 2006). In broad terms, language revitalisation seeks to increase the numbers of those with appropriate language knowledge, extend the situations where that knowledge is employed and secure language usage levels and domains of use to protect against the imposition (and re-imposition) of outside attitudes (Grenoble & Whalley, 2006, p.13). The language use and subsequent transfer of language to younger generations is a critical component of any language revitalisation strategy. A language is considered to be safe when children speak the language in a variety of common social settings and situations and the language is continually transmitted intergenerationally (UNESCO, 2009). Fishman (1991, p.91, 161; 2001, p73) advocates speaking the language in everyday contexts as a key strategy for language survival, rather than using political or governmental initiatives,

underpinned by policies and interventions, that are delivered out of traditional learning establishments (p.91).

Intuitively, the language revitalisation effort would stem from the recognition that the language is suffering some level of endangerment and from some confirmation that the language vitality is being impacted negatively by the shifting language preferences of the speaker community. The identification of the factors, or, more usually, the combination(s) of factors, that have caused or are causing the shifting language choices by that particular community is critical. Addressing these factors, in whole or in part, will form a major role in any initiative aiming to reverse the effects of language shift (Fishman, 1991; Grenoble & Whalley, 2006; UNESCO, 2003). Fishman (1991, p.8) observes, however, that it may be more critical for those intending to proceed with a task such as reversing language shift to be patently “clear in their minds and united in their hearts” as to why that task should be undertaken and on whose behalf that action is being undertaken.

Reversing language shift (RLS) requires an intervention. The weakening and decline of a language’s vitality pertains (primarily) “to cultures that no longer significantly regulate the daily lives of their members” (Fishman, 1991, p.8). A change in how members of a culture or community interact with each other, and with others, using their own language is required. Given that shifting the behaviour of a culture or community is challenging and not without its own problems, and that there may be varying levels of support for such a shift from within the language community itself, this is always a most difficult arena in which to intervene (Fishman, 1991, p.8). Since it is the members of the culture, the community of speakers, who abandon or maintain their language, and who are able to create the setting necessary for fostering fluency in the language, albeit following an acknowledgement of some level of dis-satisfaction with the status quo, such interventions should be owned and driven from within (Dauenhauer & Dauenhauer, 1998, p.59; UNESCO, 2003, p.4). To embark on the journey to reverse language shift involves a change that necessitates an increased cultural self-regulation (Fishman, 1991, p.16-17). Consequently, it is the community of language speakers itself that must eventually conspire to, or at least agree to, undertake such an intervention.

The assessment of language vitality and the tools that may be used in that assessment have been discussed previously (see Section 2.2.2). There is no simple solution for reversing language shift. The complexity and diversity of language communities means that even determining the number of actual speakers of a language is challenging (Fishman, 1991, p.7). Indeed, the bottom-line of any solution is that no one approach will suit all languages - each situation is unique (Grenoble & Whalley, 2006, p.21). Tailored strategies must be based on the optimum course of action for a particular (specific) language in a particular context and in a given timeframe (Fishman, 1991, p.12). The importance of an involved values definition, a prior deliberation and an honest clarification of goals, doubts, circumstances and possibilities should not be under-estimated as a pre-requisite for making informed choices and igniting timely and appropriate action (Dauenhauer & Dauenhauer, 1998, p.57; Fishman, 1991, p.11; Grenoble & Whalley, 2006, p.21). Fishman (1991, p.11) notes that:

... without such prior clarification and deliberation, there is a very substantial risk that a disparity of goals and a diversity of levels of commitment will remain hidden, only to erupt later in the form of schisms, defections, animosities and other disturbances that do far greater damage to 'the language cause' than could have been brought about by a modicum of delay for clarification and possible unification originally.

While it may be difficult for the most earnest of RLS proponents to settle for less than a complete language recovery goal, the majority of successes from RLS projects overall stem from the identification and selection of a few well-chosen smaller targets. "Such victories earlier on will do much more for the eventual larger-scale and longer-term success of pro-RLS efforts than will lack of success *vis-à-vis* more grandiose but impossible goals" (Fishman, 1991, p.13). To highlight this point to its extreme, Zuckermann (2012, p.1) states (especially in relation to the currently spoken Hebrew language) "I would prefer to have a hybrid language than none at all", believing that language revivalists must "discard the imprisoning purism prism" (p.1) and embrace a more dynamic stance as their revitalisation efforts evolve. Grenoble (2011) also discusses the 'tension' generated as endangered language communities struggle with the desire to foster diversity and with issues regarding standardisation, mainly of dialectal variation and orthographies. In terms of

standardisation, members of language communities may struggle to agree on which language form should be regarded as ‘standard’ since, effectively, this privileges one dialect or cultural nuance over another. In any case, it should be understood that attempts to reverse language shift are attempts at societal reform (Fishman, 1991). Latent rifts, disagreements, ruptures and difficulties are literally built-in to such reform efforts. An over-riding focus on dialectal variation, as is the case for some Māori-language revivalists, may well detract from the main goal of reviving the language itself³⁷. While the incumbent sociocultural order will generally require no foundation, no validation, justification or reasoning to be mindful of, its reform or modification is usually beset with just such requirements (Fishman, 1991, p.11). It is vexing but unavoidable that these validations, rationales and motivations must be well considered, well communicated and well understood by RLS proponents. This is necessary, partly in order to better cope with the arguments of those against the idea of reversing language shift, also because it is likely that some of these arguments may dwell sub-consciously, at least in part, in the minds of some RLS supporters as well. (Fishman, 1991, p11-12). Those who champion attempts to revitalise a language should fully realise the complexity, the subtlety and many ramifications of RLS and, therefore, the potential for the derailment of such efforts, although well-intentioned, due to ignorance, ill-preparedness and over-confidence (Fishman, 1991. p.33).

Language policy is often discussed at the national level, or perhaps at the wider community level. This, however, may not be the optimal level for RLS and language status planning generally. It appears likely that the more disadvantaged and under-resourced a particular language is, the less practicable and, therefore, less fruitful, nationwide or region-wide policies may actually be (Fishman, 1991, p.12). Since RLS involves some level of societal reform, facilitation and support from those in control of the current socio-cultural order can hardly be guaranteed, let alone expected, to be a basis for any sort of long-term success (Fishman, 1991, p.111). The groups seeking to foster the cultural change required by RLS, should only count on themselves, concentrating on targeted achievements oriented toward smaller community units such as clans, families or clubs – especially at the earliest

³⁷ Dr Richard Benton: personal communication (eMail): 3 October 2017

and, perhaps, weakest stages of the total effort (Fishman, 1991, p.111). The appeal of a focus on smaller community units may also be derived not only from a re-establishment of local options, local control, local hope and local meaning to life, but also “because it espouses the right and the ability of small cultures to live and inform life for their own members as well as to contribute thereby to the enrichment of humankind as a whole” (Fishman, 1991, p.35).

In short, the inception and implementation of an RLS effort might emulate the plight of a sick person. Using this analogy, Fishman (1991, p.39) proposes that in order to effect a successful cure, there must at least be an opening resolve that it is worth trying to save the patient. Following that resolve, it would then be necessary to determine what caused the illness so that a cure and a process of rehabilitation, if required, can be defined and attempted. Further to the treatment, some sort of alteration of the patient’s life circumstances will be necessary in order to minimise or negate a relapse following which the patient returns, either wholly or in part, to their original sick condition. In terms of languages, this particular discussion should then focus on maintaining language health and language health initiatives.

2.4.1 *Intergenerational Transmission*

The life or death of a language depends on its on-going use. The transfer of a language to successive generations is considered to be one way of ensuring on-going use and is widely regarded as the cornerstone of language survival (Chrisp, 2005; Fishman, 1991; Fishman, 2000; Lewis, 2009; Nettle & Romaine, 2000). Intergenerational transmission, where a language is passed down from one generation to the next generation of speakers is a primary goal of language revivalists and is consistently regarded as a key strategy for reversing language shift and securing the continued health of a language (Chrisp, 2005; Fishman, 1991). The process of intergenerational transmission occurs through everyday familial interactions (a critical success factor for the survival of a language) and makes a language self-perpetuating, in contrast to being kept alive artificially by education programmes for additional language learners (Chrisp, 2005; Fishman, 1991:2000; Lewis, 2009). According to Nettle & Romaine (2000):

The pulse of a language clearly lies in the youngest generation.

Languages are at risk when they are no longer transmitted naturally to children in the home by parents or other caretakers. Even languages which older, but not younger, children in a community have acquired are at risk (p.8).

The transfer of languages to successive generations can only be done by those who are able to speak the language. Those who are not fluent speakers must acquire the language in order for them to be able to transfer the language at some later point (Lewis, 2007, p.48). Language acquisition must be augmented by language *use*. Language acquisition in itself may be rendered redundant if the language is not spoken. Therefore, even though a mother tongue is learnt by children, there needs to be domains where they are actually able to use it (Houia-Roberts, 2004, p.18). Chrisp (2005) observes:

Intergenerational transmission ensures that children have regular and interactive exposure to the language in natural circumstances. The process also normalises the use of the language by socialising the children to appreciate that the language is an ordinary and omnipresent feature of domestic and social life (p.150).

Speaking domains, or the arenas where the use of the mother tongue is considered a typical activity, are inherent within intergenerational language transmission. The process of language acquisition, whether as a first or additional tongue, followed by language use and language transfer (to successive generations) should be an integral part of strategies aiming to reverse language shift. Necessarily, such strategies must aim to develop conditions and situations where the language can be safely used. According to Chrisp (2005, p.156), intergenerational language transmission should, therefore, address factors in four key areas:

- Language knowledge;
- Situation;
- Motivation;
- Critical awareness.

An individual should have an appropriate level of language knowledge before they can:

1. Choose to use that language; and,
2. Be able to transmit that language to younger generations.

Consideration of the environment will highlight situations that may foster or discourage an individual's particular language choice. For example, a speaker may hesitate to use that language if it has been outlawed or is perceived negatively by the general population. Motivation alludes to persons wanting or needing to speak a language before choosing to do so. Where fluent speakers know they are able to transfer the language to other generations and are aware of the consequences of doing so (and not doing so), this is referred to as critical awareness.

Language revitalisation will always occur within wider social and cultural arenas. The success of mother tongue use and intergenerational transmission hinges on priorities and emphases that are normally at odds with the greater belief and value system of which RLS is but a part (Fishman, 1991, p.114). Since RLS transpires as part and parcel of a greater ideological program, overarching strategies in terms of language management and language planning must also ensure co-ordination and synergies for various smaller, and, at times, isolated, initiatives (Chrisp, 2005; Fishman, 1991). Literature only roughly approximates the real situation of a particular indigenous language, and it is imperative to understand that different

approaches to language revitalisation are called for depending upon the current health of a language and unique local conditions (Reyhner, 1999, p.2). Chrisp (2005) advocates a well-planned approach and postulates that the development of any theoretical framework would have many advantages, namely:

- the establishment of long-term macro goals;
- the provision of direction and focus for participants in their practical activities;
- the increased awareness for participants in terms of their impact on the overall strategy;
- the ability to shift the burden from the small number of sectors to the whole;
- facilitating greater co-ordination between the organisations and individuals;
- links between participants can be made explicit;
- the implementation of a set of shared goals (p.35).

The development of clear overarching objectives should aim to deliver efficiencies and networking opportunities within and between various RLS initiatives. Additionally, any such frameworks must include communication strategies that will also provide awareness of any deliverables, before and when they become available. Better informed communities will share at least a sense of ownership and higher levels of engagement may well result.

Strategies that revitalise a language must ensure an element of maintenance. Successes with intergenerational mother tongue transmission will result in levels of restored language health, however, any gains must be nurtured and maintained to ensure they are sustained. The relationship between intergenerational transmission and language maintenance are intertwined within the overall RLS process. “Without intergenerational mother tongue transmission (or the transmission of written or spoken second language, if that should be the societal goal) no language maintenance is possible” (Fishman, 1991, p.113). In this instance, if nothing is transmitted, nothing can be maintained. Conversely, without the post-transmission process of language maintenance the speaker pool, upon which successive intergenerational transmission is reliant, will continue to diminish (Fishman, 1991). Language revitalisation generally seeks to increase the numbers of those with appropriate language knowledge and extend the situations where that knowledge is employed. As discussed earlier, this normally involves some sort of societal reform and a changing of the attitudes of the language group and of the wider community

where that language may be heard. Language maintenance, on the other hand, aims to secure current language usage levels and domains of use and to protect against the effect of outside attitudes upon recurring language shifting (Grenoble & Whalley, 2006, p.13).

Fishman (1991) states minority language strategies also need to move from oracy to literacy. Literacy should underpin the spoken language if there is to be serious commitment revitalising that language. Where mother tongue transfer to successive generations is supported by the transmission of the written language, language maintenance is strengthened (Fishman, 1991). Literacy is especially important in current times because it provides a way of communicating between individuals, groups and communities especially when they are spread geographically - the use of social media is one current example of this.

2.4.2 *Language Ecology*

The reversal of language shift is a process that occurs within a wider societal context and ideological framework than that of the language being revitalised (Fishman, 1991). It is most likely that some friction will occur as language priorities challenge the wider values system from within. Implicitly, language ecology appears to 'smooth' this friction by regarding the language as not being isolated from, but actually interacting with, other social, cultural and ecological factors. Grenoble (2011) adds:

Such factors include those which are traditionally considered to be within the realm of linguistics, such as the presence and use of other languages, as well as those which are not such as economics, politics and the physical or natural environment" (p.30).

Language ecology refers to the relationships between a language and the use of that language within its environment. In this instance the environment incorporates the language community or part of society that uses that language as one of its codes (Haugen, 1972). In other words, language ecology is concerned with how languages exist, evolve and interact in environments along with other languages - akin to an

ecosystem, and how the speakers of those languages interrelate and engage within those particular environments. These environments are generally underpinned by contexts that are cultural, economic and socio-political (Grenoble, 2011; Nagalakshmi, 2007).

Nagalakshmi (2007) describes language ecology as having limitless definitions and refers to literature that discusses:

... cognitive development and human interaction, the maintenance and survival of languages, the promotion of linguistic diversity, language policy and planning, language, language acquisition, language evolution, language ideology, the ecology of (multilingual) classroom interaction and the ecologies of literacy, oracies and discourses (p.1).

In terms of languages, ecology is used as a metaphor to creatively and pragmatically describe languages and the speakers of those languages in particular relationships with one another. An ecological perspective of language reflects language diversity within specific settings of social, political and natural environs and embraces multiple themes within language, literacy, and learning (Nagalakshmi, 2007).

Further parallels have been drawn between languages and biological species, and the term 'Language Ecology' is used to describe the wider relationship between languages and the people who speak them, or, in a broader sense of the term, an evolution of language in a way that is not too dissimilar to species evolution (Grenoble, 2011, p.30). The concept of biodiversity and its concern with variety of life is perhaps better understood today by an ever-increasing portion of the general population. That is to say that people are generally more familiar with biological connectivity and recognise the importance of conserving and maintaining the variety of life forms and the environments necessary for those life forms to function and interrelate (Nagalakshmi, 2007, p.2). When describing the ecological parallel, Grenoble (2011) explains that ecolinguistic language planning develops robust language environments, fostering the vitality of as many languages as possible. Additionally, the one language-one nation ideology of language policy and national identity is losing ground to multilingual language policies "which recognize ethnic and linguistic pluralism as resources for nation-building" and embrace discourses about diversity and emancipation in terms of oppressed and suppressed indigenous

and migrant languages and their speakers (Hornberger, 2001, p.27). In summary, the language planning paradigm is shifting from the previous premise that language diversity was a problem to that where conceptually language diversity is recognised as an asset (Hornberger, 2001).

An ecological approach to language describes much more than the relationships between the speakers of different languages in a specific setting. Linguistic ecology begins with a particular area rather than with a particular language and applies a comprehensive attention to all languages in the area rather than a select few (Voegelin & Voegelin, 1964, p.2-3). Perceived natural language orders are challenged and deconstructed in order to determine the kinds of language practices that are considered to be relevant, appropriate and correct in terms of the interrelating language communities within that area (Nagalakshmi, 2007, p.2). Hornberger (2002, p.30) further submits that multilingual language policies are essentially about opening up ideological and operational space in the environment for as many languages as possible.

The key elements of success for linguistic ecology rest on retaining the traditional and intrinsic importance of language usage to the culture, while remaining cognisant of and adaptable to a wider social setting. Hornberger (2001) declares:

... an ecology of language metaphor captures a set of ideological underpinnings for a multilingual language policy, in which languages are understood to (1) live and evolve in an eco-system along with other languages (*language evolution*), (2) interact with their sociopolitical, economic, and cultural environments (*language environment*), and (3) become endangered if there is inadequate environmental support for them *vis-à-vis* other languages in the eco-system (*language endangerment*) (pp.35-36).

The essential philosophical difference of ecolinguistics, is the focus on developing and preserving the environments or domains in which the languages dwell and are able to flourish. One might think that understanding language ecology would be a fundamental consideration for RLS supporters given that the process advocates “equitable status for as many diverse languages as possible by strengthening the

‘habitat’ of different languages in a language ecology and by creating links between them” (Grenoble, 2011, p.31,44).

Ecolinguistic planning occurs within the language community. In this sense it differs to traditional language planning which is generally has a ‘top-down’ approach and is commonly formulated, driven and overseen by an authority or group external to the community (Grenoble, 2011). Ecolinguistic planning envisages a philosophy similar to RLS in that it is a process supported and implemented by speakers and communities. The strategies are also similar in that they identify the current status of the language and language community, and, at a local level, aim to determine and address the underlying causes and effects of language shift (Grenoble, 2011, p.31). In terms of language maintenance, Grenoble (2011) observes that “ Rarely does his mean returning to a past or static ecology, as this itself entails a return to the very situation which caused the shift” (p.44). Rather the key elements of success rest on retaining the traditional and intrinsic importance of language usage to the culture, while remaining cognisant of and adaptable to a wider social setting. This is the essence of ecolinguistics where there is a focus on developing and preserving the environments or domains in which the languages dwell and are able to flourish. The focus centres on the changing language ecologies where language use is situated, and, therefore, on the impact of those changes on language shift. Ecolinguistics addresses the factors causing shifting language preferences rather than using a lens that considers the languages themselves as disappearing (Grenoble, 2011, p.31).

2.4.3 *Managing Perception*

The initial catalyst for this research hinged around issues of awareness, engagement and perception with regard to some technology-based initiatives that were undertaken for te reo Māori. The role of a marketing and dissemination strategy as part of language revitalisation would pay dividends especially in terms of awareness and engagement. While a selection of projects to-date have resulted in outcomes that arguably have some benefit in terms of stabilising an endangered language or promoting the use of that language, there is evidence to suggest that ineffective awareness campaigns mean project objectives and outcomes are largely unknown

by the wider population for whom the initiatives were undertaken. The outcomes and discussion regarding these projects are outlined in Chapter 4³⁸.

When multiple projects that seek to add value to revitalisation strategies are disjoint and the efforts largely uncoordinated, the outcomes can be poorly conveyed to the wider communities. Lewis (2007) advocates planning, situational analysis and marketing as important parts of the regeneration activity. From a Māori-language perspective, the Te Taura Whiri (2005) nationwide ‘Give it a go – Kōrero Māori (*talk Māori*)’ promotion with associated initiatives that aim to create a ‘funky’ image for the Māori language are also in line with this thinking (p.16).

2.5 Intragenerational conversations

Current Māori language strategies embrace a core theme of intergenerational language transmission³⁹, where the language is transferred from generation to generation. The process of language transfer from older to younger generations through everyday familial interactions is considered to be an important critical success factor for the survival of a language and is central to strategies that are based heavily on the research of Joshua Fishman (Higgins and Rewi, 2014, p16).

Technological capability exists for Māori-language conversations to occur using text, voice and video. Social software is one medium where the sharing of conversations, information and ideas occurs on a level playing field. There is evidence that Māori-language conversations are occurring within social media and that they can be influenced in terms of numbers of participants and the volume and duration of conversations. How is this useful to Māori language strategies? Technology is shifting language behaviour and the development of online Māori-language communities has shown that conversations using te reo Māori can be fostered within online social media⁴⁰. The application of specific strategies has met with some success in developing online forums where participants are willing to

³⁸ See also (Mato & Keegan, 2012)

³⁹ This is discussed further in Chapter 3

⁴⁰ This is discussed further in Chapter 5

interact using te reo Māori. A recent exercise on the Twitter platform is one example of that⁴⁰ (Mato & Keegan, 2013). Forums are also in evidence on Facebook where the bulk of the conversations within those particular Facebook groups use te reo Māori⁴¹. Context-based discussions, involving common issues or areas of interest, have successfully fostered online Māori-language conversations, but it appears that the majority of online communication between Māori still occurs in the English language.

When Māori communicate with each other through online social media there is little evidence of language transfer through the generations. Observations indicate that the use of te reo in these mediums appears to be less ‘vertical’ in nature, as one might expect with language interaction intergenerationally, and more ‘horizontal’ in that the conversations appear to focus more on the sharing of information, experiences and ideas in a manner that is almost dismissive of generational differences. We have coined the term “*intra*-generational” to describe this lateral connectivity. In this sense, the term intragenerational (perhaps pan-generational may be a better term?) might highlight the differentiation where online language communities focus more on language use across the board and less on the generational differences of those in the conversations.

Figure 10 and Figure 11 are very simple representations of the concepts of intergenerational vs. intragenerational as described earlier.

Figure 10 represents intergenerational language transmission and depicts a traditional top-down approach where the language is passed from the koroua (*grandparents*) to the mātua (*parents*) and then to the tamariki (*children*) and mokopuna (*grandchildren*). Conversation still occurs within and between the generations.

⁴¹ For example: The Facebook Group “Te Mana o te reo Māori”

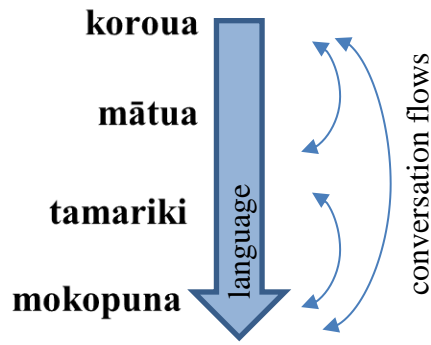


Figure 10: Intergenerational Language Transmission

Figure 11 represents intra-generational communication which is focussed more on the *kōrero* (*conversation*) and less on the make-up of the participants, which might include *tāne* (*men*), *wāhine* (*women*), *kamupene* (*companies*) and *tāngata* (*men, women, and people in general*). *Apataki* are depicted to include those who follow participants in the conversations - and by extension follow the conversations (to some degree), but do not engage directly. Strategies aimed at encouraging followers to participate directly might prove to be useful if only to increase the number of people in the conversations, thereby increasing the overall use of the language.

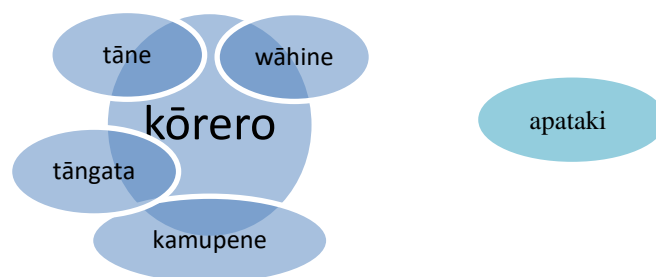


Figure 11: Intragenerational Communication

In terms of intragenerational transmission, it might be argued that, while transmission and learning may not be the main objective, the language is still being used in a manner that engages conversation, encourages ideas, may improve fluency and generally adds to language visibility and use.

Other research has highlighted differences between people who have grown up in the digital age⁴² and those who haven't. The term 'Digital Native' has been used to describe those who were born into digital technologies and, consequently, have known and used these technologies all their lives (Prensky, 2001). The premise of that particular research is that digital natives view the world differently. According to de Graf (2014), digital natives have an equalitarian view of the world where everyone exists on an equal level. Digital natives tend to view the world laterally rather than in terms of vertical hierarchies (de Graf, 2014, p.1). These assessments would appear to support what we have observed regarding the use of te reo Māori in online conversation. Language strategies that include the use of digital communication might well consider these assertions regarding the proposed differences between the world-view of younger learners in these times (the digital natives) and the mind-sets and learning styles of earlier younger generations.

We discussed previously how ecolinguistic planning occurs within the language community rather than being formulated, driven and overseen by an authority or group external to the community. According to de Graf (2014), the digital native is likely to be more values-oriented (rather than goal-oriented) and apt to embrace genuine democracy and equality rather than centralised forms of governance. One might consider these attributes would complement a language strategy that is designed and self-regulated by the language community, has a focus on fostering the language within younger generations, remains cognisant of and adaptable to a wider social setting, and, has a focus on developing and preserving the environments or domains in which the languages dwell and are able to flourish. There may be potential for synergies where community-based strategies based on ecolinguistics, that foster the environment and the languages within the social setting, are cognisant of the philosophical outlook of younger generations. Examples of this include the development of online language forums (discussed further in Chapter 5) and the gamification⁴³ of language-learning.

⁴² For the purposes of this writing, the Digital Age began in the 1980s with the increasing uptake of personal computing, mobile connectivity (phones) and the creation of the World Wide Web

⁴³ Used to refer to a learning system that has been modified to be used as if it was game

The outcomes of the development of an online Māori-language community are outlined in Chapter 5. The potential exists for much more research. The astute development of online language communities, to share information, ideas and conversations, is one example of extending the environments where minority languages might be used. This includes extended accessibility using mobile technologies. ‘Indigenous’ websites already exist that represent indigenous organizations, promote indigenous e-commerce and further the unique concerns of indigenous communities that include cultural maintenance and language revitalisation (Dyson & Underwood, 2005).

Investigations are underway into how social networking platforms such as Facebook and Twitter can provide spaces for language communities to interact in their own languages (Jones, Cunliffe & Honeycutt, 2013; O’Carrol, 2013). Social networking has become a way for indigenous people all around the world to connect with others from the same language group regardless of the distances that may separate them. Facebook is one example of a medium that can be used for strengthening weak familial ties, with cousins living overseas for instance. The platform is also used extensively to connect with loved ones and friends who are in different towns, cities and countries⁴⁴. Unfortunately, it may also mean that the urgency to return home, or visit family is reduced by the ease of connectivity online. Feedback also suggests a desire for younger generations to have their own space that is separated from (especially) their parents (O’Carroll, 2013, p.53). This is a likely reason for the slowed growth and aging of Facebook as an exodus of teens and their subsequent uptake of sites such as Instagram, Snapchat and YouTube have created sharp growth on these platforms (Duggan et al, 2015). There have also been suggestions that new media provides new opportunities for dominant languages to be even more dominant (UNESCO, 2003, p.11; Jones et al, 2013, p.654). Others suggest that simply increasing the amount and range of media content in a language may not assist with its survival (Cormack 2007, p.58). However, the visible presence of an indigenous language in new media suggests that the language might, at the very least, still be relevant to younger speakers (Eisenlohr, 2004, p.32).

⁴⁴ Observed through personal connections on Facebook

2.6 Summary Conclusions

Minority languages form the bulk of languages worldwide but are each spoken by relatively small numbers of people. The endangered status of many minority languages, therefore, impacts a relatively small proportion of the world's population. However, the pressure on minority language speakers to use a major language is further mounting as the widespread use of particular technologies tends to be used in languages that are more widely recognised. As minority language speakers shift their speaking preferences to a more well-known language, the use and visibility of their own language, in general, begins to decline. Language underpins identity and expressions of insights and relationships to the natural world gleaned over hundreds of years. As languages become less-used and disappear (in their original forms) - many of them not yet recorded - a wealth of knowledge about history, culture, the natural environment, and the human brain begins to vanish. The languages that once conveyed those particular wisdoms and world views are no longer able to be used and, consequently, the representations of the cultural traditions and practices are conveyed in another language in a way that may not entirely capture the essence of those cultures and knowledge systems quite as accurately.

The health of a language is normally measured by the size of the speaker pool and the areas and situations where that language is used. When language speakers decide to use another tongue, especially for extended periods of time, it generally signals a preference where, in particular circumstances, that language is more useful or perhaps more prestigious than their own. It is likely that the 'new' language then becomes the preferred communication tool, at least in certain instances, and sometimes, by extension, not only for themselves but for others within their language group including their own children. The effect of that language switching will then begin to reduce speaker numbers and reduce the situations where the minority language is used which, in turn, compounds the declining health of that language. As the cycle of language switching and declining health repeats, the arenas where the mother tongue is used decreases and over time the number of speakers of that tongue also diminishes. If the cycle is not broken, the health of the language declines toward severe endangerment and loss.

Language restoration enjoys more success when the factors, or more usually the combination(s) of factors, that have caused or contributed to the declining health and vitality of that language have been identified and understood. Identifying the reasons that language switching has occurred will provide an inkling of the size of the challenge ahead. The process of addressing many, if not all, of these factors in the course of revitalising a language can be an arduous and extended journey but it is this process that should be the focus of attention rather than regarding the language itself as disappearing. It is critical that those involved in the process of restoring a language understand the difficulties that must be faced. The initial stages of any such process must involve a deliberate and honest clarification of values, goals, doubts and possibilities. Language revivalists should be aware of the enormity of their undertaking. Why they are undertaking the journey and on whose behalf should be a critical pre-cursor for all language revivalists.

Reclaiming language space is an intervention of sorts. The extent to which societal reform must occur in order to rescue an endangered language is challenging and the processes of change afflicted with inherent problems. How members of a culture or language group interact in their own language with each other and with others must change. The members of a particular language group will need to attach an importance to their language and agree to support strategies aimed at reversing the effects of language shift for any language strategies to have the best chance of success. Behaviours and attitudes must undergo a shift – and not just for the affected language group. Factors affecting language choice should be recognised and communicated so that the language group can agree on how the language will be fostered and what levels of focus will be applied to different aspects of the language. This will include the impact of the attitudes of the wider or more dominant language community. How those attitudes affect the shared environment for minority language speakers is usually a key factor that will need to be addressed. In recognition of this factor alone, themes of cognisance and co-existence, in terms of other languages that might also be used in the wider societal settings, should be an integral component of an overarching philosophy.

The members of an affected community of minority language speakers are in the best position to foster the requisite environment for reclaiming language fluency and, consequently, it is that particular language collective itself that must eventually

undertake the self-transformation. This implies the intended solutions will be specific to the language group and that the strategies for language restoration have largely been designed by members of that group. The necessary self-interrogation and commitment to workable strategies, as painful as they may be, then underpin the notions that it is the affected language group who are in the best position to devise their own plan of action and to determine their own paths and direction. Because the processes of self-scrutiny, strategy design and action targets have largely been tailored from within, notwithstanding the impact of the wider social setting as described above, that language community itself will have an inimitable vested interest in their eventual success.

Successful language regeneration strategies seek to ensure the language is always spoken by the youngest members of the language community in as many varied situations as possible. Currently those strategies focus on continuously transferring the language from generation to generation and encouraging extended language use initially in the more familiar familial situations such as the home, the places where others in the same language group may congregate and areas in the neighbourhood where the use of the language is automatic and normal. This implies that there is already a pool of speakers able and willing to foster those conversations and to share their knowledge of the language. When that pool of speakers is well represented in terms of numbers relative to the wider community, the language can still be spoken and heard even within the presence of other languages that may be more dominant in other situations. This might be regarded as an ideal - where the affected language has a reasonably strong grounding and is self-perpetuating - notwithstanding, as mentioned previously, the impact of the wider community of languages.

Language strategies aim to maintain languages by the use of the language in a variety of situations. Those strategies will also need to be supported by levels of language literacy. In the focus areas of technology and younger users, literacy-based language learning becomes important. Given the extended periods of technology use, more specifically in terms of online messaging and social networking, a lack of literacy in the mother tongue will normally result in a language switch to ensure the interactions can continue. Language literacy will also ensure the members of particular language groups are able to communicate using

messaging, electronic mail and social networking platforms when they are separated geographically or when spoken interactions are a less viable option.

Minority language groups aiming to reinforce the health of their language need to be cognisant of changing trends and technologies and, more importantly, how those technologies affect the use of their language and how their languages are used within those technologies. In general, technology changes are embraced far more quickly by younger generations and, in most instances, to a much greater degree. Given that the younger language speakers are a focus area for language strategies, their use of their mother tongue in a variety of environments that include new technologies would seem to be an area worthy of expending some energy upon. In doing so language revivalists may need to reconsider their methodologies – especially regarding the use of the language within digital technology. It seems that strategies will need to be cognisant of a range of generational perspectives and expectations of the language speakers. While another descriptor might be more appropriate than ‘*intragenerational*’, the notion of across-the-board broadcasts that appear to be legitimised by their content and tend to disregard generational differences should perhaps be better remembered than the descriptor itself. When technology-focussed strategies are devised, it would be useful initially to regard the use of the language in digital domains as a way to augment the fruits of intergeneration transmission. Additionally, as the technologies evolve and as the uptake of those technologies trend within the various strata of the language communities, continuous interrogation of the language strategies and philosophies would ensure that they are still relevant to all members of the language group and will still realise the outcomes that they were designed to achieve.

3

Re-Indigenising a nation: Reversing language shift in Aotearoa

Whakatauākī

Mai i te tihi o toku tūpuna, ā Tongariro, tiro tiro kau iho ki ngā pai [*sic*] māramatanga, ā ka whakaaro ake. Ka hoki au mahara ki tua whakarere ki te wā i toi tū ai te whenua, ki te wā i takahia ai te mata o te whenua e ngā tūpuna, ā, tenei au i tū whakaiti nei. Kaore oku take ki tetāhi tiriti hei whakaatu i te tika, i te he rānei. Ina ka whai atu, me perā tonu.

From the peak of my ancestor, Tongariro, I scan the horizon and reflect. Thoughts abound of days gone by when land endured encroaching human presence, and I, remain humble. I do not need a treaty to show right or wrong, but if I do it is because, it *is* so.

Tumu Te Heuheu Tukino V111 (2004)⁴⁵

“Ka takoto tapu te Tiriti	The tapu ⁴⁶ of the Treaty lays waiting
Taenoa [<i>sic</i>] kia rongu te iwi i tona ha	Waiting for the people to fully comprehend
Tuturu ka hopu te ringa i te rau o mauri	And grasp the significance of its essence”.
	(Henare, 2000, p.30) ⁴⁷

⁴⁵ In, Belgrave, Kawharu, & Williams, 2005, p.iii. Note: Grammar is as quoted.

⁴⁶ Holiness, sacredness, purity

⁴⁷ From a letter by Sir James Hēnare (1911-1989) sent to the hui Ngā Kōrero mō Waitangi, held at Turangawaewae (Ngāruawahia, NZ) in 1984.

3.1 Introduction

The preceding whakatauākī encapsulates a potentiality of the Treaty of Waitangi that is yet to be realised. Tumu Te Heuheu Tukino VIII is the Paramount Chief of Ngāti Tūwharetoa of the Central North Island of New Zealand. Sir James Hēnare Lt. Col, KBE, DSO, LLD⁴⁸ was a prominent leader in New Zealand – awarded the Commander of Most Excellent Order of the British Empire (CBE) for his prominent work at regional and national levels in New Zealand. Both men were emphatic about a bicultural reality in New Zealand – an intent of partnership that remains latent within the spirit of the Treaty of Waitangi.

In many respects, the current social and political climate of New Zealand has been shaped by three significant events in our history:

1. the advent of the European;
2. the creation and signing of The Treaty of Waitangi; and,
3. the departure from the understandings and underlying principles of that treaty (predominantly by a treaty partner that would be seen to become belligerent and oppressive).

Commentary regarding the initial arrival of explorers, traders and settlers from other countries suggest amicable partnerships were formed based primarily on trade and mutual respect. During the late 1700s, early 1800s New Zealand was quickly becoming a thriving trade centre and Māori, migrants and visitors were forging trade-based alliances. These relationships would come to be threatened by acts of lawlessness and cultural disregard, mainly resulting from a burgeoning influx of immigrants. Some Māori chiefs and settlers petitioned King William IV, the reigning British Monarch at the time, to provide some measures of order and protection. The British were reluctant to become involved in the local politics of such a far-flung outpost which was not yet a British colony. But other events conspired to shift the British stance. The requirement of New Zealand-based trading ships to be registered and display a flag, the interest shown in New Zealand by other

⁴⁸ Lieutenant Colonel (with the 28th Battalion), Knight of the British Empire, Distinguished Service Order, Doctor of Law (Honorary).

countries, and the planned extensive emigration of British subjects to New Zealand would set in motion a chain of events that would culminate in the signing of a treaty.

The selection of the Flag of the United Tribes of New Zealand encouraged some northern Māori chiefs to act collectively and allowed ships that were registered in New Zealand to satisfy British maritime laws and travel to Australia – a major trading market. British Resident Minister⁴⁹, James Busby, referred to this flag as the 'national' flag of New Zealand. Many of those northern chiefs would later agree to embrace the Declaration of Independence of New Zealand, calling their collective selves Te Wakaminenga o Nu Tirene (*the Confederation of United Tribes of New Zealand*) (Orange, 2013; Stenson, 2004). The sovereignty and independence of Māori arising from the Declaration was recognised by the British Crown who also agreed to extend Crown protection to Māori and New Zealand in general (McLaughlan, 2004, p.14,15). This was followed a short time later by the signing of the Treaty of Waitangi between Māori chiefs and representatives of the British Crown. Such measures were implemented to initiate frameworks that supported a unified way to address the issues of the time. Ultimately, those measures merely provided an opportunity for the British to eventually wrest and assume the mantle of sovereignty and governance in New Zealand.

Much of these histories were not taught in New Zealand schools and to a large degree still aren't. The exposure of the Treaty and Treaty issues in the New Zealand education system has been so minimal that generations of New Zealanders have grown up unaware of its existence and meaning and, as a result, the majority of exiting students are to this day largely ignorant of some of the fundamental truths regarding New Zealand's history (Solomon, 2005, p.215). That history has been obscured and hidden from view, underpinning the typical New Zealander's want for relevant knowledge and obfuscated by commentary that is often founded on misunderstanding, racial animosity or sheer ignorance (Christy, 1997, p.11). The illusion of being 'Kiwi', as some embodiment of national pride and singular national identity, obscures an underlying framework that supports ongoing

⁴⁹ A British Resident Minister (or more usually British Resident) takes up permanent residence in another country and is effectively the representative of British law and order and diplomatic interests (King, 2003, p.152) – often viewed as a form of indirect rule.

colonised and colonising attitudes that are so ingrained in the fabric of our country as to remain largely invisible. It is further suggested that the artificial idea of national identity is “a device that masks ongoing colonising practices” and is instead “a euphemism for continuous colonisation” (Byrnes, 2009, p.1).

The injustices inflicted upon Māori secured a wealth and uncontested governance for an assimilating power determined to ensure a singular identity in New Zealand. The appropriation and seizure of land, the elimination of spiritual belief systems and the suppression of the language, often by legislation, would result in an erosion of te Ao Māori (*the Māori world and Māori world view*) and a systematic marginalisation that would reverberate throughout the decades to current times. Following warfare, defeated Māori faced severe retribution. McLaughlin (2005) observes:

The confiscation of more than 1.2 million hectares of their land in Taranaki, Waikato, Bay of Plenty, the East Coast and elsewhere after the war was called by historian Keith Sinclair: ‘... the worst injustice ever perpetrated by a New Zealand Government.’ The confiscation was punitive only in concept because the best land was taken, not necessarily that which belonged to those who had ‘rebelled’.” (p.74).

Many justified this misappropriation with “a popular, conscience-salving, piece of casuistry” (McLaughlan, 2004, p.74). Those commentators would assert that British ‘sovereignty’ under the Treaty of Waitangi meant Māori were subject to British law, and, anyway, taking land by conquest was justified by their own former (Māori) law (McLaughlan, 2004, p.74) - a rather cavalier contradiction of viewpoints. There exists a perception in New Zealanders that Māori wish to turn the clock back and enjoy life as it was before the European arrival. The widely held misconceptions about Māori self-determination coupled with "the lack of any serious endeavour to educate New Zealanders about the Treaty of Waitangi and its historical and contemporary importance in New Zealand today" mean that these perceptions are at least understandable (Solomon, 2005, p. 214,215). Campaigns designed to locate New Zealand's stories and history within a collective New Zealand sentience would set a solid platform for the ongoing relations between all New Zealanders. One would think that same platform would bode well for the cognisance, recovery and ongoing health of te reo Māori.

Te reo Māori, the indigenous language of Aotearoa/New Zealand, has weathered the onslaught of a colonising intruder intent, as history would show, on acquiring new territories and subjugating current occupiers within an empire-building philosophy. As a result the health and use of te reo Māori has declined sharply in the last 170 years. From 1973 and 1979, Richard Benton and his team interviewed 6,470 Māori families throughout the North Island of New Zealand. A total of 6,916 household heads took part in the survey, supplying extensive information about their knowledge of the language, their use of the language in a variety of situations, and their attitudes and experiences related to the language (Benton, 1991). In addition, they contributed information about the age, iwi and hapū membership, residential history, education, and knowledge of oral and written Māori of all members of their households, thus expanding the coverage of the survey to 33,338 individuals. These interviews resulted in the now renowned *NZCER Sociolinguistic Survey of Māori Language Use*. The findings showed that the use of te reo Māori use was in rapid decline and the language was in danger of disappearing. It served as a clear sign that drastic measures had to be taken in order to revive te reo Māori usage and to keep the language alive for generations to come.

Māori renaissance, especially over the last few decades, has created a conspicuous division amongst New Zealanders as Māori undertake to not only preserve their culture and language, but also to cement the positioning and status of te Ao Māori in the social and political fabric of New Zealand and, therefore, in the minds and hearts of all New Zealanders. Many Māori-driven initiatives have enjoyed extensive media attention – more especially when they have been underpinned by the principles of the Treaty and also when they have included some form of contention and public unrest. In more recent years the actions and the conflicting views of the actors and general public - including those who have been affected directly, or indirectly, or have enjoyed roles as observers – have served to fuel debate as the various stances, some based on knowledge and some based on perception, are expounded, debated and defended in public arenas.

The national awareness of recent language initiatives may well have arisen from one act singularly-recognised by a nation locked in the throes of an insidious

oppression that was, at once, both overt and veiled in its deception. In 1984 a phone operator, Naida Pou⁵⁰, working for the New Zealand Post Office began greeting domestic toll callers with the standard Māori greeting of 'kia ora'⁵¹. Refusing to greet callers with the standard 'tolls here' meant Pou was often reprimanded by her superiors. However, her stance attracted national attention so much so that 'kia ora' has been recognised and used as a standard greeting in New Zealand for the last 30 years or so. During the past five or six decades New Zealand has witnessed a plethora of projects aimed at rescuing a language on the slide to extinction. This became a period of ever-increasing acts of disjoint resistance - occurring in a time when Māori were beginning to reassert their visibility on the nation's consciousness. Peppered with instances of language transformation initiatives, recent decades have seen endeavours aimed at halting the decline of language health, and cementing a national philosophy of language visibility and cultural growth. Even the act of pronouncing Māori place names properly, more especially if one resides at that place, is important because it impacts the country's consciousness collectively - rather than just the consciousness of Māori (Flavell, 2015).

Although, the Treaty of Waitangi is considered by many New Zealanders to be void of legitimate authority, the last forty years or so has seen a commitment by successive governments to address breaches of the intent of the original document. The establishment of the Waitangi Tribunal has been the vehicle through which Māori have been afforded a means of redressing the innumerable infractions that would befall them in the years following the Treaty signing. For much of the twentieth century - until the 1970s – there existed a certain smugness among New Zealanders, including many Māori, at an "apparent lack of social prejudice" with the widely-held view that "New Zealand had the best race relations in the world" (Phillips, 2005, p.353). From then on, Māori were in the throes of questioning the climate of assimilation and colonisation, and coming to realise a vision of national Māori identity and sovereignty. At that time, Pākehā were embracing a vision to tackle racism both abroad and at home – most noticeably with the protests against apartheid in South Africa (Phillips, 2005, p.353-354). King (2003) observes that toward the end of the twentieth century, the relationships between Māori and

⁵⁰ Now Naida Glavish

⁵¹ Regarded as the Māori equivalent of 'hello' but more accurately translated to mean 'be well'

Pākehā and between Māori and the Crown had undergone "major and irreversible adjustments" (p.502). Institutions "were bending slowly but decisively in the direction of Māori needs and aspirations" (King, 2003, p.502), realising assorted gains for Māori that had become a much more visible aspect of New Zealanders' lives than in previous generations.

The whakatauaākī opening this chapter refer, albeit subtly, to a potential bicultural (and perhaps bilingual) New Zealand. Perhaps the awareness of this is already growing in New Zealanders' minds, but the indications are pointing to a mutuality of a Pākehā/Māori relationship that had begun as early as 1769 (King, 2003, p.518). The recent calls from the Waitangi Tribunal to look to a future New Zealand, beyond the Treaty grievance resolutions, is no coincidence. But any future partnership needs to be founded on understanding joint histories and a mutual respect. King (2003, p.518) opines:

As another manifestation of that respect, just as Pakeha were now decades away from the stance which viewed Maori culture as 'primitive', 'backward' or 'barbaric', so Pakeha felt that they ought not to be viewed by Maori as tau iwi or aliens, representatives of a colonising power that merely stole material and cultural resources from Maori and gave nothing in return.

In the context of the opening whakatauaākī from Sir James Hēnare, it would seem the dormant essence of the Treaty would be realised by the mutuality of a relationship where Māori aspirations are jointly recognised and embraced and, likewise, Pākehā aspirations are jointly recognised and embraced. In this sense, both Michael King (King, 2003) and Sir James Hēnare advocate a New Zealand that would have to become bicultural (especially before it could become multicultural), and that the road to a bicultural and bilingual New Zealand is the two-way street that both Māori and Pākehā must tread together.

This chapter discusses some initiatives aimed at halting the decline of the use and the overall fluency levels of te reo Māori. That decline will be framed by an overview of particular key events in the history of New Zealand. Some fundamental covenants that arose from early encounters and protracted frictions between the Māori and Pākehā cultures will be reviewed. The review will also discuss the events following the establishment of these covenants that contributed to widespread

language shifting by Māori-language speakers. The selected covenants include the Flag of the United Tribes, Te Wakaminenga and the Declaration of Independence and the Treaty of Waitangi. The wider discussion will also include an overview of the Waitangi Tribunal, the commission of enquiry established to investigate 'breach of Treaty' claims lodged against the New Zealand Government, and selected community-based and government-driven initiatives that aimed to halt and reverse the decline of Māori-language health and to reinstate the language as a significant measure of national identity.

This chapter will begin with a brief historical background and an outline of selected historical milestones:

- The arrival of the British
- The appointment of a British Resident to New Zealand
- The United Tribes Flag
- The Declaration of Independence
- The Treaty of Waitangi, and,
- The formation of the Waitangi Tribunal.

A precis of some community-based initiatives – Te Kōhanga Reo and te reo Māori claims lodged with the Waitangi Tribunal will precede a rudimentary synopsis of a selection of Government-established initiatives. These will include:

- The Māori Language Strategy 1997, 2003 & 2014;
- Te Paepae Motuhake;
- Te Hikitia – NZ Ministry of Education, and include,
- Te Wahapū – NZ Council of Educational Research⁵².

The wider discussion will be observant of references to attitudes and perceptions to te ao Māori and to the revitalisation of te reo Māori. In particular, measures that seek to gauge the 'mood' of New Zealand as Māori, with the support of the Government, seek to recover and relocate their language at a national level. An examination of the grievance settlement process and the ensuing attitudes post-

⁵² Although not a government initiative, Te Wahapū operated under the aegis of the New Zealand Council for Educational Research, before transferring to the Ministry of Education, finally resting under the auspices of Te Taura Whiri i te reo Māori (*The Māori Language Commission*)

settlement of the parties involved will be used to assess latent expectations, if any, about issues such as national identity, a partnership based around two founding cultures and how New Zealand will proceed past the grievance settlement process. Community-based language programs that are supported by government initiatives are slowly aligning in a manner that seeks to restore te reo Māori as a nationally spoken language. Observations regarding the visibility of the Māori language and Māori culture, especially in the areas of education and broadcasting, will be investigated within the selected language-based initiatives. Additionally, how do the various programs impact notions of nationhood, national identity and of what it means to be a New Zealander? This will also be discussed as an outcome of reviewing the selected language strategies.

A brief outline will present examples of the use of te reo Māori within contemporary technologies and identify where the strategies for the restoration of te reo Māori have been cognisant of, or incorporated the use of, different aspects of a range of contemporary technologies. It has been postulated that the information revolution and extended connectedness has accelerated a wholesale shifting of language preferences, at least when using contemporary information and communication technologies. The necessity to use a major language within global technologies to ensure a wider reach in terms of communication has forced a language shift, and in many ways an identity shift, as online cultures become hazily homogenous and the identity of the individual absorbed into the philosophy of modernisation and the pervasion of global media (Warschauer, 2011, p.4). As such, a cursory examination of Māori language strategies will identify whether or not they are cognisant of technology-driven language shift, and whether or not they endeavour to establish and support a Māori-language profile in technology-based environments.

3.2 Background

In the late 1700s Europeans were beginning to visit New Zealand. Significant during this time was the first visit by British explorer James Cook in 1769 and the formation in 1788 of a British convict colony in Sydney, Australia. This penal colony acted as a staging platform for traders to travel to New Zealand aiming to take advantage of the abundance of resources in the form of marine wildlife and saleable flora such as timber and flax. During this period most visitors stayed temporarily but some, such as traders, missionaries and hunters (mainly of whales and seals), elected to remain with some permanence (Orange, 1989, p.5). In the early 1800s visitors began to arrive in increasing numbers. At that time, Aotearoa was predominantly populated by indigenous peoples who would later, in the 1840s, come to be known as Māori. Prior to that the aboriginals of Aotearoa referred to themselves as *tāngata māori* (*ordinary people*) (Orange, 2011, p.7).

Māori and British quickly engaged in business relationships where provisions, labour and land were traded for European goods that included household items, iron tools and industrial technology (Orange, 1989; Stenson, 2004). Both Māori and British alike had come to realise that successful interactions meant they had to forego force and secure mutually beneficial partnerships (Orange, 1989, p.5). By the late 1830s a growing number of Europeans began to view New Zealand as a place where they could come and live permanently (Keane, 2012, Orange, 1989). At this time there were about 125,000 Māori in New Zealand and about 2,000 settlers. As the migrant population increased Māori began to grow uneasy with the lawlessness, the disregard for custom and some of the less sociable practices displayed by migrants and foreign traders. The threat of incursion by the French was also a cause for concern for Māori (Keane, 2012; Orange, 1989). The positive relationships between Europeans and Māori, a feature of the early years, began to break down. Relationships became more fractured as Sydney-based land traders began buying up vast tracts of Māori land - a forewarning for Māori leaders of the “Pakeha drive to seize the land” (Orange, 1989, p.6).

In 1831 some concerned Northern chiefs and European residents petitioned Britain’s King William IV seeking intervention and protection, recognising the

need for some kind of government to manage the violence arising from the growing conflict between the cultures (Keane, 2012). Apart from the concerns of lawlessness, there was a sense of unease about the interest in New Zealand shown by French and American factions. This unease increased when a French national, Charles Philippe Hippolyte de Thierry was known to be heading to New Zealand with a plan to declare a sovereign and independent state of Hokianga. Although the British Crown was reluctant to intervene, they were becoming concerned that New Zealand might become annexed by another nation and so appointed James Busby to the official position of British Resident of New Zealand. Busby arrived in New Zealand in 1833 (Keane, 2012).

At about the same time the New Zealand-built trading ship, the *Sir George Murray*, was seized by customs officials in Sydney. The Australian trading market was subject to British navigation laws, and trading ships were required to carry official documentation which included a registered flag (Ministry of Culture and Heritage, 2015b). Because New Zealand was not a British colony, New Zealand-built ships could not sail under a British flag nor could they sail without a flag, New Zealand trading ships and their cargoes could be seized by Australian port authorities. The seizing of the *Sir George Murray*, which was part-owned by Māori chiefs Patuone and Taonui, provided an opportune moment for Busby to convene a number of northern chiefs to agree on a national flag under which New Zealand ships could sail (Keane, 2012; Ministry of Culture and Heritage, 2015b). The assembled chiefs reportedly had no notion of why they were required to have a flag on their vessels and were quite puzzled when the three flag options were presented by missionary Henry Williams (King, 2003, p.153-154; McLean, 2005, p.90; Ministry for Culture and Heritage, 2015b). In spite of this, the assembled chiefs selected one that would be known as the United Tribes flag. In 1834, after gaining recognition from King William IV, the United Tribes flag became the 'official' flag for New Zealand ships (Keane, 2012; Orange, 2011). The main importance to the Māori involved would revolve around trade, especially in terms of access to the burgeoning market in Australia, and the acknowledgement by the British Crown of the status of the flag and the mana (*authority*) of those chiefs.

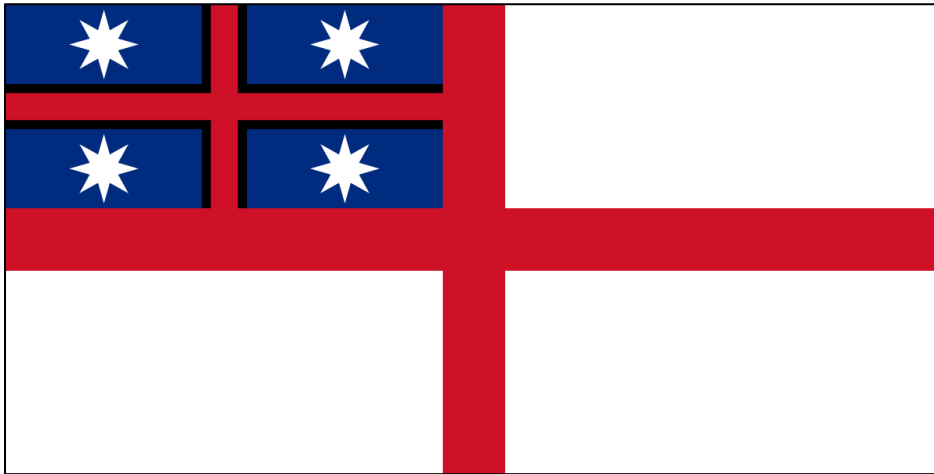


Figure 12: Representation of flag of the United Tribes

The selection of a national flag for ships was regarded by Busby as a stimulus for encouraging the Māori chiefs to form alliances with a view to some form of collective government (Keane, 2012). It was also viewed by Māori as official recognition and acknowledgement of their separate identity as Māori (Orange, 2011). This became another opportune moment for Busby to attempt a more formal recognition of a union of Māori chieftains. In 1835 he drafted a declaration of the independence of New Zealand which was eventually signed by a total of 52 chiefs. The Declaration affirmed an independent Māori state, avowed peaceful relations and provided for protection for British citizens. Māori then petitioned for and received recognition of the Declaration from King William IV (McLaughlan, 2004, p.53). McLean (2005, p.92) would later refer to the flag as "a flag of convenience for the protection of European-owned New Zealand trading vessels" adding that the flag has "acquired more complex symbolism over time, often being flown as a flag of protest or of cultural assertiveness".

3.3 He Wakaputanga o te Rangatiratanga o Nu Tirene: The New Zealand Declaration of Independence

He Wakaputanga⁵³ o te Rangatiratanga o Nu Tirene (*The Declaration of Independence of New Zealand*) was first signed on 28 October 1835. The initial signing was completed by 34 northern Māori chiefs and eventually signed by a further 18 chiefs (Keane, 2012, p.1). The declaration was driven by two main factors. Firstly, the increasing friction between settlers and Māori and the concerns of lawlessness and violence. Those concerns would prompt Māori and some British subjects to petition King William IV to introduce some form of structured governance. Secondly, there was apprehension, by the British and by some Māori, of the interest in New Zealand expressed by nationals of France and the United States of America. In 1834, self-proclaimed French nobleman Charles Philippe de Thierry announced plans to declare a sovereign and independent state of Hokianga, in northern New Zealand – see Figure 13 (Keane, 2012, p.1; Ministry for Culture and Heritage, 2013, p.1). Although de Thierry’s claims were later refuted, the British were still worried that if they did not actively intervene then another country might do so. Busby’s reaction, to instigate proceedings resulting in the Declaration of Independence, would incite Governor Bourke of New South Wales to allude to the Declaration as “a paper pellet fired off at Baron de Thierry” (King, 2003, p.155; Ministry for Culture and Heritage, 2013, p.1).

The Declaration of Independence was drafted by James Busby, missionary Henry Williams and missionary printer William Colenso. It was then translated into te reo Māori by Henry Williams. Busby viewed the document as a significant indication of Māori national identity albeit in the Northland region and, although Māori were not involved in the preparation, the document was nonetheless signed by 52 Māori chiefs over a period of four years. The Declaration was acknowledged by the British Government in 1836 (Ministry for Culture and Heritage, 2014, p.1). The

⁵³ The use of ‘wh’ (i.e. Whakaputanga) was not yet conventional Maori orthography (Keane, 2012).

Declaration consisted of four articles and asserted the independence of Nu Tirene (*New Zealand*) under the control of ‘te Wakaminenga o nga⁵⁴ Hapu o Nu Tirene’ (*the United Tribes of New Zealand*). Te Wakaminenga planned to meet ‘in Congress’ at Waitangi, in northern New Zealand, each autumn but, mainly because of rivalries and continued war between the tribes, these meetings never eventuated (Ministry for Culture and Heritage, 2014, p.1; Orange, 2011, p. 15).

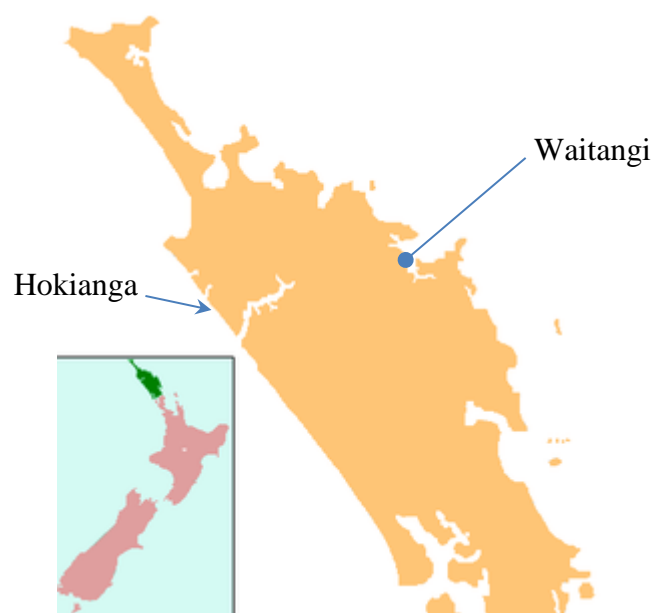


Figure 13: Northland (inset: New Zealand - Northland is shaded)

3.3.1 *The Articles*

The declaration that was signed was written in te reo Māori – see Figure 14 & Figure 15. An English-language translation was made available shortly after (Keane, 2012). A summary of the four articles follows:

In **Article One** Nga⁵⁴ Tino Rangatiratanga (*The Sovereign Chiefs*) declared Nu Tireni to be a ‘wenua rangatira’ (*independent state*) and while doing so called themselves ‘te Wakaminenga o nga Hapu o Nu Tirene’ (see underlined text in Figure 14).

⁵⁴ The use of the tohūtō (e.g. ngā) was not yet conventional Maori orthography (Keane, 2012).

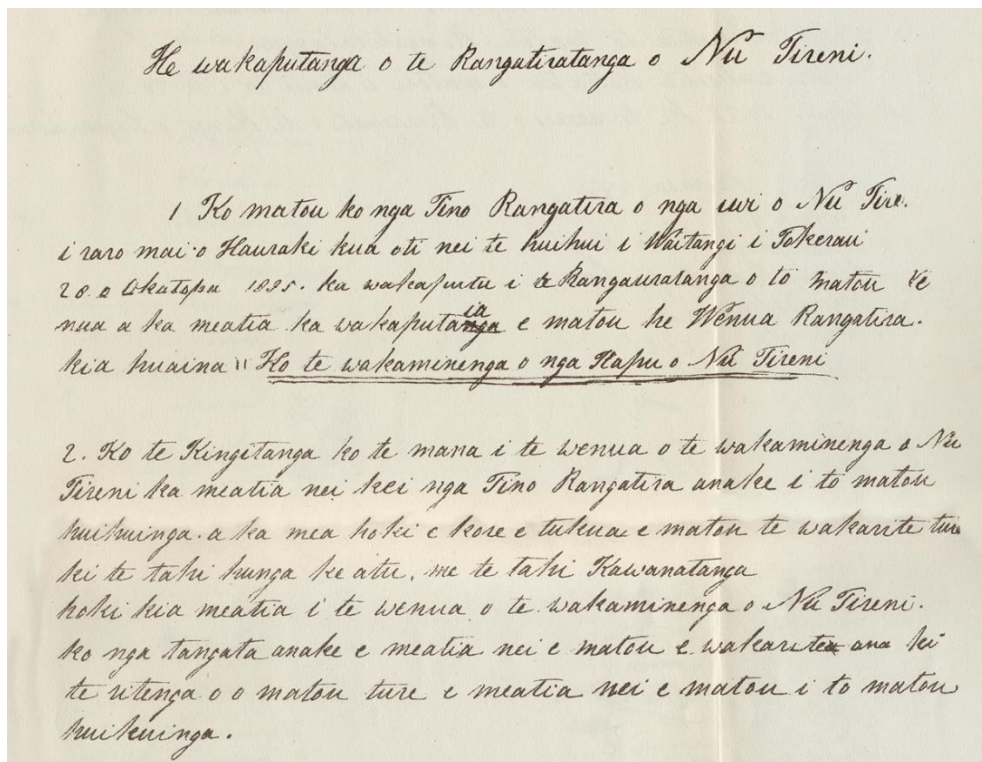


Figure 14: Article 1 and Article 2 of He waka putanga o te Rangatiratanga o Nu Tirene

Article 2 asserted 'Kingitanga' (sovereign power) and 'mana i te wenua' (authority in the land) to be held collectively by the sovereign chiefs. Additionally, Kawanatanga (governance) and ture (laws) would be performed by huihuiinga (congress). Article 2 of the original document is presented in Figure 14.

Article 3 sets a huihuiinga of the chiefs in autumn each year. This congress was to "frame laws, dispense justice, preserve peace and good order, and regulate trade" (Keane, 2012, p.3). Additionally, other tribes, outside of the land boundaries defined in Article 1, were invited to join te Wakaminenga (Figure 15).

Article 4 states that a copy of the declaration would be sent to 'te Kingi o Ingarani' (the King of England), thanked the King for acknowledging the flag (of the United Tribes) and requested that the King be a matua (parent) of their infant state. The declaration was forwarded to King William IV and recognised by Britain in 1836.

3 Ko matou ko nga tino Rangatira ka mea nei keia huihiki ke
te runanga ki Whitiangi a te Ngāhuru i teni tau i teni tau ke
te wakarite ture keia tikia ai te wakarawakanga keia mau pua
te rongu keia mutua te he keia tikia te hoko hoko. a ka mea
hoki kei nga Taniwi o unga. keia wakarua te wawai. keia
mahara ai kei te wakaranga o to ratou wenua. a keia uru
ratou kei te wakaranga o Nu Tirene.

4 Ka mea matou keia tuhituhia he puka puka kei te
witema o teni o to matou wakaranga nei kei te Kingi
o Ingarani kei keia atu i to matou ake ka nana hoki i
waka kei te Hara mo matou. a no te mea ka atawai
matou, ka tika i nga pakeha e noho nei i uta. e ere mai
ana kei te hoko hoko, keia ka mea ai matou kei te Kingi kei
waiho kei matou kei a matou i to matou Tamahitanga
kei wakaranga to matou Rangatiranga.

Kua wakarua katoa e matou i teni ra i te 28. o
Okutopa. 1835 kei te ahu o te Reireni o te Kingi o Ingarani.

Figure 15: Article 3 and Article 4 of He wakatanga o te Rangatiranga o Nu Tirene

In short, the signatories to the Declaration sought and received recognition from the British government in terms of the chiefs' sovereignty and the country's independence while securing Crown protection (Orange, 2011, p.14-15). Although Britain formally recognised the Declaration, the signing ceremony itself has been described by some as being 'contrived', citing a lack of input from Māori to the document draft, that all but two of the chiefs that signed were from the northern region of the North Island of New Zealand, and that the primary aim of the declaration was to thwart the plans of Charles de Thierry to create an independent state in those northern parts (King, 2003, p.154). France, however, acknowledged that New Zealand had formally been recognised as an independent state under its native chiefs. The US Senate Committee on Foreign Relations also acknowledged that the confederation of chieftains had, on October 28, 1835, declared their independence under the name of the United Tribes of New Zealand (Keane, 2012).

3.3.2 *The Aftermath*

Evaluations of the significance of the Declaration of Independence vary. Some have argued that Busby tried to get assistance from chiefs in maintaining law and order while at the same time attempting to forge some unity between the chiefs. Others have seen the main intent as a blocking mechanism against de Thierry's intentions in the north. There are also views that the declaration was part of a tribal strategy to gain recognition of national independence. The Declaration may have been instrumental in preventing de Thierry from acquiring the land he sought, but otherwise it appears to have had very little practical effect (Ministry for Culture and Heritage, 2013). None of the confederation of chiefs would individually subordinate their mana (*prestige, authority*) to that of the United Tribes – some of who were at war with one another within a year of signing the document (King, 2003, p. 155; Ministry for Culture and Heritage, 2013). New Zealand at the time has been described as "a fragmented, war-weary land where tiny hapu, as often as iwi, claimed most people's loyalties" (McLean, 2005, p.93). This is also the likely reason there is no record that the United Tribes ever reconvened, except during the signing of the Treaty of Waitangi in 1840 (Ministry for Culture and Heritage, 2013).

The Declaration of Independence did not result in a governing function in New Zealand. Sovereignty and governance rested with the chiefs of individual iwi and hapū rather than with the United Tribes (McLean, 2005, p.93; Ministry for Culture and Heritage, 2013, p.2). The signatories of the Declaration did not speak for all Māori since there was no national indigenous political or power structure within New Zealand upon which to base a united congress (King, 2003, p.155; Orange, 2005, p.99). In spite of these drawbacks, King (2003, p.155) notes "the Declaration became a foundation for the assertion of indigenous rights and was another step towards a formal constitutional relationship with Britain". For many, though, the Declaration was primarily a matter for the tribes of the far north – given that all but two of the signatories were from there. That coupled with the invitation extended to the more southern chiefs in the third article to lay aside their private animosities and join the Confederation would seem to support claims that the Declaration was more a 'regional goodwill agreement rather than a national document of truly constitutional significance' (McLean, 2005, p.93).

Although the significance of the Declaration of Independence has been widely debated by historians, it has been suggested that the Declaration was only taken seriously when it proved to be an impediment to the annexation of New Zealand by the British. Previous recognition of New Zealand's independence meant the Declaration had to be somehow revoked or subsumed before sovereignty could be transferred to the British crown. To that effect, the chiefs who had signed the Declaration, or their successors, were the first to be called upon to sign the Treaty of Waitangi. Article One of the Treaty included specific reference to 'the Chiefs of the Confederation of the United Tribes of New Zealand'. That reference also included 'the separate and independent Chiefs who have not become members of the Confederation' (Keane, 2012, p.3; King, 2003, p.159; Ministry for Culture and Heritage, 2013, p.2). The British were well aware that other nations had an interest in the proceedings within New Zealand and, as such, were desirous that the sovereign independence enjoyed by the rangatira of Te Wakaminenga would be formally transferred by treaty (Orange, 2005, p.99). Britain had decided to secure sovereignty over the whole country in order to formalise a governance and protection over the small numbers of settlers and over the Māori, but also in anticipation of the thousands of immigrants expected to soon land on New Zealand soil (Orange, 2005, p.100).

3.4 Te Tiriti o Waitangi: The Treaty of Waitangi

The Treaty of Waitangi is regarded as New Zealand's founding document and signalled a political compact, or covenant, between Māori and the British Crown (Henare, 2000; Ministry for Culture and Heritage, 2015; Moon & Biggs, 2004; Orange, 2005; Orange, 2011). The Treaty takes its name from Waitangi, situated in the Bay of Islands in the northern region of New Zealand (see Figure 13); the place where the first signing occurred (Ministry for Culture and Heritage, 2015). On 6 February 1840 the Treaty was signed by 43 Māori chiefs and Lieutenant Governor Hobson as the official representative of Queen Victoria, the reigning British monarch at that time (Henare, 2000, p.23; State Services Commission, 2004; Stenson, 2004; Orange, 1989). For the remainder of that year the originals and copies were taken across the country. Of the 500+ signatures found on the nine surviving copies, only 39 signatures appear on the English-language version (Stenson, 2004).

The British viewed the signed treaty as critical for a legitimate annexation since they had acknowledged Māori sovereignty in the Declaration of Independence five years earlier (McLaughlan, 2004,p. 56). According to Orange (2005):

Strong strands of idealism were embedded in the treaty-making process and events of 1840. Most of the groups involved in New Zealand's annexation and settlement had dreams the new colony would exhibit relationships of a new kind between settlers and indigenous peoples. The Treaty of Waitangi embraced this dream, but the Treaty parties had different expectations of what the partnership and sharing of power on the ground would be (p.95).

Historian Peter Adams observed that:

Underlying the humanitarian idealism and the promise of impartial and equal protection lay fundamental attitudes of cultural and racial superiority. Equal treatment would ultimately depend on the Māori becoming brown Englishmen and women, and participation would mean amalgamation and the submergence of Māori in a European world (Orange, 2005, p.100).

The British were also concerned that a private English firm, the New Zealand Company, had clear intentions of a formal colonising and mass settlement in New Zealand and a plan to fashion their own form of government (King, 2003, p.156-157). On the strength of these current concerns and on the advice of officials in the Colonial Office, the British Government deployed naval officer, William Hobson, to New Zealand. Hobson's instructions were to secure a transfer of sovereignty from Maori to the British and to establish a British colony in New Zealand. Hobson was also instructed to take whatever constitutional steps were necessary so that "there might be no doubt under international law about the validity of the annexation that would follow" (King, 2003, p.156).

The Treaty of Waitangi was drafted in English on 3 February 1840 and translated into te reo Māori, this version more commonly referred to as te Tiriti (*the Treaty*), on the evening of 4 February 1840 (Orange, 2005, p.101). Te Tiriti was signed on 6 February 1840 and then a few days later was translated into what would become the 'official English version' (State Services Commission, 2005, p.3). The very short timeframes involved may well have contributed to what are recognised as significant differences between the two versions. Additionally, whether or not the translations were purposefully inaccurate is now a matter of conjecture (Orange, 2005, p.101; State Services Commission, 2005, p.3). Both the Māori version and the English translation differed and were ambiguous on some critical points. Furthermore, it seems the particular wording of the original English draft and the translated Māori draft may have been engineered to ensure both parties were at the signing table (Orange, 2005, p.101). The English version specified a relinquishing of 'sovereignty' by Māori with an understanding that the British would control all

land transactions which included buying land from Māori and selling to settlers. It bestowed upon Māori the ‘protection’ and ‘all privileges and rights afforded British subjects’ while confirming Māori had full possession of their lands, forests, fisheries and other properties. (Orange, 2005, p.101).

According to McLaughlan (2004):

The Treaty was an original because it formally acknowledged that an indigenous people had rights. However, over the years, Pakeha, few of whom ever bothered to read it, thought it simply signalled Māori acceptance of British citizenship and sovereignty and made us ‘one people’, an absurd, surreal phrase Hobson kept mumbling in Māori as each chief signed at Waitangi (p.57).

Following the Treaty signing at Waitangi the Flag of the United Tribes of New Zealand was taken down and replaced by the Union Jack as the official flag of New Zealand. The repeated felling of the flagstaff by Ngāpuhi Chief Hone Heke during 1844 to 1846 represented a rejection of the Union Jack, a symbol of British power at that time. In recognition of the partnership Māori thought that they had entered into, Māori were of the opinion that the United Tribes flag should fly alongside the Union Jack (Ministry for Culture and Heritage, 2017). Although Māori thought they had more control over their own affairs and that the Treaty afforded them a semblance of equal footing with the British, the ensuing government and colonists were unrelenting in their imposition of British rule. They were of the mind that it was their duty to civilise the natives and other subject races – an attitude that was consistent throughout the Empire (McLaughlan, 2004, p.66).

3.4.1 *Summarised content*

The Treaty of Waitangi consists of a Preamble and four Articles. This summary and subsequent commentary are derived from the following texts:

(Henare, 2000, p.23; Ministry for Culture and Heritage, 2015; Orange, 2011; Stenson, M, 2004, p.17-18; Waitangi Tribunal, 1986, p.1)

The **Preamble** is an introduction to the Articles and outlines the intent of Queen Victoria, the reigning monarch of Great Britain and Ireland at that time, to secure a “settled form of Civil Government” in New Zealand. This need for governance was in recognition of the growing number of British and Irish immigrants and the increasing unrest between Māori and those immigrants. The Māori text of the Preamble allows the formation of a (Crown) government while Māori retained tribal rangatiratanga (*sovereignty*) and the undisturbed possession and control of their lands.

Article One contains one of the points of contention between the English and Māori versions of the Treaty. The English version would see Māori cede their sovereignty to the Queen, meaning the Crown would then have the overall power and control over everyone and everything in New Zealand. However, the Māori version grants the Queen's governor the ability to implement kāwanatanga or governorship, allowing the presence of a governor who would then exercise a governing authority over the British people and their lands.

The English text of **Article Two** confirmed and guaranteed Māori the full and undisturbed possession of their lands, estates, forests and fisheries and other properties, while agreeing to vest exclusive right of land acquisition (purchase) by the Queen and her representatives at mutually agreed prices. In the Māori text, Māori were guaranteed te tino rangatiratanga - the unqualified chieftainship over their lands, villages and all that was precious to them – “te taonga katoa” (*all properties and treasures*). Māori also yielded the exclusive right of land purchase to the Crown should they (Māori) choose to sell their land.

Article Three afforded Māori the Queen's protection and all the rights and privileges of British citizens. The third Article in both the Māori and English texts of the Treaty are considered to be accurate translations of each other.

Article Four: Immediately before the initial signing of the Treaty, Captain Hobson and the assembled rangatira agreed to the following (translated) statement which was read in te reo Māori to all those that had gathered for the signing:

“The Governor says the several faiths (beliefs) of England, of the Wesleyans, of Rome, and also Māori custom and religion shall alike be protected by him” (Network Waitangi, 2015, p.16).

Article Four essentially gives those covered by the articles of the treaty the right to embrace and pursue whichever religion or belief system they chose.

In summary, the Treaty signalled an intent to secure peaceful relationships and to provide a framework of understandings between Māori and the Crown. Those understandings also allowed for the appointment of a governor, as the Crown’s representative, to exercise jurisdiction and governorship over the Queen’s charges while protecting the religious freedoms of all who resided in New Zealand. The Crown would implement a structured civil governorship with the guarantee that Māori retained full control and authority over their lands, settlements and all that was treasured by Te Ao Māori – including belief systems, social relationships and political and economic institutions. Te Tiriti o Waitangi (the te reo Māori text) envisaged a unique relationship between Māori and the Crown which was that of an "enduring and enforceable covenant partnership" (Williams, 2005, p.366). Henare (2000, p.23) states:

The promise of the Treaty can be simply put:

- Māori cultural values are to be respected and given effect; and
- Māori are to participate in the new society and feel as much at home in New Zealand and its institutions as other New Zealanders.

Although in the 1840s the government had little or no authority in most parts of the country, their "intention to honour the treaty is shown by many of its early dealings with iwi" (Orange, 2011, p.4). At times these intentions conflicted with official practice and legal requirement resulting in increased tensions and sometimes war. During the mid to late 1800s the first colonial Parliament was developing a more

substantive power base and authority that they were reluctant to share - excluding Māori from any national political participation (Orange, 2011, p.4). According to Orange (2011, p.7):

In 1882, 1884, 1914 and 1924, deputations of Māori travelled to England to take petitions based on the treaty to the British monarch and the government. Each of these petitions asked for treaty rights to be observed. They were all referred back by the Crown to the New Zealand Parliament, which denied breaching the treaty. Parliament clearly had no intention of upholding the treaty as Māori understood it.

3.4.2 *Issues with the Treaty of Waitangi*

The Crown intended the Treaty of Waitangi to subsume the Declaration of Independence. To expedite this intention the rangatira of Te Wakaminenga, The Confederation of Chiefs, were all invited to be party to the initial signing in Waitangi. However, within the Declaration, the Confederation of the United Tribes had 'independence' using the term 'rangatiratanga'. Māori were guaranteed 'rangatiratanga' under Article Two of te Tiriti, and 'kāwanatanga' (*governorship*) was ceded to the Crown. As discussed earlier, this allowed the Crown to implement a civil governorship while Māori retained full control and authority over their lands, settlements and all that was treasured by Te Ao Māori. Neither of the words 'kīngitanga' or 'mana', which had been used in the declaration to refer to sovereignty, were used in the Treaty (Orange, 2011, p.3).

It seems from the outset that the two parties to the Treaty of Waitangi had differing views about what the Treaty was securing for each of them. Māori leaders made their decision to become a party to the Treaty based on what was written in the Māori text and also what they anticipated the new relationship with the British would realise. The relationship would enable an end to intertribal warfare and the implementation of a colonial administration that would provide regulation over settlers, settlements and land sales. Māori would also be able to freely engage in trade while retaining the ability to exercise control over their own affairs as guaranteed by Article Two of the Treaty. In essence the expectation by the Māori at the time of signing would have been that of a shared authority (McLaughlan,

2004, p.76; Orange, 2011, p.3). The interpretation of the Treaty of Waitangi by colonial officials, based on the English text, placed less emphasis on the authority of the chiefs and disregarded any sort of partnership – eventually, actively limiting the traditional rights of the chiefs since they were in conflict with Crown authority (Christy, 1997, p.14; Orange, 2011, p.4). Following the instructions issued from London, Hobson demonstrated this point clearly by proclaiming British sovereignty over the entirety of New Zealand on 21 May 1840 (Christy, 1997, p.14, p.25).

A wide range of views have been offered regarding the actual intent of the Treaty of Waitangi and the different understandings of what the Treaty represents have long been the subject of debate. In the last fifty years especially, Māori calls for the terms of the Treaty to be honoured have also been emphasised by protest, by marching on Parliament and by land occupation. (Ministry for Culture and Heritage, 2017a). Studies of the Treaty have driven an increasing awareness of what it means and how the Treaty might affect New Zealand in these current times. Increasingly pundits refer to the *spirit* or the over-riding intent of the Treaty as expressed by its principles (Stenson, 2004, p.20). The Treaty Principles infer a binding partnership with mutual benefits and a mutual obligation for all parties to act reasonably and in good faith (Hayward, 2012, p.5; Stenson, 2004, p.20-21, p.24). The principles are an attempt to bring relevant meaning of the Treaty of Waitangi to contemporary New Zealand. There is no definitive list of the principles, they are considered to be 'organic' and in development, but examples include:

- the government has the right to govern and make laws
- iwi have the right to organise as iwi, and, under the law, to control their resources as their own
- all New Zealanders are equal before the law
- both the government and iwi are obliged to accord each other reasonable cooperation on major issues of common concern
- the government is responsible for providing effective processes for the resolution of grievances in the expectation that reconciliation can occur.

(Hayward, 2012, p.6)

According to Williams (2005, p.366), "... the Principles of the Treaty developed by the courts and the Waitangi Tribunal are very much to the fore in legal and political discourse, but unique relationships based on the Treaty remain elusive". That

unique Treaty-based relationship might infer a New Zealand where two peoples operate with their own laws and customs, and the interface is governed by partnership and mutual respect (Ministry of Culture and Heritage, 2017a).

3.5 The Waitangi Tribunal

The Waitangi Tribunal was established 10 October 1975, by the Treaty of Waitangi Act 1975, to investigate claims of breaches of the Treaty of Waitangi and to evaluate grievances lodged by Māori against the New Zealand Government in terms of those breaches (Ministry for Culture and Heritage, 2014; 2015b; Waitangi Tribunal, 2017). The Tribunal was formed as a commission of inquiry to consider the evidence and arguments presented by claimants and the Crown and to determine whether Crown actions and omissions violated the terms of the Treaty (Waitangi Tribunal, 2017). The establishment of the Waitangi Tribunal provided a legal process by which Treaty claims could be investigated and resolved although, for the first ten years, only claims that were current at that time could be considered. The role of the Waitangi Tribunal has evolved to meet the demands of claimants, the government and the public and, in 1985, the jurisdiction of the Tribunal was extended to include claims of alleged breaches since the Treaty signings in 1840 (Ministry for Culture and Heritage, 2014; 2015b; Waitangi Tribunal, 2017).

Each claim is analysed on a case-by-case basis and, following this deliberation, the Tribunal is able to issue statement of fact and provide recommendations that are based only on the Treaty Principles that are relevant to each particular claim (Ministry for Culture and Heritage, 2014; Stenson, 2004). The extension of jurisdiction, where the Tribunal were able to consider claims for breaches prior to 1975, resulted in a huge upsurge of claims, an expansion of the Tribunal's activities and an increase in subsequent conclusions "that governments had breached the treaty on countless occasions since 1840" with an array of "many broken promises and bad deals" (Ministry for Culture and Heritage, 2017c, p.1). Some of the Tribunal's conclusions have been deemed highly controversial and incited public backlash. However, several major grievances have been addressed, a salve for some of the more disquieting aspects of New Zealand's colonial legacy.

The Treaty of Waitangi is central to everything that the Waitangi Tribunal does and, since its inception, the Tribunal has been the cornerstone of the Treaty of Waitangi settlement process. Although the Tribunal is unable to make binding decisions, the authority of its recommendations sits firmly on the transparency of Tribunal

processes and the independence of its membership (Ministry for Culture and Heritage, 2014; Williams, 2000, p.9). During the late 1900s, the hearing and settlement of historical claims would become a major focus of Māori energies. Since this period New Zealand governments have recognised the importance of acknowledging and resolving historical Māori grievances in accordance with the terms of the Treaty. The Treaty of Waitangi Policy Unit was formed in 1988 within the Department of Justice and would later become the Office of Treaty Settlements. The purpose of this unit was to advise on policy and assist in negotiations and litigation of Māori claims (Ministry for Culture and Heritage, 2014). Successful claims brought before the Tribunal have shown that Crown actions following the signing of the Treaty of Waitangi deviated sufficiently so as to be in violation of the terms of the Treaty (Ministry for Culture and Heritage, 2014). Two landmark claims regarding te reo Māori, are discussed in Section 3.6.2 and in Section 3.6.3.

The outcomes delivered by the Waitangi Tribunal and the Office of Treaty Settlements have elevated the profile of the Treaty of Waitangi - in New Zealand at least. The meaning, intent and relevance of the Treaty have been reflected upon, discussed and debated the length and breadth of New Zealand – and further. The relations and understandings between Māori and Pākehā have been scrutinised far more critically and much more publicly during the last fifty or sixty years. Biculturalism in contemporary New Zealand is a current talking point. Although, the research undertaken while addressing the claims has produced a rich record of history and assorted reparations for claimants (Derby, 2012), there are points of view that the recent emphasis on the Treaty is divisive. Others argue that, in a nation once renowned for its positive race relations, “it is precisely because the Treaty was ignored that divisions occurred” (Ministry for Culture and Heritage, 2014, p.2). Perhaps of more importance has been the dialogue around these issues – and not just in New Zealand. McLaughlan (2005) considers the reparation and reconciliation process for Māori as a significant necessity for the healing and for the future of New Zealand as a whole (p. 79). The Waitangi Tribunal, despite its decriers and detractors, remains a unique endeavour to recognise and redress colonial injustices on behalf of Māori (Derby, 2012; Ministry for Culture and Heritage, 2014). The Tribunal advocates a philosophy of redress such that where the Crown is deemed to have acted in breach of Treaty principles, the Crown has a

clear duty to ‘restore the honour and integrity of the Crown and the mana and status of Māori’ (Ministry for Culture and Heritage, 2017a).

3.6 Te Reo Māori: community-driven language initiatives

Whakatauākī

Me pioke he awheo mo Te Kohanga Reo
te taonga tuku iho na te Atua
te taonga e kore e ngaro
i nga tau whakahuihui
i nga tau takaoriori⁵⁵

nā Tā Hēmi Hēnare

Let us place a halo
around our Maori language
the God given heritage of our people
not even the rolling years
can dissipate

Sir James Hēnare

This whakatauākī from Sir James Hēnare, one of the leaders responsible for the establishment of Te Kōhanga Reo (see Section 3.6.1) encapsulates his vision for te reo Māori in contemporary New Zealand. Up until 1840 te reo Māori was the dominant language in New Zealand. Within ten years of the signing of the Treaty of Waitangi Māori would become a minority ethnicity and a minority language as the Pākehā population surpasses the number of Māori. The Māori population reached its lowest level of 42,113 according to the 1896 Census of Populations and Dwellings - down from 56,049 in 1858 (see Figure 16). The 2013 census records the Māori population at 599,865. As the population of those who identified themselves as Māori increased, the proportion of fluent speakers of te reo decreased.

⁵⁵ From Te Poari Matua o Te Kōhanga Reo (n.d.)

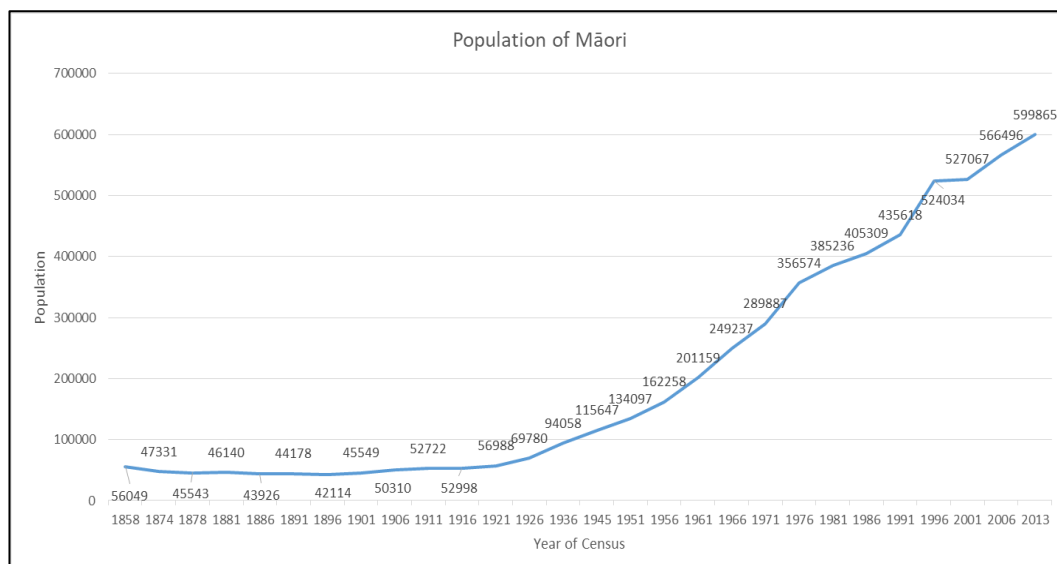


Figure 16: Māori Population⁵⁶

Until the 1930s te reo remained the dominant language spoken in Māori homes and Māori communities. At this time approximately ninety percent of Māori school children are fluent in their language - but the use of English began to increase. Additionally, English-only education was supported by some Māori leaders. In the 1940s and 1950s Māori urban migration began to affect fluency levels and the arenas where te reo was used. "Pepper-potting" became prevalent in high density urban areas, where the homesteads of Māori families were interspersed amongst those of predominantly non-Māori families. This hindered the development of Māori communities and English became the choice of language – Māori children were raised as English speakers. In his renowned message for young Māori, Sir Apirana Ngata in 1949 delivered what might be considered to be an encouragement for biculturalism and bilingualism:

“ko to ringa ki nga rakau a te Pakeha hei oranga mo to tinana”

Seek the skills of the Pakeha for your physical well-being

“ko to ngakau ki nga taonga a o tipuna Maori hei tikitiki mo to mahuna”

Cherish the treasures of your ancestors as a plume for your brow

(Te Poari Matua o Te Kōhanga Reo, n.d., p.6).

⁵⁶ (according to New Zealand Census of Population and Dwelling)

During this time the proportion of Māori school children who can speak te reo drops to twenty six percent. It appears that the impacts of the Native Schools Act 1867, which decreed that English should be the only language used in the education of Māori children, and the compulsory requirement in 1894 for all Māori children to attend formal schooling, were becoming evident in the fluency levels of children. The Hunn Report⁵⁷ of 1961 describes the Māori language as a relic of ancient life.

Urban Māori in the 1970s began to express their concerns about the failing health of te reo Māori. During this decade a petition calling for the teaching of Māori language and culture in schools collects 30,000 signatures and is presented to parliament in 1972, the first Māori Language Week is held in 1975, the proportion of Māori school children who can speak Māori has fallen to less than five percent, Ruātoki School, in the central north island, becomes the first officially bilingual school in 1978, the New Zealand Council for Education and Research (NZCER) survey shows that most of the roughly nineteen percent of Māori who can speak te reo are elderly, and the movement, Te Ātaarangi, is established in 1979 to teach te reo Māori to adults.

A protest march is staged during Māori Language Week in 1980 demanding a status of equality for te reo Māori with English. The following year a petition is raised calling for the official recognition of te reo Māori – the estimated number of Māori-language speakers has fallen to twelve percent of the Māori population. The Te Reo Māori Claim is lodged with the Treaty of Waitangi in 1985 (see Section 3.6.2).

Amidst mounting concern amongst Māori about the endangered state of their language, major initiatives were established aimed at halting the decline of te reo Māori and increasing the numbers of fluent speakers. Te reo Māori is an oratory language and, for Māori, carries much of the culture, history, beliefs and protocols. The significance of the language goes far beyond the spoken word. For instance, without te reo it becomes difficult for Māori to appropriately farewell lost ones at tangihanga (*funerals*) and poroporoāki (*a farewell*)⁵⁸ which may tend to compound

⁵⁷ A report written by J.K Hunn on the Department of Māori Affairs, see:
<http://nzetc.victoria.ac.nz/tm/scholarly/tei-HilMaor-t1-body-d5-d2.html>

⁵⁸ A farewell to the deceased – normally conducted as part of the tangihanga

the loss (Lewis, 2007). In a response to the poor health of the language initiatives were created that focused initially on education and community language development (Chrisp, 2005, p.153).

Early initiatives were aimed at younger generations. One such notable initiative was the creation of Te Kōhanga Reo⁵⁹ (*Māori-language immersion pre-schools*) in 1982 in an effort to increment the 50,000, mainly elderly, fluent Māori speakers. The first Kura Kaupapa, Māori immersion Primary School, was opened in 1985 to cater for the language needs of the children emerging from the Te Kōhanga Reo program (discussed in Section 3.6.1). Other educational initiatives included the creation of *whare kura* (*immersion secondary schools*) and *whare wānanga* (*Māori-aligned tertiary institutions*) to complete Māori-centric learning opportunities in the primary, secondary and tertiary sectors. These initiatives were primarily community driven with government support that included funding and, eventually, legislation.

3.6.1 *Te Kōhanga Reo (Māori Language Nests)*

Te Kōhanga Reo is a community-driven movement that was founded as a response to the declining use and the declining health of te reo Māori. The early pioneers of this movement were determined that te reo Māori should regain its position in New Zealand as a language of everyday communication. The establishment of Te Kōhanga Reo, early childhood education centres, was based upon the Māori principles of *whanaungatanga* (*kinship, family connections*) and *manaakitanga* (*hospitality, respect, generosity, support*) and immerses children, some from birth, in a learning environment based on Māori language and Māori values. The model was developed by Māori for Māori in conjunction with the Department of Māori Affairs. Although the main facilitators of the learning process are the *kaiako* (*teachers*), Kōhanga are family-centred programs where children, aged from newborn to six years, are supported by a network of *whānau*, *hapū* and *iwi*. The *whānau* group would generally include *kaumātua* (*grandparents*), parents, siblings, uncles and aunts. The learning and support processes enjoyed by the students

⁵⁹ Te Kōhanga Reo translates as 'language nests'

within the kōhanga tended to be continued or replicated, at least in part, outside of the kōhanga.

The first Kōhanga Reo was opened in April 1982 in Pukeatua at the southern end of the North Island. There were one hundred kōhanga operating by the end of 1982 and by March 1988 there were more than 500 kōhanga providing for about 8,000 children under five years of age (Te Kōhanga Reo National Trust, 2017; Te Poari Matua o Te Kōhanga Reo, n.d.). A government review in 1988 described Te Kōhanga Reo as a vigorous and lively movement that has "...arrested the fragmentation of the tradition cultural base" (Renwick, Sutton, Tawhiwhirangi, & Irwin, 1988, p.7). The movement is also attributed with helping to revitalise the use of marae, because a large number of kōhanga reo are based on marae grounds, while preserving te reo Māori and growing new waves of fluent speakers (Renwick et al, 1988). Even with very little financial support from the Government, kōhanga reo were opening all over the country. Toward the end of 1994 there were almost 800 kōhanga reo catering for nearly 14,000 children. With the devolvement of the Department of Māori Affairs, the Kōhanga Reo movement came under the auspices of the Ministry of Education. The system of measurements required under the new regulatory environment, and the compliances of the 'early childhood sector', came at a heavy cost to Te Kōhanga Reo. In spite of this there are more than 460 self-managed kōhanga reo operating in New Zealand who provide early childhood education to over 9000 children. Te Kōhanga Reo is regarded as one of the most significant and effective initiatives undertaken by Māori to secure their language and culture (Te Kōhanga Reo National Trust, 2017). The Te Kōhanga Reo initiative prepares children for Kura Kaupapa (Primary and Post-primary schooling) before those children progress to Whare Kura (Secondary schooling). According to Paul Reeve⁶⁰:

The best way to learn a language is to be immersed in a community which is speaking it. After all, that is how we learn English. The Kohanga Reo tries to re-establish a learning community. You will see the generations of the grandparents, the mothers and the children. More often than not the mother is trying to learn along with her children. (Simon, 1990, p.4)

⁶⁰ NZ's Governor General (1985-1990)

Te Kōhanga Reo National Trust would eventually lodge the Kōhanga Reo claim (WAI 2336) with the Waitangi Tribunal in 2012 alleging significant operational prejudice by the Ministry of Education that assimilated the kōhanga reo movement into the Crown's early childhood education regime. The assimilation led to a rapid and extended decline in the number of tamariki (*children*) participating in early childhood education in a te reo and tikanga Māori immersion environment (Waitangi Tribunal, 2012). In 2012 the Tribunal adjudged the claim to be well founded reasoning that the Crown had failed to fulfil the partnership agreement it entered into with the Te Kōhanga Reo Trust in 2003.

3.6.2 *Te Reo Māori Claim (WAI 11)*

The Te Reo Māori Claim, also referred to as WAI 11 (the eleventh claim to be considered by the Waitangi Tribunal) was lodged in 1985 by Huirangi Waikerepuru and Ngā Kaiwhakapumau i te Reo (Inc) (*The Māori Language Board of Wellington*) as the claimants. WAI 11 was one response to the failing health of te reo Māori and the failure by the Crown to recognise and protect the language as a taonga pursuant to the terms of the Treaty of Waitangi. During the investigations Professor Bruce Biggs⁶¹ supplied information showing that in 1913 90% of Māori schoolchildren could speak Māori. Forty years later, in 1953, this percentage had dropped to 26%. In 1975 the figure had dropped to less than 5%. The Waitangi Tribunal (1986, p.15) observed in its findings that:

It is clear that the Māori language in New Zealand is not in a healthy state at the present time and that urgent action must be taken if it is to survive. As we shall explain the Māori people themselves have begun the task of revival but they are working under severe disadvantages, financial and otherwise.

The WAI 11 claim proposed that te reo Māori should be able to be used, as of right, in Parliament, the Courts, Government Departments, local authorities and public bodies (Waitangi Tribunal, 1986, p.7). More than seventy recommendations were presented that sought an official positioning and recognition of te reo Māori,

⁶¹ Formerly a lecturer in Māori and Anthropology at the University of Auckland

concentrating in particular on broadcasting, education, health and the Public Service. Basically, the WAI 11 claim aimed to secure the ongoing health of te reo Māori through a recommendation from the Waitangi Tribunal that te reo Māori be recognised as an official language throughout New Zealand and used as of right in those established ‘official spaces’.

As discussed in Chapter 2 there are many reasons why people decide to abandon the use of their own language for another. Often language switching occurs as a result of external influences that compel people, against their will and despite their deepest feelings, to use a tongue that is different to their own. In terms of te reo Māori, the pervasion of the English language and the historic lack of support for Māori-language speakers, especially in the latter part of the last century, meant that Māori-speaking children were unable to study their language and, like their parents before them, ran the risk of punishment for speaking te reo Māori at school. The longer-term effect would be a drastic decline in the use of Māori in the home environments and therefore the loss of a significant space where, as discussed in Chapter 2, intergenerational transmission most naturally occurs. The overwhelming predominance of English – especially in the media, would underpin a push for an English-speaking New Zealand that was patently obvious during the mid-1900s.

3.6.2.1 Summary of Findings (WAI 11)

The following is a summary of some of the findings from the 1986 report of the Waitangi Tribunal on the Te Reo Māori claim (Waitangi Tribunal, 1986).

According to the Waitangi Tribunal, the political, social, and financial ramifications of the WAI 11 claim belied its stated simplicity (p.11). The claim was strongly supported by Māori representing every major tribe and district in New Zealand. The wide range of presenters from ‘ngā hau e whā’ (*the four winds*) spoke with one voice and were united regarding the importance of the Māori language to te Ao Māori. Their unified demand for official recognition was described as “strident and determined” (p.11). The significance of the language and its preservation became quite obvious to the Tribunal during this process. Te reo Māori is not spoken anywhere else in the world and gives body to hundreds of years of heritage and

culture that is quite unique to New Zealand. The language underpins a rich tapestry of Māori history, poetry and song that would be lost and, ultimately, fade into oblivion if the language were lost (p.11).

By 1896 the number of Māori in New Zealand had declined from well over a hundred thousand people to 42,100 (p.12). At the turn of the century many Māori were bilingual in both English and Māori but most spoke Māori as their first language and used Māori for their general day-to-day communications. During the 1970s and 1980s the Māori Unit of the New Zealand Council for Educational Research studied the state of te reo Māori in New Zealand. The information provided by the Council's Acting Director, Dr Richard Benton, would show that te reo Māori had ceased to be the main language for the community as a whole. The pervasion of English in everyday life, from radio and television, to the cinema, schools and general social settings, meant there were very few instances where Māori was still spoken by nearly everyone in the community, from pre-schoolers to the aged (p.15). In most situations children were more comfortable conversing in English than they were in Māori. Benton observed that languages are a social phenomenon and do not flourish in a social vacuum. According to Benton, the social changes in New Zealand greatly reduced the contexts in which Māori can use their own language; "urbanisation, improved communications, industrialisation, consolidation of rural schools and internal migration have all taken their toll" (p.15). For younger generations, persistent exposure to the English language at school, and in general settings due to media such as radio, television and the movies had passed a critical point whereby the Māori language was struggling to survive.

The Waitangi Tribunal adds that as a nation New Zealanders have always acknowledged Māori culture and recognised Māoritanga as part of New Zealand's heritage (p.21). The Māori culture is unique in the world with a rich oral history. Te Reo Māori gives voice to that history, to the expression of Māori and their particular spiritual and mental concepts. It is also the means by which Māori explain themselves and their ways to the rest of New Zealand. The language is the embodiment of the particular spiritual and mental concepts of the Māori; offering a particular world view with an emphasis on holistic thinking, group development, family relationships and the spiritual dimension of life. Such was the burden of the

WAI 11 claim, for without te reo Māori the richness and diversity of te Ao Māori, from which New Zealand as a whole might benefit, would be lost.

As part of the investigations for this claim the Waitangi Tribunal considered various objections to the recognition of te reo Māori as an Official Language of New Zealand. A few of those objections were:

1. There is no need for recognition because Māori people can speak English anyway.
2. The Māori language cannot meet the needs of modern society.
3. English is an international language and therefore much more useful than Māori.
4. Most New Zealanders cannot speak or understand Māori.
5. Official recognition is an empty gesture of no benefit to anyone.
6. If Māori is given official recognition it will cause divisions in the community (Waitangi Tribunal, 1986, p.29).

In considering these objections the Tribunal were adamant that te reo Māori is a language worth preserving and deserving of protection – quite aside from the Crown's obligations under the Treaty. While there was no question that English has become a major international language, the issue was not whether Māori is more useful or less useful than English. The major issue, apart from preservation and protection, was one of recognition – where, officially, Māori-speaking New Zealanders will be able to use te reo on occasions and in arenas where they cannot do so now. Official recognition does not force Māori standards and values on to anyone, or require English speaking New Zealanders to learn the language. But, perhaps that official recognition will go some distance towards eliminating the attitude that te reo Māori has no real value or worth.

To retain life a language must be used. Whether or not a speaker understands English well is a separate issue. To protect te reo Māori opportunities must be provided for its use and official recognition gives public acknowledgment of that requirement and provision. Such recognition may also encourage people to obtain a knowledge of Māori and increase the learning opportunities for New Zealanders looking to acquire the language or gain an insight into te Ao Māori. In considering

the viewpoint that assumes divisiveness is caused by differences, the Tribunal suggested that the true cause of divisiveness in any community normally arises from a lack of respect and/or a lack of understanding for the other groups within that community. The Tribunal added:

We are indebted to Mr Downey, Counsel for the Broadcasting Corporation, for drawing to our attention an article written by the late Professor R Q Quentin-Baxter in which he said: “. . . If New Zealand has a destiny as a separate nation, rather than as a detached part of Australia, it will be principally because these islands were a meeting-place of two great races, and because—even in the worst times—their dealings with each other never lacked a certain grandeur. It is of course a flawed record; but the world has no better record and can ill afford to lose this one.” (p.53)

3.6.2.2 Outcomes

The Te Reo Māori (WAI 11) Claim Report 1986 includes an acknowledgement from The Waitangi Tribunal that te reo Māori is a 'taonga' and that, pursuant to Article Two of the Treaty of Waitangi, the Crown has a responsibility to ensure the preservation of the language. The Tribunal noted that "The 'guarantee' in the Treaty requires affirmative action to protect and sustain the language, not a passive obligation to tolerate its existence and certainly not a right to deny its use in any place" (Waitangi Tribunal, 1986, p.1). The recommendations were also grounded on other more practical reasons that were quite apart from the provisions of the Treaty. The Tribunal explained how the face of New Zealand society is changing and how, predictions indicate a much larger proportion of New Zealanders who are of Māori descent. The expectation that Māori New Zealanders will represent a significant percentage of the New Zealand community requires "that their aspirations and their desires, quite apart from their rights under the Treaty of Waitangi, must be recognised and fulfilled by all New Zealanders who have at heart the welfare and the best interests of our country" (Waitangi Tribunal, 1986, p.53).

This report resulted in recognising te reo Māori as an official language of Aotearoa/New Zealand with the passing in Parliament of the Māori Language Act 1987. The Māori Language Act 1987 also established Te Taura Whiri i te Reo

Māori – The Māori Language Commission (Bellamy, 2010; Henare, 2000, p.25; Orange, 2004, p.347; Te Taura Whiri i te reo Māori, 2015). Another outcome was a general recommendation to the Minister in Charge of State Services that conditions for some appointments to the Public Service require a fluency in te reo Māori and an acquisition of fluency to be a qualification to be encouraged in others.

The Government also reserved radio and television broadcasting frequencies for use by Māori. Te Upoko o te Ika, established on a trial basis in 1983 as the birth of iwi radio, were granted broadcasting licenses in 1987 by the Ministry of Commerce. This was followed by the establishment in 1993 of Te Māngai Pāho (*The Māori Broadcasting Agency*) after which more than twenty iwi radio stations began to broadcast throughout New Zealand.

3.6.3 *Flora and Fauna Claim (WAI 262)*

The Flora and Fauna Claim was filed in 1991 on behalf of six claimant iwi. The claim was filed following concerns over the apparent loss of native flora and fauna to overseas interests and the lack of Māori involvement and participation regarding decision-making concerning the granting of intellectual property rights over this flora and fauna (Solomon, 2005, p.213). The basis of the claim is formed by the holistic relationship that Māori have with “the cosmos of the universe, the Gods, plants and animals” (Te Rarawa WAI 262 Taumata, 2014, p.1). These relationships describe the connection that Māori have to their taonga and the rights, responsibilities and obligations - dimensions of tino rangatiratanga - that Māori have in terms of their particular affinity with their world, both natural and supernatural. The relationships are integral to customary practices and norms. They are encompassed in a world view, a way of existing and are essential to Māori culture and identity. The flora and fauna claim sought the authority and recognition for Māori to be able to live according to that world view. The premise for the claim was founded on tino rangatiratanga - guaranteed under Article Two of Te Tiriti o Waitangi 1840. Te Tiriti guaranteed that tangata whenua (*the people of this land*) would be able to live in accordance with their world view of whanaungatanga (*kinship, family connections*), tikanga (*custom, lore, protocol*), kaitiakitanga (*guardianship, trusteeship*) and manaakitanga (*hospitality, respect, generosity*,

support) with their natural (and spiritual) environments for as long as they wished to do so, and that the Crown would actively protect those rights and responsibilities (Te Rarawa WAI 262 Taumata, 2014, p.1).

The guarantee by Article Two of te Tiriti o Waitangi of tino rangatiratanga is pivotal to the mauri (*life essence, survival, growth and well-being*) of the culture, reo, mātauranga (*knowledge*) and identity of whānau, hapū and iwi. The Flora and Fauna claim sought to restore and enhance the mauri of tangata whenua with the assertion that this has significant consequences for the well-being of all people in New Zealand and significant consequences for the mauri of all species of indigenous flora and fauna (Te Rarawa WAI 262 Taumata, 2014, p.1). Indeed, although the claim seeks to restore tino rangatiratanga the basic aspiration of the claim can be encapsulated by the phrase “Māori control over things Māori” (Te Rarawa WAI 262 Taumata, (n.d.) p.1). This includes influence over how Ministers and Government Agencies make decisions, policy and law that involve taonga. In this case taonga is not limited to property and possessions, as stated in the Crown’s English-language version of the Treaty. Within the context of te Ao Māori, taonga as part of the natural world are recognised as having a life force and inherent value. This includes all things held precious: for example, language, culture, knowledge and health.

Although the Tribunal findings were appreciative of historical grievances and the shortcomings of governments pursuant to Article Two of the Treaty, an overarching sentiment of the final report was that the Crown and Māori need to work together and need to develop future partnership models. In considering the issues of this claim the WAI 262 inquiry focused mainly on contemporary relationships between the Crown and Māori and, therefore, " ... in general the focus of the Tribunal's findings and recommendations is on the contemporary relationships between the Crown and Māori, not on past grievances" (Ministry of Justice, 2011).

3.6.3.1 Ko Aotearoa Tēnei: Report on the Wai 262 Claim

Ko Aotearoa Tēnei (*This is New Zealand*) – the Report on the Flora and Fauna WAI 262 Claim – was released by The Waitangi Tribunal 2 July 2011 twenty years after

the claim was lodged. At the time of release only one of the original six claimants remained living. Ko Aotearoa Tēnei is the Tribunal's first 'whole-of-government' report - a culmination of input from more than twenty government departments and agencies. The report recommended wide-ranging reforms to laws and policies affecting Māori culture and identity and was also the Tribunal's first report to address Treaty-based relationships beyond the grievance-based processes (Ministry of Justice, 2011). The report also considers how those relationships might be shaped by changes in New Zealand's demographic makeup over the next few decades.

The WAI 262 report alludes to a justified sense of grievance experienced by Māori who are, in many respects, marginalised by government policies and statutes – especially where non-Māori are able to control key aspects of Māori culture. This has a limiting effect on how well Māori are able to contribute to a singular national New Zealand identity, but the Tribunal notes that "New Zealand sits poised at a crossroads both in race relations and on our long quest for a mature sense of national identity" (Ministry of Justice, 2011). For Māori and non-Māori, the encumbrances of mutually carrying the burdens of our colonial past needs to shift from the belief that the perpetrator's successor must pay the victim's successor for the original colonial sin and from the fear that Māori will acquire undeserved privileges at the expense of non-Māori - familiar notions arising from the Treaty settlement processes (Ministry of Justice, 2011). The underlying good will and mutual respect between New Zealand's founding cultures has already enabled the challenge of addressing historical grievances and is reflected in the acknowledgement that te Ao Māori is a fundamental quality of the identity and culture of New Zealand.

The future Crown-Māori relationship is envisaged as a genuine partnership, "in which the Crown is entitled to govern but Māori retain tino rangatiratanga over their taonga" (Ministry of Justice, 2011). This partnership will cement a mutual advantage where the interests of New Zealanders, both Māori and non-Māori, are fairly and transparently balanced, and the partners end up better off than they were before they started. It is time now to look post-grievance and shift the view of the Treaty from 'breach and repair' to a relationship that is forged on the original intent.

According to the Waitangi Tribunal, the transition to a new and unique national identity is the Treaty of Waitangi beyond grievance.

3.7 Māori Language: Government-driven strategies

Te reo Māori became an official language of New Zealand with the ratification of the Māori Language Act 1987 which also set up Te Taura Whiri i te reo Māori (*the Māori Language Commission*) to promote the Māori language. A few years later the Education Amendment Act 1989 recognised and promoted kura kaupapa and whare wānanga. Even so, nearly a decade later, only about half of the 400,000 – 500,000 Māori still spoke te reo Māori at some level. The government moved to implement strategies aimed at developing and promoting Māori-language fluency. Members of Te Taura Whiri i te reo Māori participated with other government departments in the formulation of the Māori Language Strategy 1997.

3.7.1 *Te Taura Whiri i te Reo Māori: The Māori Language Commission*

Te Taura Whiri i te Reo Māori was established in 1987 with the passing through Parliament of the Māori Language Act 1987. The Commission was charged with giving effect to the status of Māori as an official language of New Zealand. Effectively, their role is to promote and expand te reo Māori as a living language and as an ordinary means of communication (Te Taura Whiri i te Reo Māori, 2015). According to their website, Te Taura Whiri i te reo Māori provides independent advice for the Minister of Māori Development and performs a central role and point of reference for Māori-language revitalisation efforts. The Commission also promotes standards of written and spoken reo and manages the formal certifications, including examinations, of Māori-language translators and interpreters.

The interactive ‘Kōrero Māori’ (*speak Māori*) website⁶² was launched by the Commission in 2005. The website can be used in either te reo Māori or in English and provides tools and information to assist those wishing to learn te reo Māori. The site provides basic pronunciation sound bites, standard greetings and responses,

⁶² Kōrero Māori website can be accessed at <http://www.korero.maori.nz/>

and general material covering tikanga (*customary practices and protocols*). The website also includes videos covering significant events and press releases pertinent to te reo Māori.

3.7.2 Māori Language Strategy 1997

The Māori Language Strategy 1997 was released in December 1997. The objectives of the strategy were to:

1. increase the number of people who know Māori language by increasing their opportunities to learn Māori;
2. improve proficiency levels of people speaking Māori, listening to Māori, increase the opportunities to use Māori by increasing the number of situations where Māori can be used;
3. increase the rate the Māori language develops so that it can be used for the full range of modern activities; and,
4. foster amongst Māori and non-Māori positive attitudes towards and accurate beliefs and positive values about, the Māori language so that Māori-English bilingualism becomes a valid part of New Zealand society (Parliamentary Library, 2000, p.4).

The implementation of this strategy involves a Crown/ Māori partnership aiming to give reality to the declaration of te reo as an official language and to effect the range of tasks outlined in the Māori Language Act (1987) (Hohepa, 2000, p.13; Parliament Library, 2000, p.4). One of the government objectives is to promote positive aspects of bilingualism measuring the attitudes and perceptions about te reo Māori as indicators of success.

Chrisp (1997, p.41) also suggests some key factors necessary to ensure the increased use of te reo Māori:

1. motivation - the desire of Māori to learn and use their language;
2. knowledge – of the Māori language;
3. the situations in which Māori live and interact; and,
4. a critical awareness of the issues surrounding Māori language use.

In other words, there must be a desire and choice to learn to speak te reo. Then there needs to be an expectation or commitment regarding the situations and contexts where speakers will choose to use their language. Furthermore, and perhaps more importantly, speakers of te reo Māori should be aware of their ability to use the language and the consequences of doing so (and not doing so) in broader language revival contexts. The choice is clear – use it or lose it - Māori must prevent their language from becoming a dormant, non-operating language, joining the many that are no longer actively spoken. In terms of fostering attitudes and perceptions amongst Māori and non-Māori regarding the positioning of te reo Māori in New Zealand, a calculated campaign, in a variety of media, will be one requisite strategy for fostering and promoting bilingualism in this mono-linguistic nation (Hohepa, 2000, p.14). Hohepa (2000) suggests it is common knowledge that a large proportion of Pākehā New Zealanders either oppose the use and learning of te reo Māori or are just not interested. Nevertheless, he observes that a bilingual New Zealand is key to the regeneration of te reo Māori, the use of te reo Māori among Māori, and the learning of te reo Māori among non-Māori (p.15).

3.7.3 Māori Language Strategy 2003

The Māori Language Strategy 2003 was developed as a twenty-five year strategy by Te Puni Kōkiri and Te Taura Whiri i te reo Māori. The strategy is the result of a review of the Māori Language Strategy 1997 and consultation with stakeholders that included other government agencies and various Māori groups. The Māori Language Strategy 2003 has five goals to be achieved by 2028. They are:

1. The majority of Māori will be able to speak Māori to some extent and proficiency levels in speaking, listening to, reading and writing Māori will increase.
2. Māori language use will be increased at marae, within Māori households, and other targeted domains.
3. All Māori and other New Zealanders will have enhanced access to high-quality Māori language education.
4. Iwi, hapū and local communities will be the leading parties in ensuring local-level language revitalisation. Iwi dialects of the Māori language will be supported.

5. The Māori language will be valued by all New Zealanders, and there will be a common awareness of the need to protect the language.

(Bellamy, 2010; Office of the Auditor General, 2011, p.33)

The Strategy was designed to provide planning and co-ordination to ensure that the Government can do “the right activities in the right ways at the right times” (Office of the Auditor General, 2011, p.11; Te Puni Kōkiri and Te Taura Whiri i te reo Māori, 2003, p.3). The vision of the Strategy was:

He reo e kōrerotia ana, he reo ka ora
A spoken language is a living language

The Strategy envisages that by the year 2028:

- Māori language will be widely spoken by Māori.
- In particular, the Māori language will be in common use within Māori whānau, homes and communities.
- All New Zealanders will appreciate the value of the Māori language to New Zealand society.

(Office of the Auditor General, 2011, p.11)

The Strategy identified ten areas where the Government can support language revitalisation and assigned the lead responsibility for the activities and outcomes in those areas to one (or more) of the six Government agencies involved. The ten areas were:

- Māori language education;
- Māori language broadcasting;
- Māori language arts;
- Māori language services;
- Māori language archives;
- Māori language community planning;
- Māori language policy, co-ordination, and monitoring;
- Public services provided in Māori;
- Māori language information programme;
- Whānau language development.

One of the few mentions of technology (of sorts) in this strategy is given as a rationale for Goal 5 – That iwi, hapū and local communities will be the leading parties in ensuring local-level language revitalisation. The rationale states that:

Māori have the lead role to play in revitalising the Māori language because ultimately the language is a Māori taonga. Government will provide support services, particularly in education and broadcasting, but can not directly affect whānau use of the language.

(Te Puni Kōkiri., & Te Taura Whiri i te reo Māori, 2003, p.25)

To further that concept the Strategy discusses the role of Government in a support function for "supporting the growth of the Māori language through funding radio and television broadcasting in the Māori language" adding that the function had already been expanded through the establishment of the Māori Television Service. The implementation of Māori language broadcasting policy and planning had been allocated to Te Māngai Pāho (*The Māori Broadcast Funding Agency*) and the Māori Television Service through various legislations over a ten year period (Te Puni Kōkiri., & Te Taura Whiri i te reo Māori, 2003, p.31). Otherwise there is no other direct mention of the use of contemporary technologies as tools for language revitalisation in this strategy. Instead there is commentary regarding the ongoing roles to be performed by both Māori and Government. For instance, Māori have the primary responsibility for the use and transmission of te reo within Māori homes and communities, as caregivers and first educators of new generations, who are the cornerstone of successful language revitalisation. Additionally, in Māori domains (such as marae and kapa haka), the tikanga that encourages and supports the increased use of the Māori language need to be designed and implemented by Māori (Te Puni Kōkiri & Te Taura Whiri i te Reo Māori, 2003, p.29)

3.7.4 *Te Paepae Motuhake*

In 2010 the Minister of Māori Affairs formed an independent panel that was charged with reviewing the Māori Language Strategy 2003 and investigating the state or health of the Māori language. That panel would be known as Te Paepae Motuhake. The purpose of that investigation was to identify opportunities that would increase and sustain the health and the use of te reo Māori and to support initiatives arising from those opportunities largely through tailored systems, structures and focus at a government level (Te Puni Kōkiri, 2011). The \$225-\$600million annual spend on Māori-language initiatives at that time had reportedly realised outcomes that were described as 'patchy' (Chapman, 2011; Te Paepae Motuhake, 2011). Panel chair, Emeritus Professor Sir Tamati Reedy noted a lack of 'value for money' in terms of general language outcomes (Chapman, 2011). The government drive, therefore was to provide the most effective services and programs that would efficiently utilize resources such as manpower, money and time, to achieve the best possible language outcomes (Te Paepae Motuhake, 2011; Te Puni Kōkiri, 2011). Or, as Higgins (n.d.) would observe, a dual focus of the 'future of the language' and 'value for money' (p.3). Te Paepae Motuhake attended one national and fourteen regional hui (*consultation meetings*), also meeting with a combined total of twenty eight government agencies and national Māori organisations, seeking to gauge the health of te reo Māori nationally and regionally, and to determine the aspirations of Māori. Throughout the review the panel was consistently reminded of the importance of te reo as the cornerstone of Māori culture and Māori identity (Te Paepae Motuhake, 2011, p.13).

The report provided by the panel provided recommendations in two main areas:

1. The re-establishment of te reo Māori in the homes, and,
2. A revised infrastructure that would ensure governance and accountability while returning effective use of resources (especially funding).

The Panel noted that the bulk of the Māori-language spend is in the areas of education, television and radio with less than two percent of government funding addressing language initiatives with families in the communities and in the homes (Chapman, 2011). Overwhelmingly the key initiatives are centered on relocating

the use of te reo and subsequent intergenerational language transmission back into the homes. Interestingly enough the potential benefits of the judicious use of Māori-centric broadcast media in the home environment is not mentioned although one rather nebulous recommendation calls for "linking Education and Broadcasting programmes more closely with Māori language homes" and states that "Broadcasters will support homes through programmes that better suit their needs" (Te Paepae Motuhake, 2011, p.47). A similar recommendation advocates the need to "Embrace technology as modern tools in the revitalisation of the Māori language" (p.23) with a caution that "Embracing technology is often heard as a panacea and a means of learning faster and more privately – since whakamā (*shame and embarrassment*) is a strong disincentive to learning" and that "it is still the most widely held belief that the learning of one's primary language is best and most efficiently delivered at the mother's breast" (p.25).

3.7.5 *Māori Language Strategy 2014*

The Government's new Māori Language Strategy outlines the Crown's approach to revitalising the Māori language. It includes new result areas, indicators and targets, principles, and confirms the roles of government. The Strategy also proposes legislation for improving the status of the Māori language and revised arrangements for the Māori language entities currently in Vote: Māori Affairs, as well as the establishment of a new independent, statutory Māori language entity, Te Mātāwai⁶³. The Māori Language (Te Reo Māori) Bill that is part of the Strategy is intended to replace the Māori Language Act 1987, and amend the Broadcasting Act 1989 and the Māori Television Service (Te Aratuku Whakaata Irirangi Māori) Act 2003. The purpose of these changes is to affirm the status of the Māori language as a taonga of iwi and Māori and an official language of New Zealand.

The Māori Language Strategy 2014 consists of five new result areas:

1. **Te mana o te reo** - increasing the status of the Māori language in New Zealand society;
2. **Te ako i te reo** - increasing the number of whānau Māori and other New Zealanders who can speak Māori;
3. **Te mārāma pū ki te whakaora reo** - critical awareness about Māori language revitalisation;
4. **Te kōunga o te reo** - supporting the quality and appropriate use of the Māori language and iwi dialect maintenance;
5. **Te kōrerotanga i te reo** - increasing the use of Māori language among whānau Māori and other New Zealanders, especially in the home.

⁶³ Te Mātāwai has now been established under the auspices of Te Ture mō te Reo Māori 2016

The two strategy headline indicators that will be monitored by Te Taura Whiri i te reo Māori and Te Puni Kōkiri are:

1. The number of whānau Māori and other New Zealanders who can speak the Māori language; and
2. The attitudes of all New Zealanders towards the Māori language.

The strategy introduces three key principles to guide implementation:

1. Strengthening the focus on whānau Māori, hapū and iwi;
2. Strengthening Māori leadership;
3. Supporting effective, efficient and co-ordinated government.

The Māori Language Strategy 2014 has altered the Māori Language Act 1987. The changes are expected to strengthen the provisions of the Act in line with the New Zealand Sign Language Act 2006. The Strategy will create a new Māori Language Entity, a governance organisation called Te Mātāwai. The responsibility for Te Taura Whiri i te reo Māori and Te Māngai Pāho will transfer from the Crown to Te Mātāwai. Te Pūtahi Paoho (*The Māori Television Electoral College*) will be disestablished and their roles and responsibilities assumed by Te Mātāwai. The structural changes have now been effected by Te Pire mō Te Reo Māori / Māori Language Act 2016 which also repealed The Māori Language Act 1987.

3.7.6 *Te Tāhuhu o te Mātauranga: The Ministry of Education*

Te Tāhuhu o te Mātauranga (*The Ministry of Education*) is the Government's lead advisor on the New Zealand education system and education strategies. The Ministry has responsibility for strategic direction, policy development and governance in the wider education sector with a substantial operational presence in the early childhood and schooling sectors. The role of the Ministry in the tertiary sector is largely focused on governance and analysis – including moderation and evaluation (Te Tāhuhu o te Mātauranga, 2015).

3.7.6.1 *Ka Hikitia*

The Māori Education Strategy was launched by the Ministry of Education in 1999. After consultation with Māori groups and Te Puni Kōkiri, the Strategy was published with three main goals:

- Raise the quality of English-medium education for Māori;
- Support the growth of high-quality kaupapa Māori education;
- Support greater Māori involvement and authority in education.

Ministry of Education, (2015)

The Ministry of Education report some significant gains in education performance for Māori students over a five year period. Reportedly the Ministry's skills, knowledge and capabilities had also broadened through engagement initiatives such as "iwi partnerships" (Te Tāhuhu o te Mātauranga, 2008, p.12). The 1999 Māori Education Strategy was republished in 2005 to "reaffirm the ministry's commitment to Māori education" (Te Tāhuhu o te Mātauranga, 2008, p.12). In 2006 the 1999 Strategy was reviewed and the program 'Ka Hikitia⁶⁴' was created with the first internal document titled 'Ka Hikitia – Setting Priorities for Māori Education'. This internal document outlined the proposed Māori education priorities for the ensuing five years of engagement with iwi and key education sector groups. The strategies

⁶⁴ The spelling of Hikitia is as used by the Ministry (normally Hīkitia)

in this document feed directly into the Tertiary Education Strategy 2007–2012 (Ministry of Education, 2015). The Ministry of Education translates Ka Hikitia as 'to step up', 'lift up', or 'lengthen one's stride'. In the context of this program it means raising the performance of the New Zealand education system to ensure "Māori enjoy and achieve educational success as Māori" (Ministry of Education, 2015; Te Tāhuhu o te Mātauranga, 2008, p.10). Following the priorities setting, a draft strategy was released in 2007 combining earlier priorities with goals, actions and targets. The strategy was then officially released nationwide in 2008 as 'Ka Hikitia – Managing for Success//Māori Education Strategy 2008-2012' (Te Tāhuhu o te Mātauranga, 2008, p.13). In line with the 'Managing for Success' philosophy, the Ministry of Education advocates a 'Māori Potential Approach' (see Table 8) which "provides the context for the shift in attitudes, thinking and practice required to achieve significant improvements in Māori education outcomes" (Te Tāhuhu o te Mātauranga, 2008, p.19).

Table 8: Māori Potential Approach in education

<i>Less focus on ...</i>	<i>More focus on ...</i>
Remediating deficit	Realising potential
Problems of dysfunction	Identifying opportunity
Government intervention	Investing in people and local solutions
Targeting deficit	Tailoring education to the learner
Māori as a minority	Indigeneity and distinctiveness
Instructing and informing	Collaborating and co-constructing

The Ministry of Education advocates this approach as an investment in strengths, opportunities and potential, amplifying successes rather than focusing on problems and disparities (Te Tāhuhu o te Mātauranga, 2008, p.19). Ka Hikitia – Managing for Success 2008–2012 aims to transform the education system and ensure Māori enjoying educational success as Māori is the norm.

In terms of technology, actions relating to goals in Focus Area Three of the Strategy include increasing the visibility of te reo Māori using children's television programs. This action would be achieved through partnerships with Te Taura Whiri i te reo Māori and with Television New Zealand. This action also includes supporting the pursuit by state schools of opportunities to elevate the visibility of te reo Māori (Te Tāhuhu o te Mātauranga, 2008, p.35).

In 2012 the Ministry of Education used the feedback from their 'Me Kōrero – Let's Talk!' survey to inform the development of the next phase of the Māori Education Strategy 'Ka Hikitia – Accelerating Success 2013–2017'. This strategy was released in 2013 and aims to celebrate success while ensuring and accelerating the attainment of more (Ministry of Education, 2015).

3.7.7 *The New Zealand Council for Educational Research*

The New Zealand Council for Educational Research (NZCER) is an independent, educational research organisation that provides independent analyses and research-based advice to the wider education community that includes educators, students, policy-makers and the general public. This Council, established in 1934, is not formally attached to any government department, tertiary learning institution or any educational organisation. Now operating under the NZCER Act 1972 the organisation is required to:

- foster the study of, and research into, educational and other like matters;
- prepare and publish such reports on these matters as may in its opinion be necessary or of value to teachers or other persons;
- furnish information, advice, and assistance to persons and organisations concerned with education or similar matters.

3.7.7.1 *Te Wahapū*⁶⁵

Te Wahapū, described as "the first nationally and internationally accessible computer-based communications system with a Māori-language on-line command system", was officially launched by the Hon. Merv Wellington, Minister of Education, in 1991. Te Wahapū was a collection of databases that included Māori dictionaries, a comparative database of new vocabulary for all the major Polynesian languages and information regarding various educational topics. The Māori-language database benefitted from a range of contributors who added a range of new and technical vocabulary. The database was hosted by the Department of Internal Affairs and then transferred to NZCER where it remained operational for a further year after the retirement of primary founder Dr. Richard Benton in 1996. The off-line version of the Māori-language database was eventually transferred to the care of Te Taura Whiri i te reo Māori⁶⁶ (Benton, 2000).

⁶⁵ Summarised from Benton (2000).

⁶⁶ Te Taura Whiri i te reo Māori is discussed in Section 3.7.1

3.8 Te reo me te hangarau: The language and the technology

This section charts a selection of historical events relating to te reo Māori. Much of the information was drawn from Bellamy (2010) and Te Taura Whiri i te reo Māori (2015).

Te Māngai Pāho (*The Māori Funding Broadcasting Agency*) was established in 1993 and three years later the Aotearoa Māori Television Network began to broadcast in the Auckland⁶⁷ region. In 1998 funding was increased for Te Māngai Pāho and the Government also set aside funding for a Māori television channel. One year later a Māori-language television program 'Tūmeke' began. Tūmeke was targeted at youth and later rebranded as 'Pūkana'⁶⁸. Support structures were implemented for the Māori Television Channel which was established as a Government priority within Māori broadcasting. The Māori Television Service (Te Aratuku Whakaata Irirangi Māori) Act was passed by Parliament in 2003 and broadcasting began in 2004. At that time there were twenty iwi radio stations broadcasting under the funding regimes of Te Māngai Pāho. Te Reo, the second Māori Television channel was launched in 2008. The following year an independent study undertaken by Te Kāhui o Māhutonga reviewed the Māori Television Service Act. Indications were that Māori are more likely than non-Māori to watch, listen to or read something in te reo on a weekly basis (25% versus 6%), however, 88% of those Māori surveyed reportedly watched, listened to, and/or read something in te reo *recently* (during the last two weeks of the survey period) compared with 51% non-Māori.

The Microsoft Corporation launched the 'Māori keyboard' in 2002. This enabled the insertion of the tohutō⁶⁹ (*macron*) as a standard option in Microsoft products. A Māori-language version of the Microsoft Language Packs was launched in 2005 allowing the interfaces of Microsoft Office and the Windows platform to be used

⁶⁷ Auckland is New Zealand's largest city located in the the upper North Island

⁶⁸ Reviewed in Section 4.1.2

⁶⁹ The tohutō is explained in the opening Conventions section and refers to the macron that signifies a written vowel that requires a lengthened vowel pronunciation

in te reo Māori⁷⁰. After a ten year part-time translation effort, the Māori-language interface was launched for the Google web search engine⁷⁰. The interface was publicly released on 23 July 2008 during Māori language week (21 July – 27 July 2008). During this year He Pātaka Kupu, the first monolingual Māori dictionary derived from the Te Wahapū⁷¹ project, was launched by Te Taura Whiri i te reo Māori. Te reo Māori was added to the Google Translator Toolkit in 2009 to assist Māori language translators by providing Māori-English and English-Māori translations and dictionaries. A 'Māori-language skin' was developed in 2012 to enable the use of te reo Māori when using Facebook. Because this is not an official Facebook translation, the skin must be modified every time Facebook makes a change to their menu systems. Facebook were in discussions with Te Taura Whiri i te reo Māori in 2013 regarding the translations of Facebook to include te reo.

A range of phones made available by Telecom⁷² in 2009 enabled common Māori words to be recognised in the predictive text message function and auto voice. A Māori-language interface is one language option on a smartphone launched by Two Degrees Mobile Limited in 2011. A study of this phone's usability is discussed in Section 4.6. Māori-language interfaces are also available on self-service machines such as automated tellers and library self-issuing machines. Some of these are discussed in Chapter 4. Chapter 5 reports on investigations based on the use of te reo Māori in social media – more specifically on the Twitter platform. Apart from the Government sponsored strategies that focus on Māori broadcasting, technology-based Māori-language initiatives have largely been uncoordinated with the developers operating in their own silos. However, there is a drive amongst a handful of developers who are seeking to embed Māori-language visibility (and usability) within popular technologies and groups are forming in New Zealand that are looking to coordinate a Māori-language focus in the digital arena.

⁷⁰ Māori language interfaces for these applications are discussed in Chapter 4.

⁷¹ Te Wahapū is discussed in Section 3.7.7.1

⁷² A New Zealand telecommunications company

3.9 Discussion

New Zealand in the early 1800s has been described as a thriving centre of trade where Māori and non-Māori were engaged in mutually beneficial trade. The increasing influx of migrants, traders, hunters, and explorers would test those trade-based partnerships and the community environments where they were taking place. Increasing acts of lawlessness and cultural disregard impelled Māori and some settlers to seek protection and some semblance of common governance from the British Crown. The impounding of a New Zealand-based trading ship and the requirement for such ships to be registered and display a flag became part of a catalyst that would result in the United Tribes Flag and Te Wakaminenga o Nu Tirene. Additionally, the British Crown was anxious that other countries were showing an interest in New Zealand and that the English-based New Zealand Company were about to transport large numbers of British emigrants with a view to forming a colony and government in parts of New Zealand. The Crown would eventually effect the annexation of New Zealand using the Treaty of Waitangi as an internationally recognised platform. Te Tiriti o Waitangi was initially signed by Māori and representatives of the Crown in 1840. An English translation was then made available and copies of both texts were circulated throughout New Zealand petitioning other Māori chiefs to be a party to the agreement. The copies still in existence have been signed by more than 500 Māori chiefs – the English-language version carries the signatures of 39 of those chiefs. The intent of that Treaty and, indeed, the differences between the te reo version and the English-language version, has been compounded by the post-signing actions of the Crown's representatives who began actively working towards assimilating Māori with the goal of attaining an English speaking, Pākehā-centric New Zealand.

The impact of subsequent colonising practices by representatives of the Crown resulted in the decline of te reo Māori. The shifting of language preferences by Māori in general would see the health of the language reduce to levels that would cause alarm and a trepidation amongst Māori that their language was in dire straits. During the early 20th Century, te reo Māori had ceased to be the main language for Māori. The pervasion of English in education, media and general social settings, meant there were very few instances where Māori was still spoken in everyday

contexts by all ages, from pre-schoolers to the aged. Māori children were generally more comfortable conversing in English than they were in Māori. For younger generations, persistent exposure to the English language at school, and in general settings due to media such as radio, television and the movies would impact later generations to the point where te reo Māori was in a critical state. Petitions to the New Zealand Government and acts of protest resulted in the establishment of the Waitangi Tribunal, in 1975, and a vehicle for Māori to legitimately place Treaty-based grievances against the Crown and the New Zealand Government. The Te Reo Māori Claim (WAI 11) and the Flora and Fauna Claim (WAI 262) have resulted in some landmark outcomes for te reo Māori. The Māori Language Act 1987 was passed by Parliament and gave official recognition to te reo and the right to use te reo Māori in official (legal) settings. The Act also gave birth to Te Taura Whiri i te Reo Māori, signalling an active commitment by the Government to support the restoration of the language nationally. These outcomes were based on the recognition of te reo Māori as a taonga under Article 2 of Te Tiriti o Waitangi. It has been postulated that the status of the Māori language as an Article Two issue is detrimental to any future positioning of the language. Higgins and Rewi (2014, p.31) observe:

If we continue to covet the 'taonga' like the fabled character Gollum does in Tolkien's *The Lord of the Rings*, and treat it as 'my precious' and no one else's, we could be in danger of ritualizing the language for special occasions.

According to Higgins & Rewi (2014), repositioning the language as an issue under Article Three, would affirm te reo Māori as part of the citizenship of New Zealand – further endorsing a bilingual/bicultural national identity.

The Government-based language strategies have a heavy reliance on participation by Māori. This is important. Māori populations share common histories, grievances and experiences with other indigenous cultures (Durie, 2002. Smith, 1998). In order to achieve successful outcomes when reversing language shift, the affected indigenous communities must be involved in the strategic and managerial roles of strategic initiatives – especially at a national level. This is also critical at the coal-face. The implementation of initiatives must be owned and driven by Māori. The

more contemporary assessment of Māori development now reflects sustained strategies that embrace self-determination, economic growth, social equity, and cultural affirmation (Durie, 2002). The necessity for, and progression of, Māori aspiration, self-determination and protection of cultural taonga (*treasures*) is intrinsic to indigenous management of areas such as environment, knowledge and research based on traditional values and concepts (Durie, 2002; Harmsworth, 2002; White, 2000). Māori development is not a new phenomenon and the reported longevity of this experience should surely qualify as a resistance model (Durie, 1998; Durie, 2002; Harmsworth, 2002). Much of this development has been in survival, asset retention and the avoidance of further assimilation. There exists an intrinsic partnership between the development of an indigenous culture, and, of their involvement in compiling the strategic pathway that will then accomplish this development successfully and in a sustainable manner (Harmsworth, 2002). Furthermore, the survival of an indigenous culture will require the positioning of traditional concepts and values in a contemporary setting alongside Western values and contexts. Indigenous approaches and perspectives are cited as being fundamental to holistic development, where examples of success measurement include increases in wellbeing, health, human and social capital, and culturally appropriate strategies for economic growth (Durie, 2002; Harmsworth, 2002).

The advent of widespread digital technology has accelerated language shift globally. Technology-driven language shift is discussed in Chapter 2 and points to a wholesale shifting of language preferences, at least when using contemporary information and communication technologies, in order to fulfil a need or desire to be broadcast and received as widely as possible. It seems ironic that extensive connectivity using digital capability, on the one hand, is one reason that language shift to a major language such as English occurs more rapidly, but, on the other hand, is also being used as a vehicle by many minority language groups seeking to redress the decline of their own languages. In terms of te reo Māori, recent technologies might offer a range of opportunities to increase the visibility and use of the language. The Māori language strategies established by the New Zealand Government addresses the visibility and use of te reo through media such as television, radio and various methods of internet-based video. Measurement components of those strategies aim to quantify the success of using such tools and

to gauge the attitudes and perceptions of the general public regarding the resulting increase of the use and visibility of te reo Māori nationally.

This research notes a subtle shifting of philosophies and perceptions arising from the optimism of Māori, the stated viewpoints of the Waitangi Tribunal and an array of active strategies and policies instituted by the New Zealand Government. A widespread recognition is becoming evident that is moving past a grievance settlement process toward a national identity based around two founding cultures. Community-based language programs that are supported by government initiatives are slowly aligning in a manner that seeks to restore te reo Māori as a nationally spoken language. This restoration is evident more especially in the areas of education and broadcasting, where the increasing visibility of Māori language and Māori culture is, perhaps, a harbinger of an impending bilingual and bicultural nation. Recent language initiatives are acutely aware of the need to develop and foster positive attitudes and perceptions of the wider New Zealand public and the attitudes and perceptions of Māori and of Pākehā. The Waitangi Tribunal speaks about a post-settlement process that recognises that any act of compensation from the claims recommendations does not, in itself, address historical marginalisation, the loss of land, nor the quelling of belief systems, the language and the culture. Those are perhaps best addressed based on a Māori/Pākehā model of a dual partnership. The recognition of equality and a 'mutuality of respect' would then underpin notions of nationhood and national identity. A bilingual and bicultural New Zealand is approaching an optimistic reality that all New Zealanders need to be cognisant of and a journey to be negotiated by all New Zealanders nationally, at a local level, and as communities and individuals (King, 2003, p.518).

Awareness, engagement and perception: the use of Māori-language interfaces for selected technologies

4.1 Introduction

Recent developments enable engagement with information and communication technologies using minority languages. Translated interfaces mean technology-based interactions can be undertaken using some minority languages, in forums and locations that were previously unavailable. They also mean minority language users are able to interact with each other using these technologies in their own language. One might expect that the existence of translated interfaces would provide a range of options to strategies and initiatives aimed at ensuring the continued use of a minority language in as many situations as possible.

The availability of translated interfaces for various technologies is significant because they support the use of a minority language on some well-used technologies. The capability to access or use some of these technologies via the World Wide Web is even more significant when one considers the capacity for widespread dissemination and the potential for continuous availability. The use of the Internet as a platform for delivering translated computing applications, for instance, provides situations where the potential to use a language in global contexts is virtually limitless. As discussed in Chapter 2, the enduring health and longevity of a language can be gauged by the numbers of people who speak and use the language, the amount of everyday situations where the language is used and the extent to how normal it is considered to be using the language in those situations. It seems reasonable then to regard translated application interfaces as one way to increase the use and arenas of use of a minority language in ways that would benefit the ongoing health of that language. Continued association with technology and modernity may also bring benefits to minority language communities - especially in terms of visibility and availability.

Various initiatives have developed interfaces for some popular technologies that are now available in te reo Māori. Examples of translated interfaces include:

- websites
- popular computer applications
- physical self-service machines e.g. automated teller machines (ATMs)
- mobile communication.

Other developments include translation tools that exist as websites, web pages or smart-phone applications (apps). More recently, the use of te reo Māori in social media is under closer scrutiny. Indigenous Tweets and Indigenous Blogs are websites that currently highlight and monitor the use of selected minority languages, including te reo Māori, in web logs (blogs) and micro blogs (Twitter⁷³). A Māori-language ‘skin’ is also now available that, upon deployment, displays the primary pages and main menu options of Facebook⁷⁴ in te reo Māori. The main focus of these translations is aimed at enhancing the likelihood that an endangered language will survive through its increased use and the increased availability of ways in which the language can be used.

The provision of localised technological resources fits well within the policy objectives of New Zealand’s Māori Language Strategy 2003 & 2013, which advocate a focus on increasing the opportunities to use te reo Māori by increasing the number of situations where te reo Māori can be used (Te Puni Kōkiri, 2002). There is little point, however, in providing such applications if they are not utilised. If the translated interfaces are not being used, then the reasons for making them available, while well-intentioned, remain largely unrealised.

To compound the issue further, the maintenance, update and continued provision of such initiatives may rely on whether or not they are being used. Developers such as the Microsoft Corporation (Microsoft) and Google Inc. (Google) might cease to apply their own resources to ensure applications continue to be available in minority languages where those applications are not being used - a clear case of the ‘use it

⁷³ Twitter is a micro-blogging platform and is discussed in more depth in Chapter 5

⁷⁴ Facebook is a popular social media platform

or lose it' philosophy. Additionally, if there are a small number of users of the translated applications, the timing of upgrades and further development might become patchy or slow. This in turn could further reduce the number of users, creating a self-driven downward spiral that eventually renders such applications unusable and unused. To lose these types of initiatives and any opportunity for further developments could represent a severe blow to ensuring the widespread availability and use of te reo Māori - especially in such global contexts. Given the premise of ensuring language survival by increasing the language usage in everyday situations, the loss of initiatives that have such far-reaching capability must surely be guarded against.

Prior to adding to the range of localised technologies, it seems appropriate to gauge the impact of existing developments. A useful exercise would determine levels of awareness that specific localised products exist. Further outcomes of such an exercise should include measures of engagement and the identification of perceptions and barriers especially in terms of acquisition and use. This has prompted the invitation to specific sample groups to participate in surveys aiming to gauge their awareness and perceptions of selected translated interfaces and to determine actual engagement levels with those particular applications.

One might assume that translating computer applications into a minority language and ensuring greater levels of engagement with those applications are valid strategies to support the revitalisation and survival of that language. Whether or not this is actually the case remains to be seen. Translating computer applications into a minority language may be considered beneficial as part of a strategy for the survival of that language – probably even more so when the translating is followed by a campaign that ensures the wider population is aware of the translations and uses the applications in the target language. It would be seriously remiss, however, to focus on the issues of awareness and engagement without also undertaking some investigation into the suitability of the applications themselves as tools that will contribute, either directly or indirectly, to strategies aimed at language survival and regeneration.

A selection of translated technologies are the basis for the five projects that will be reported upon in this chapter. The first project was quite small. Following

translations of the Microsoft Office Suite and Microsoft Windows⁷⁵, little was known about how well or how often these translated applications were being used in te reo Māori. Additionally, the interface translations for Google web search and for the Moodle learning management system had been completed about this time⁷⁶. Because there was no evidence that these translated application interfaces were being used, a small-scale survey was undertaken to provide an initial understanding of the levels of awareness and engagement.

Section 4.2 reports on the small survey carried out with six Māori-medium schools local to Hamilton, New Zealand. The study was focused on the Māori-language interfaces for the following applications:

- Microsoft Office (2003)
- Windows XP
- Google web search
- Moodle (version 1.6)

This study was deliberately small and the data gathered were used to gain an initial picture of awareness, engagement and perception with regard to the chosen translated interfaces.

Section 4.3 reports on a much larger study involving the same interfaces as the initial study in Section 4.2. In conjunction with the Ministry of Education, Māori-medium schools were canvassed nationally and invited to participate in a short survey to gauge awareness and engagement with the Māori-language interfaces, to identify issues of perception in terms of current and future use, and to initiate discussion regarding the usability and suitability of the translated interfaces.

Some feedback from this larger survey mentioned an automated teller machine (ATM) that was able to be used in te reo Māori. The ensuing investigation and reported outcomes inform Section 4.4.

⁷⁵ Microsoft Office is a suite of software applications and services developed by the Microsoft Corporation (or just Microsoft). Microsoft Windows (or just Windows) is a platform (or a family of operating systems) also developed by Microsoft.

⁷⁶ More detail is included in Section 4.2

Section 4.5 also reports the use of self-service machines - in this case library self-issue machines that are able to be used in te reo Māori.

Section 4.6 reports the findings of our final project regarding translated interfaces. This investigation focused on the use and usability of a smartphone that could be used with a Māori-language interface.

Most of the participant feedback expressed a delight and some pride to discover the translated interfaces for each of the applications. However, the majority spoke about their difficulties with new words and the new uses of words and concepts. Following the completion of the final project, the Smartphone study, we began to consider that the difficulties mentioned might also stem from a previous proficiency with those technologies in a different language – English in this case. This line of thought would benefit from further investigation. A comparative study that examines translated interfaces in a range of minority languages might also prove useful if only to discover how other languages cope with the introduction of 'new' words and concepts.

4.1.1 Background

In response to the threat of losing language and culture, Māori groups and communities have, especially over the past few decades, developed and implemented a range of Māori-language initiatives. These initiatives have been driven by rising concern over the declining numbers of fluent Māori-language speakers and the increasing loss of public spaces where speaking te reo Māori is regarded as commonplace and therefore quite a 'normal' occurrence in those spaces. Early initiatives were largely community driven and spurred by the realisation that inaction would lead to the eventual demise of the language and probably the consequent demise of Māori culture. Many of these initiatives tended to operate independently of each other. In spite of this, those early actions highlighted a determined effort amongst Māori especially to guard against the demise of their language and culture and to prevent a resulting loss of their identity as Māori. Other focal points exist as common themes. These have included the need to increase the numbers of fluent Māori-language speakers and to gain wider public acceptance

among Māori and non-Māori in order to normalise the use of te reo Māori in a greater variety of situations.

4.1.1.1 Younger generations

While most Māori-language initiatives sought to provide a range of language learning options for the wider community, the general focus has been to instigate programs that would include or result in continuous language transmission to younger generations. Early movements such as Te Kōhanga Reo⁷⁷ and Kura Kaupapa⁷⁸, by their very nature, also created situations where teaching, learning and speaking te reo Māori was normal and acceptable. Because these programs were largely community-driven, shifting that normalcy from the learning environment to the wider community was met with a distinct lack of general support and proved difficult to realise in a sustained manner. Some traction followed legislation such as the Māori Language Act 1987, recognising te reo Māori as an official language of New Zealand, and the Education Act 1989, formally recognising kura Kaupapa and thereby enabling communities to access education funding and support from the New Zealand government.

To the detriment of Māori-language use, the impact of English as the widely preferred language by young New Zealanders has been compounded by their widespread engagement with technologies that include social media, mobile communication and computer-based gaming. For New Zealanders, English is the predominant language used in these types of contemporary technologies⁷⁹. The increased uptake of such technologies over the past couple of decades, especially in terms of social media and smart-phone technology and especially by younger generations, has been extraordinary. Building similar technologies using te reo Māori and developing strategies that ensured sustained interaction might be one way to increase the visibility, accessibility and use of the language. Campaigns aimed at promoting the use of the Māori language need to be cognisant of domains that are generally available to the wider community, but employed far more often

⁷⁷ Māori-language ‘nests’, Māori immersion early childhood education – see Section 3.6.1

⁷⁸ Māori-medium school – primary and post-primary

⁷⁹ This is also supported by the studies detailed in the following sections of this chapter

by younger generations. Increased engagement with technologies using te reo Māori should be one expectation of such campaigns.

4.1.2 Translated application interfaces

The surveys in Section 4.2 and Section 4.3 focused on translated interfaces for:

- Microsoft Office (versions 2003 and 2007)
- Windows (XP, Vista)
- Google web search
- Moodle (versions 1.6, 2.0)

4.1.1.1 Windows XP and Microsoft Office 2003

Windows XP is a platform of operating systems released by the Microsoft Corporation in 2001 as the successor to Windows 2000. Microsoft Office 2003 is an office software suite written by Microsoft and distributed in 2003. The suite includes reasonably well-known applications such as Microsoft Word (MsWord), Excel and Powerpoint. Both Windows XP and Office 2003 were translated in 2004 by a team of translators at the University of Waikato in New Zealand and launched by Microsoft in 2005. This allowed computer users to perform basic computing functions, including word processing, spread-sheeting and electronic mail (email) using te reo Māori (see Figure 17).

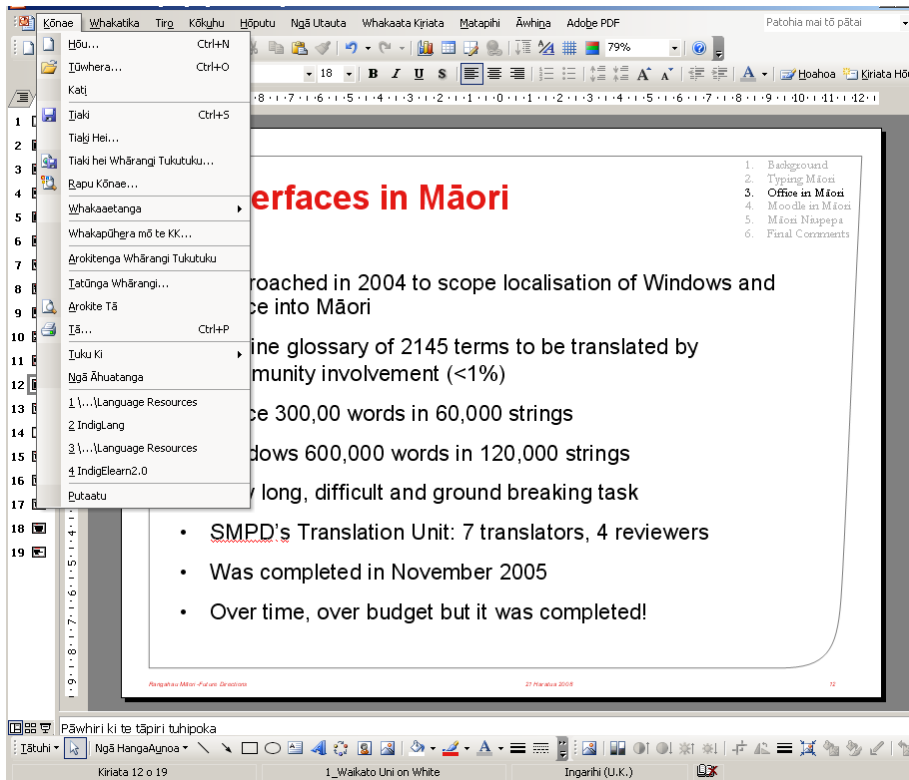


Figure 17: Māori-language interface for MsWord 2003

The earlier initiatives were continued and the translations of the updated applications, Microsoft Office 2007 and Microsoft Vista, were facilitated in 2009 by Te Taura Whiri i te reo Māori⁸⁰ (*The Māori Language Commission of New Zealand*). Further versions, Office 2010 and Windows 7 were released in 2011 and Windows 8 in 2012⁸¹.

⁸⁰ Dr Te Taka Keegan: personal conversation February 2011

⁸¹ For further information visit <https://blogs.msdn.microsoft.com/nzgovtech/2013/06/25/te-reo-mori-choice-for-windows-8-office-2013-and-the-internet/>

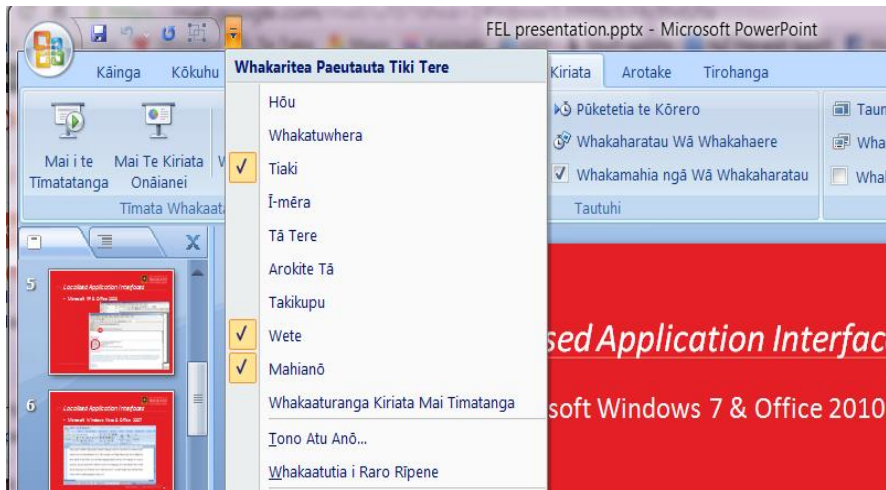


Figure 18: Māori-language interface for MsPowerpoint 2010

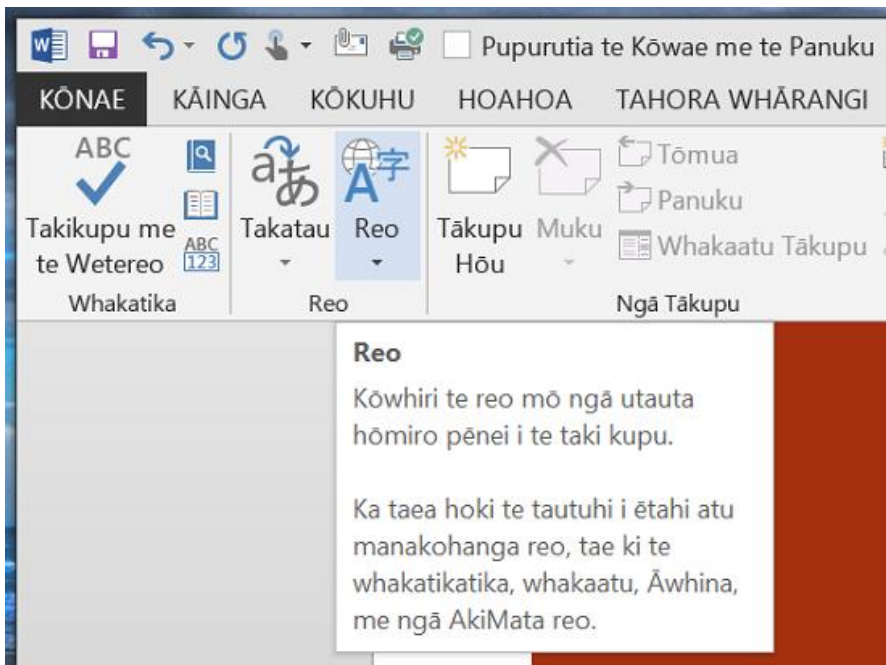


Figure 19: MS Word 2013 with Māori-language interface

As with previous versions, the ensuing translations are available at no additional cost from Microsoft. Furthermore, the costs incurred during the various translation efforts were offset by generous funding support from the Microsoft Corporation⁸⁰.

4.2.1.1 Moodle

Moodle is an open-source⁸² software package that has been designed as a learning management system for producing and administering internet-based courses and websites. Benner (2007, p.1) says the rise of this software as an online learning option has been meteoric and describes Moodle as “the de facto platform for online learning”. Moodle does not insist on registration by users of their software, largely because it is open source and can be used free of charge, so accurate usage figures are unobtainable. Registered users, however, have listed approximately 35,000 validated sites, operating in 196 countries, in more than 75 different languages, managing more than 2,250,000 courses. (Moodle, 2009, p.1).

The Moodle interface was initially translated by a volunteer team based at the Waikato Institute of Technology (Wintec) in Hamilton, New Zealand and a team representing Ngāi Tahu. Ngai Tahu (or Kai Tahu) is an iwi (*Māori tribal group*) in the South Island of New Zealand with dialectal language differences to all other iwi in New Zealand. Version 2.0 was later translated in 2009 and 2010 by teams based at the University of Waikato. The latter projects aimed to bridge the gap between meeting the needs of Māori learners, the development of e-learning capability for institutions and learners in the education sector, and the revitalisation of the Māori language (Roa, 2006).

⁸² "Open source" designates something that people can modify and share because its design is publicly accessible. In terms of software, the source code is made available for use or modification as users or other developers see fit. Open source software is usually developed as a public collaboration, made freely available and bound by various protocols that normally includes continued sharing of any modified code - <https://opensource.com/resources/what-open-source> and <http://searchenterpriselinix.techtarget.com/definition/open-source>



Figure 20: Moodle with te reo Māori interface

Moodle provides educators with the ability to design and present electronic learning activities through an interface supporting te reo Māori. However, it is clear from informal discussions with tutors and lecturers of te reo Māori within Te Pua Wānanga ki te Ao (*The Faculty of Māori and Indigenous Studies* at the University of Waikato) that, while many are aware of the Māori-language interface option, none are using it, citing the time it would take to decipher the translated computer terms as the main barrier. The most recent conversation⁸³ included a suggestion of a mouse-over option, where one could hover their mouse icon over Māori words that were confusing or not clearly understood. The application would then provide an alternative Māori word or an English translation. One will also note that the main subject matter is presented in English – see Figure 20, but this was not identified as a barrier during the discussions.

⁸³ With Ēnoka Murphy (Senior Lecturer in the Faculty of Māori and Indigenous Studies, University of Waikato) in April 2017.

4.3.1.1 Google Web search

Google web search is owned by Google Inc. and amongst users from many countries is the mostly widely used search engine on the World Wide Web (WebCertain, 2010).

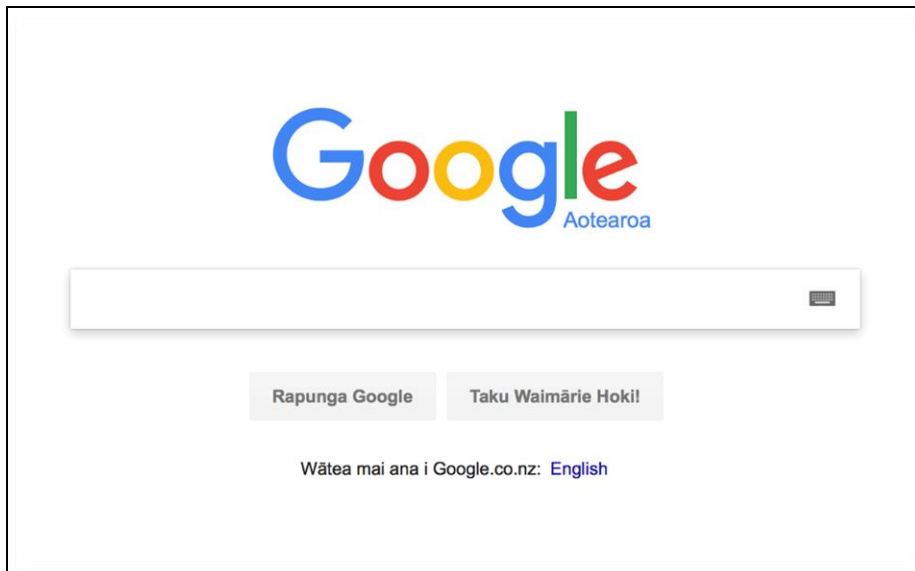


Figure 21: Google search with te reo Māori interface

A team of volunteers, many of whom have links to the University of Waikato, was responsible for translating the Google interface into te reo Māori over an extended period of time – about 10 years⁸⁰. The interface was publicly released on 23 July 2008 during Māori language week (21 July – 27 July 2008). At this point more than 1600 phrases, totalling more than 8,500 words had been translated⁸⁰. In spite of that the web search interface is not a complete translation, with some functionality that is available in the English-language not being available in the Māori version.

4.2 Preliminary Survey – Māori-medium Schools

The following overview of this preliminary survey has been summarised from the paper that was authored and presented by Dr. Te Taka Keegan⁸⁴ and Paora Mato at the 2nd International Conference on Language Documentation and Conservation held at the University of Hawai'i in Mānoa, 12-18 February 2011. The paper is referenced as:

Keegan, TT., & Mato, P. (2011). Are computer applications being used in te reo Māori?: Some initial findings. A paper presented at the 2nd International Conference on Language Documentation and Conservation held at the University of Hawai'i in Mānoa, 12-18 February 2011.
doi: <http://hdl.handle.net/10125/5184>

Six Māori-medium schools were selected based on their proximity to the University of Waikato and levels of familiarity between the teaching staff and the research team. The six Māori-medium schools included 2 each of Wharekura (*Secondary Schools*), Kura Kaupapa (*Primary Schools*), and Kōhanga Reo (*Pre-schools*). The teachers and students of each of these schools were fluent in te reo Māori. Teacher representatives from each of the schools were engaged in conversation similar in most aspects to semi-structured interviews. The teachers were personally known by Te Taka Keegan who performed all the interviews. The questions focused upon standard school metrics, computer use and the awareness and use of the translated interfaces for:

- Microsoft Office (2003)
- Windows XP
- Google web search
- Moodle (version 1.6)

Participants were also asked their views regarding the suitability and possible future use of the interfaces.

⁸⁴ Dr Te Taka Keegan is a senior lecturer in the Faculty of Computing and Mathematical Sciences - Department of Computer Science, at the University of Waikato.

4.2.1 Results - Preliminary Survey

The findings from the preliminary study are shown in Table 9. The data represents the number of teachers and students at each school and the number of computers that are in use. The rest of the table shows which of the localised interfaces are being used at each of the schools.

Table 9: School metrics and use of translated interfaces

	Wharekura		Kura Kaupapa		Kōhanga Reo	
	A	B	A	B	A	B
Teachers	50	21	9	8	30	8
Students	600	230	150	90	68	32
Computers	120	80	35	28	12	2
Office	No	No	1/35	Yes	No	No
Windows	No	No	1/35	Yes	No	No
Moodle	No	No	No	No	No	No
Google	No	10%	No	Yes	No	No

The following are some of the replies when the participants were asked whether or not they would consider using the interfaces, how the software would be implemented and any foreseeable issues with using the translated interfaces:

Wharekura A

- Definitely! Anything that enhances the use and propagation of te reo Māori.
- The software would be just inserted on their computers.

Wharekura B

- Āe! (Yes!). How do we do it now?
- The children would be given no option.

Kura Kaupapa A

- Would need to check but it would be quite possible.
- Would be awesome for our tamariki (*children*).

Kura Kaupapa B

- It's just normal, relieving teachers are surprised by this capability.
- The children have cited a preference for Māori rather than English on the computer.

Note that the interfaces were previously installed at this school. Since that time these software interfaces have become a normal feature. A video on the Microsoft website contains feedback from the teachers and students of this school⁸⁵.

Kōhanga A

- Sure it would be used.
- It would be nice to have something with a Māori interface for the 2-5 year olds.

Kōhanga B

- Time vs. integrity. We are more used to English so it is faster, but we should use the Māori interfaces because we are a Māori-medium school.
- Any type of Māori resources would be gratefully appreciated because we are ignorant of things to do with computers.

4.2.2 Summary – Preliminary Survey

Aside from Kura Kaupapa B⁸⁶, who already had the software, none of the schools really knew about the availability of the translated interfaces. All the schools were keen to acquire and use the software and, for the most part, prepared to force its use on the students. Concerns that were raised included issues of:

- Cost
- Understanding the new vocabulary
- Time required for installation and learning to use the software

⁸⁵ Available at <https://blogs.technet.microsoft.com/terminology/2011/06/27/office-2010-now-available-in-mori/>

⁸⁶ The translated interfaces were installed by Te Taka Keegan at Kura Kaupapa B because his children were pupils there.

Given that downloading the translated interfaces can be done free of charge, the issues of cost may be related to installation and technician time and subsequent teacher training. Although the sample size was quite small, this survey has been useful for informing a subsequent survey that has used a much larger sample.

4.3 Secondary survey – Māori-medium Schools

The general awareness and use of application interfaces that have been translated into te reo Māori is suspected to be low, even amongst users who are fluent speakers of te reo. Previous research indicates uptake might be lower than 15% of Māori-language speakers (Keegan & Mato, 2011). The need for research that quantifies levels of awareness and engagement is important because it will provide data that can be compared to perceptions that are largely based on word of mouth - essentially informed by ad hoc conversations with small numbers of people. Such data may also provide guidance for policy and specific interventions. This section, describing the survey and its outcomes, has been summarised from the following papers:

Mato, P., Keegan, TT., Cunliffe, D., & Dalley, T. (2012). Perception and Use of Software with a Māori-language Interface in Māori-Medium Schools of New Zealand. A paper published in the proceedings of the XVI Foundation for Endangered Languages Conference held at the Auckland University of Technology, Auckland NZ, 12-14 September, 2012. Online at <http://www.ogmios.org/conferences/2012/proceed2012.php>

Mato, P., Dalley, T., & Keegan, TT. (2012). Reo Māori ki ngā Rorohiko o te Kura: An investigation into the use of software with a Māori-language interface by Māori-medium schooling of New Zealand. A report provided to the Te Reo Māori Schooling Group of the Ministry of Education, NZ.

Mato, P. (2012). The Role of Information Technology in Māori Language Strategy – Localised Interfaces: Initial Findings. A paper published in the proceedings of the New Zealand Information Systems Doctoral Conference held at the University of Waikato, Hamilton, NZ, 31 August, 2012. Online at <http://www.nzisdc.com/nzisdc2012/conference-proceedings>

In doing so I acknowledge the significant amounts of research and collaborative inputs of Dr Te Taka Keegan, Dr Daniel Cunliffe (University of Glamorgan, Wales) and Tara Mauriohoho Dalley (University of Waikato).

4.3.1 *Target sample*

For the purposes of this study a specific target group was identified – the Principals of Māori-medium schools in New Zealand. Due to the nature of their role within the school, Principals are likely to affect both policy and attitude. The selection of Māori-medium schools also provided us with participants who could be considered

to have some vested interest in the health of the Māori language. Given that they exist nationwide, these schools could be expected to provide a reasonably clear representation of awareness, engagement and perception both regionally and nationally.

The Ministry of Education identifies five types of Māori-medium schools:

- Immersion School
- Bi-lingual School
- Schools with immersion classes
- Schools with bi-lingual classes
- Schools with immersion and bi-lingual classes

The survey was conducted in conjunction with the Te Reo Māori Schooling Group which is a division of the Ministry of Education. Representatives of this group vetted the survey proposal, provided contact details and supplied an initial introduction and survey outline to each of the schools.

4.3.2 Methodology

The purpose of our information gathering was twofold:

- Quantitative
 - What are the levels of awareness that translated interfaces exist?
 - What are the levels of engagement with these interfaces?
- Qualitative (perceptions)
 - Do people believe these interfaces should be made available to all users?
 - What prevents more people using these interfaces now?

This survey aimed to determine awareness and engagement levels of a relatively large audience in terms of the translated computer interfaces. In other words, do people know these interfaces exist and, when they do know, are they using the software? Where the interfaces were not being used we wanted to know why. We were also interested in gauging the willingness of participants to engage with the interfaces and to ascertain what perceived barriers there might be to engagement.

The survey used a small questionnaire that aimed to recover as much information as possible in the shortest amount of time. Conscious that school Principals are busy people and likely to be targets of a multitude of surveys and similar requests, the questionnaire was designed with five main questions. Using email the Principals were initially invited to participate in this survey by answering a quick questionnaire over the phone. As a result the questionnaire was delivered to 24 Immersion School Principals by phone. The remaining 64 immersion schools were re-contacted by email - only one of these requested a phone interview in te reo Māori. Due to changes of project staff and the need to quickly complete the data gathering, the questioning of the remaining immersion schools and the 197 other Māori-medium schools was conducted by email. The response breakdown is shown in Table 10.

Table 10: Questionnaire response rate

Māori-medium Schools Contacted				
type of schools	number	phone contact	email contact	responses received
Immersion	84	24 (29%)	60 (71%)	36 (43%)
All others	197	0 (0%)	192 (97%)	11 (4%)
Total	281	24	252	47 (17%)

Each of the Immersion Schools that responded provided feedback from the Principal with one of these schools also adding a response from one of the teachers. The other schools provided feedback from either the Principal or a designated agent. Of the email responses, 9 were in te reo and, of those, 4 of the questionnaires were answered in Māori – all responses in te reo were from immersion school Principals. That the majority of responses were in English may have been the result of attaching the English-language version questionnaire to the electronic mail.

4.3.3 Questionnaire responses and analyses

The following is a summary of the responses to each of the questions and includes statistical analysis where it has been considered valid to do so.

1. Do you write in te reo Māori on your computer?

All of the respondents write in te reo Māori to some degree. The responses varied from less than 5% of the time to all of the time and, averaged overall, the participants will write in te reo Māori about 65% of the time. The two school Principals that write in te reo all of the time say that they will write in English when they know the recipients are not fluent in te reo Māori. While all Principals wrote in te reo Māori on a day to day basis, the ratio of Māori to English varies dramatically. The only clear trend is that, at nearly 80% of the time, immersion school Principals will write in te reo Māori far more often than the Principals of the other Māori-medium schools.

2. Do you use software with a te reo Māori interface?

Overall, 45.8% of the respondents (47.2% of Immersion Schools) say they are using some sort of localised interface. Upon further investigation however, the results are less than promising with most schools using only one or two of the localised interfaces.

2a. If the answer to Q2 was No, why don't you?

Nearly 31% of all respondents who do not use the localised software say they are unaware that it exists. With regard to Immersion Schools only, the number of those who have not heard of this software reaches 42%. Those who believe they are not computer literate enough to use the software or are too unfamiliar with the 'kupu hou' (*new words*), and therefore operate more quickly and more comfortably in the English-language versions, represent 31% of the total. One of these has tried the MS Office interfaces but found them too confusing with too many new words to learn.

Barriers to using localised interfaces

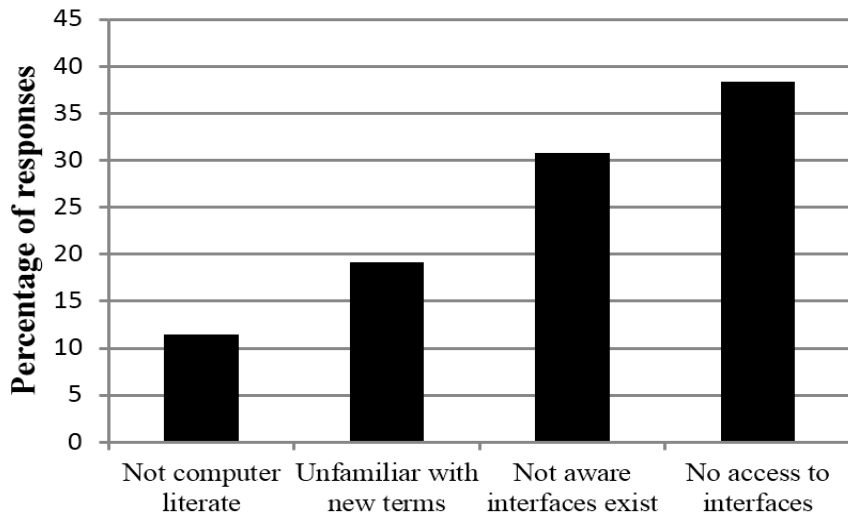


Figure 22: Reasons translated interfaces are not used

The majority of respondents cite the lack of access and the lack of resources to download the localised software as the main reason they do not use it.

2b. If the answer to Q2 was Yes, which of the following do you use in te reo Māori?

The most popular translated software was the Google web search interface (37% overall) with Microsoft Office (30.2%) and Windows (23.2%) the second and third well-used respectively. Moodle is being used but only by some immersion schools.

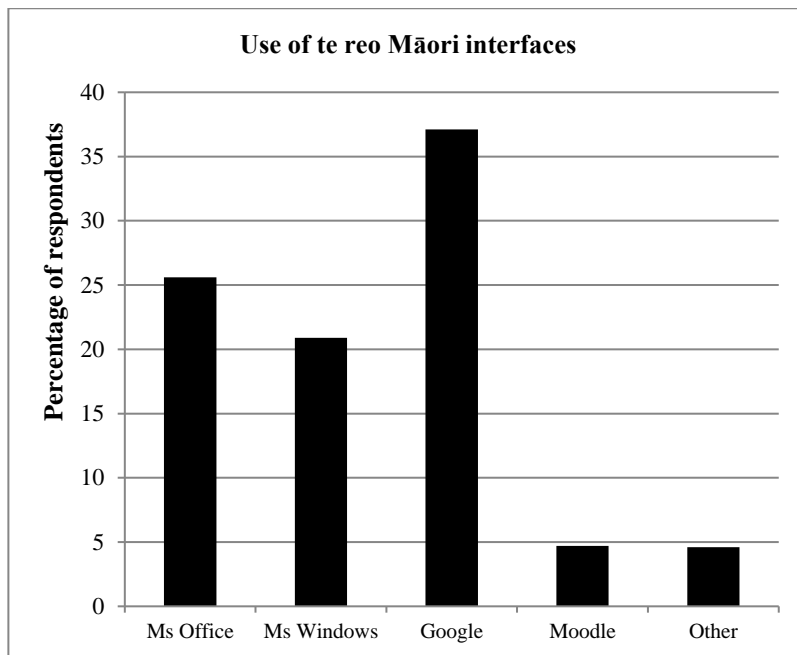


Figure 23: Software used with localised interfaces

Other software that is being used with a translated interface include the bilingual education portal Te Kete Ipurangi⁸⁷, which is an initiative of the Ministry of Education, and a package called eTap⁸⁸ which is a New Zealand-developed student management system for primary and post-primary schools.

3. Do you think children and staff of Māori-medium education should use software with a te reo Māori interface?

Please explain...

All the respondents agree that the software should be made available to staff and students of Māori-medium schools. However, when asked whether or not such software *should* be used, comments ranged from:

- “Yes, this is a kura Māori (*Māori-medium school*), therefore everything we do should be in te reo”, to
- “Only if it is user-friendly” and
- “Whatever gets the message across quickly and unambiguously will suffice”.

⁸⁷ See: <http://www.tki.org.nz/>

⁸⁸ See: <http://www.etap.co.nz/page0.php>

The majority of immersion schools suggested that because the schools were Māori-medium, the students should use these interfaces in te reo. They viewed the interfaces as a benefit because the students wouldn't have to language-switch, between te reo Māori and English, when using their computers. Feedback from immersion schools also indicated the students were more familiar with te reo Māori and found the English-language interfaces more difficult to navigate.

There was unanimous agreement that the interfaces should be regarded as resources that could be used as teaching aids to promote language learning and language health. There were also reservations where schools were not entirely supportive of the software, some believing that the main focus should be on the outcomes rather than the tools.

We also received a surprising amount of commentary on the perceived lack of technological skill among teachers. While most of the respondents pointed out that students live in a time where technology is continuously advancing and so they should be exposed to those advancements, many were less confident that teachers had the know-how or desire to keep pace with such developments. The general opinion was that staff would need to be proficient not just in te reo but also in using technology, and, where pupils would adapt to using new technologies relatively easily, staff would need much more time and support. The technology-savvy disparity between students and teachers was a common theme.

The responses have been categorised into six main themes. Where the feedback indicates a specific application for the software the response has been coded under '*Teacher aid*' rather than the less specific '*Available resource*'. For example, using Moodle to contact teachers even when not at school would be a specific '*Teacher aid*', whereas "It's another means of increasing knowledge" is less specific and listed under '*Available resource*'. '*Kura Māori*' encapsulates the feedback that suggests the interfaces should be used because these were Māori-medium schools, while '*Reservations*' reflect the more cautionary replies.

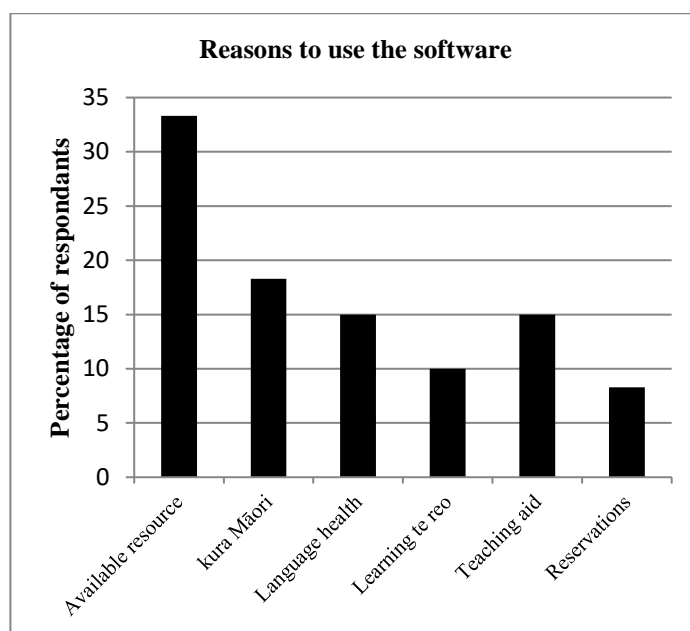


Figure 24: Reasons to use the software

The remaining two categories could have been combined; however, separately they reflect the difference in responses between learning te reo Māori and promoting or keeping the language alive (Language health).

The overall feedback indicates a perceived usefulness for this type of resource while hesitancy to use the software was expressed by a relatively small percentage.

4. What do you think prevents users who are fluent in te reo Māori from using software in te reo Māori?

Kupu hou was identified as the primary barrier to using the localised interfaces. Of the respondents, 28.8% cited a lack of understanding of the language used and that the time needed to source meanings was prohibitive. One response said the language was “... similar to reo pāngarau (*mathematics*) where the concepts are universal however the vocab is new and huge...” and “... kaiako (*teachers*) needed to commit time to learn and use reo rorohiko (*computer language*)”.

The lack of understanding, knowledge or confidence amongst teachers when using computer technology was also reported as a major barrier to acquiring the localised software. Comments such as “Ko te mea nui ko te mārama i ngā mahi o te rorohiko (*The hardest thing is understanding how computers work*)” and “...not computer literate in English let alone te reo Māori” were quite common. The feedback was

clear that the students would come to grips with the language and the technology very quickly while the ‘older generations’ would struggle.

The other notable groupings were access and awareness. Access referred mainly to those with an inability to download or otherwise obtain the software without help, while a large number (15.3% of the responses to this question) were unaware that the software existed.

For the purposes of this exercise the one-off replies and those which didn’t fit into the four main categories were designated ‘Other’. These included the quality of the translations, reo-ā-iwi [*dialects*], keeping the status quo (English-language interfaces) and the use of the tohutō (*macron*). Although the participants were advised that the interfaces could be downloaded free of charge, a small percentage mentioned cost as a barrier.

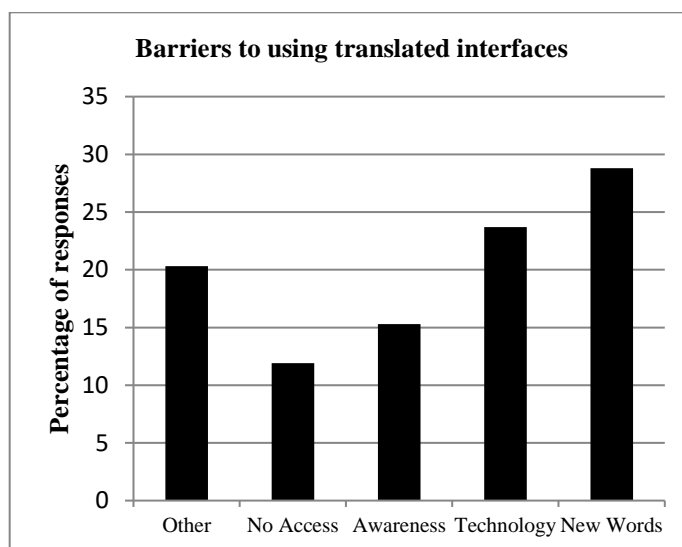


Figure 25: Percentage of responses by category

The feedback highlights a need to upskill, empower and support teachers with regard to computer technology generally and the localised software in particular.

5. Do you have any further comments about software with a Māori language interface?

Almost half (48%) of the respondents chose to comment further. Many of these referred to the need for more resources, especially online, for promoting te reo Māori. Some spoke of acquiring suitable software and then supporting and

encouraging staff to become familiar and adept in its use and that the use of such interfaces should be a priority in all schools. The intersection of te reo Māori and information technology is seen as something that is both unavoidable and yet lacking in available, user-friendly applications.

4.3.4 Summary

Despite the low response rate and the high-level of self-reported data, this survey has provided some insight into the perceptions and use of software with Māori-language interfaces among the Principals of Māori-medium schools in New Zealand. Given that 41% of the immersion schools responded to our survey, we consider we have a suitably sized sample that reasonably reflects the views and standpoint of all immersion schools with some accuracy. Whether or not a 41% response rate from immersion schools might also be used as an accurate portrayal of the engagement and perceptions of the other types of Māori-medium schools is debatable. We have elected, therefore, to regard the feedback as representative of Māori immersion schools only. On a daily basis it would appear that Principals of immersion schools write in te reo Māori much more often than their counterparts from other types of kura Māori. Apart from that, however, the general nature of the replies was similar overall.

The relatively low response meant differentiations between characteristics such as demographics and location would have lacked statistical validity. These types of analyses, therefore, were not included.

The number of Māori-medium schools that are aware that there are software interfaces available in te reo Māori is low. This is surprising considering that a large number of respondents referred to the need for more resources, especially online, and particularly for promoting te reo Māori. The responses indicate that schools are largely unaware of what is available in terms of translated interfaces and localised software. At the very least, a collation of what is available may prove to be a useful resource for Māori-medium schools.

A major barrier to using the translated interfaces is the terminology used in the interfaces. Respondents say they struggle with the ‘new words’ and that trying to

come to grips with reo rorohiko (*computer language*) takes time, patience and some commitment. Most quickly revert to the English-language interfaces to save time and to reduce frustration. While there were suggestions that the interfaces should be acquired with some priority for all schools, respondents also believed this should be accompanied by adequate staff development where teachers are exposed to the software and encouraged and supported to gain proficiency in its use. The provision of a translation dictionary specific to computing and other sciences was suggested and should be a consideration within strategies that seek to further promote these types of resources.

The amount of feedback regarding the lack of general technological expertise was notable. While the causes and solutions for this were outside the objectives of this research, any campaign aimed at increasing awareness levels of localised software should go some way to address the difficulties that appear to be faced by staff when using computer technologies in these environments.

Amongst schools that are aware of the localised interfaces, the uptake and usage could be seen as ad hoc and school-specific. The interfaces themselves are regarded as having a useful role to play, especially in the promotion and acquisition of te reo Māori, and especially in immersion schools. However, it would seem that the difficulties associated with acquiring and using these types of software currently outweigh the potential benefits.

4.4 Māori-language interfaces: The BNZ ATM

Te reo Māori is an available language option on some physical self-service machines in New Zealand. This section reports on a study of the use of the translated interface of the automated teller machines (ATMs) provided by the Bank of New Zealand (BNZ)

The BNZ agreed to support this research by supplying data regarding the language preference of users⁸⁹ who use their machines. The bulk of this section includes summaries of the following four publications:

Mato, P. (2015). Translated Application Interfaces: issues of engagement. A paper published in the proceedings of the 15th New Zealand Conference on Human-Computer Interaction held at the University of Waikato, Hamilton, New Zealand, 3&4 September 2015. doi:10.1145/2808047.2808061

Mato, P., & Keegan, TT. (2013). Using technology in an indigenous language: Preliminary studies of ATMs and library kiosks usage in te reo Māori. A paper published in the proceedings of the Native American & Indigenous Studies Association (NAISA) Conference held at the University of Saskatchewan, Saskatoon, Canada, 13-15 June, 2013.

Mato, P. (2012). What is the role of technology within a Māori-language strategy? A paper published in the proceedings of the XVI Foundation for Endangered Languages Conference held at the Auckland University of Technology, Auckland NZ, 12-14 September, 2012. Online at <http://www.ogmios.org/conferences/2012/proceed2012.php>

Mato, P. (2012). The Role of Information Technology in Māori Language Strategy – Localised Interfaces: Initial Findings. A paper published in the proceedings of the New Zealand Information Systems Doctoral Conference held at the University of Waikato, Hamilton, NZ, 31 August, 2012. Online at <http://www.nzisdc.com/nzisdc2012/conference-proceedings>

⁸⁹ All data was unattached and high level – it could not be tied to the banking and personal details relating to individual users

4.4.1 Bank of New Zealand

The Bank of New Zealand (BNZ) is one of 21 banks registered in New Zealand (Reserve Bank of New Zealand, 2012). With an estimated population of slightly under 4.5 million (Statistics New Zealand, 2012), New Zealand represents a very competitive market to banking institutions. By their own admission, BNZ aim to be as competitive as possible with a focus on reducing operating costs while offering customers a positive banking experience (NCR, 2009). The BNZ consider themselves to be at the forefront of customer-focused technological development that includes mobile wallets for ‘contactless transactions’, Mobile NetGuard – a simplified access protocol which enables secure online banking on smart-phones, and Instant Balances; allowing customers to use iPhone and Android apps to see their account balances without having to use a login (BNZ, 2012a; BNZ 2012b, BNZ, 2012c).

The BNZ have identified their self-service network, which includes approximately 435 ATMs nationwide, as an area with significant potential for cost reduction and service improvements (NCR, 2009). According to the BNZ, their ATMs are more convenient, user-friendly, faster, more reliable and environmentally friendly (BNZ, 2012; Mukerjee, 2012; NCR, 2009). Their aim is to provide an enhanced self-service experience for their customers and other users of their facilities.

4.4.2 Background

First launched in October 2007, the language options were selected using inbound tourist data to target local customers whose first language is not English. The options are regularly reviewed to ensure currency and appropriateness for ATM users (BNZ, 2007).

The catalyst for this particular investigation arose from a survey that invited Māori-medium schools in New Zealand (see Section 4.3) to answer a small questionnaire regarding the perceptions and use of localised or translated application interfaces. While the focus of the survey was on localised interfaces for a handful of computer applications, one of the respondents mentioned the length of time the interface of her local BNZ ATM had remained in te reo Māori.

The focus of this research is the availability of te reo Māori as part of the multilingual interfaces on all BNZ ATMs. The interface is available in eight languages (see Figure 26):

- Simplified Chinese
- Traditional Chinese
- German
- French
- English
- Korean
- Māori
- Japanese



Figure 26: Language selection screen - BNZ ATM

A small study was undertaken over the course of one month that monitored the interface of an ATM in Hamilton, NZ. It was found that almost all of the time the interface remained in Māori. The only time it reverted to English followed a switch to English when one of the error messages in te reo Māori wasn't fully understood. The next visit revealed the English interface and at that point it was surmised that the machines 'remembered' previous user settings which were then displayed whenever that user returned. Upon further investigation this proved to be the case. In fact, the settings are also remembered for non-BNZ customers who use the BNZ machines (BNZ, 2007).

The BNZ generously agreed to provide sets of data to assist this research. The analysis of the raw data was expected to result in trending outcomes that will be mutually beneficial to this research and to the Bank of New Zealand. The analysis was also expected to provide levels of usage in terms of languages and demographic information that might become pertinent to further investigation. However, issues of privacy made the acquisition of bulk data difficult. The data we did obtain could not be trended with any certainty based on demographics and this was therefore not pursued.

4.4.3 Data analysis

The language preference details of ATM users, including non-BNZ customers, are stored by the BNZ and show that the first two multilingual machines were used mostly in English (90%) with simplified and traditional Chinese next popular at 7% of all users (BNZ, 2007). Further metrics were provided by Paul Johnson, the BNZ Manager of ATM and Physical Self Service. The data provided were snapshot summaries taken on three separate days as depicted in Table 11.

Table 11: Language preference snapshots to 10 May 2013

Language	31 July 2011		8 August 2012		10 May 2013	
	number	%	number	%	number	%
Chinese Standard	25,690	0.73	54,434	0.98	76,170	1.10
Chinese Traditional	4,864	0.14	7,302	0.13	9,267	0.13
English	3,416,626	96.76	5,312,674	95.97	6,585,935	95.51
French	19,400	0.55	43,326	0.78	58,251	0.84
German	38,000	1.08	79,685	1.44	117,661	1.71
Japanese	8,342	0.24	15,172	0.27	20,034	0.29
Korean	13,525	0.38	19,820	0.36	23,984	0.35
Māori	3,443	0.10	3,615	0.07	4,504	0.07
Totals	3,529,890		5,536,028		6,893,806	

The number of stored user preferences has nearly doubled from 3,529,890 to 6,893,806 over the 2 year period. This suggests an increase in users who have accessed the ATM on only one occasion or have created more than one profile (perhaps by having more than one card). Given that the entire population of New

Zealand is less than 4.5million, the capture of slightly under 7million ATM language preferences seems to indicate a high percentage of single event occurrences. A collection of limited uses by foreign travellers would be one example of how this would occur. The BNZ performed self-analyses of their data capture and storage processes to determine accuracy and relevance, however, the outcome of this analysis was not made available.

The language preference data was averaged and is presented in Figure 27.

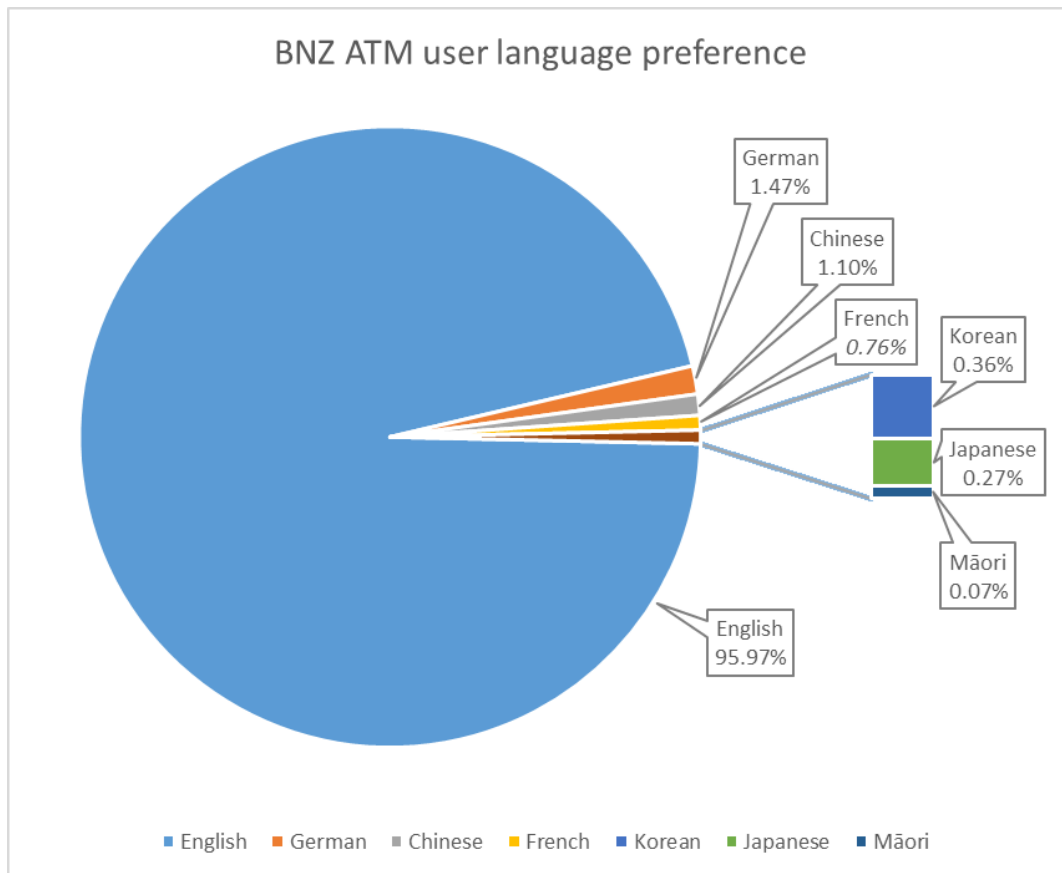


Figure 27: User language preferences⁹⁰

English is the most preferred language option followed by German, Chinese and French. Of the top four most-preferred languages, only English is not trending upwards. This might mean that some English-language users are switching preferences or that more new customers are taking up a non-English language option. This would be difficult to ascertain from the data and was subject to the

⁹⁰ Averaged from Table 11

interrogation by the BNZ of their own data collection and storage methods. Figure 28 shows the trended language preferences from Table 11 (with the exception of English which trended downward from 96.76% to 95.51%).

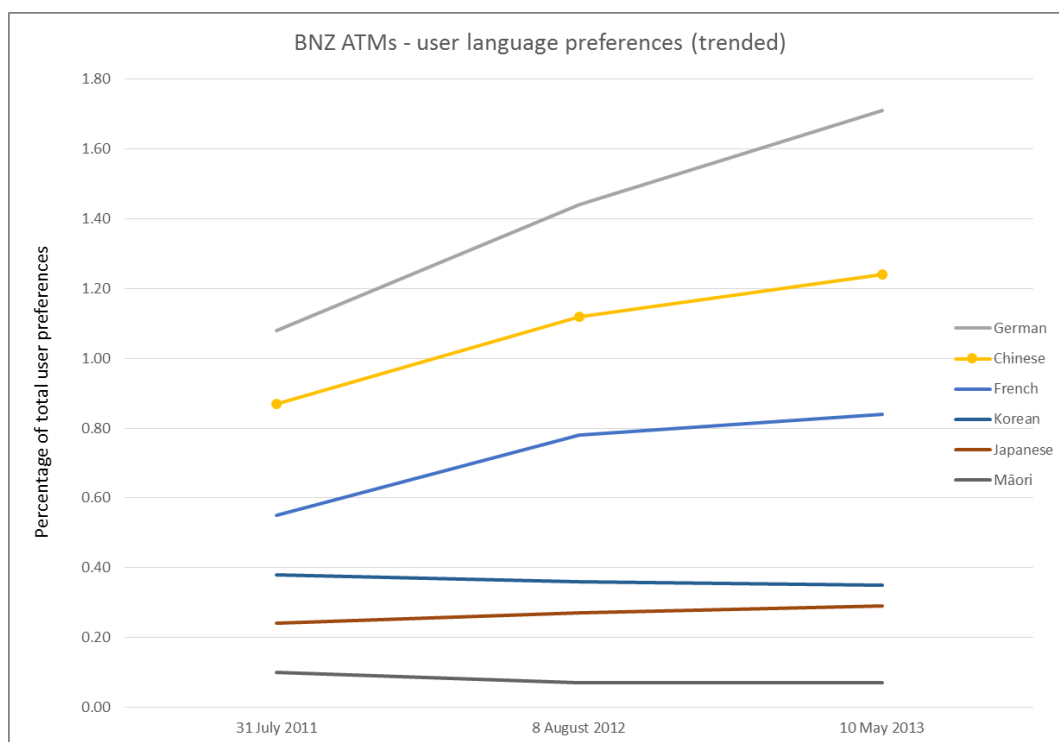


Figure 28: Trended user language preferences (% of all users)

Apart from English, Korean and Māori, the language preferences appear to be trending upward. Although we have reservations regarding data accuracy, the Māori-language choice is relatively very low at less than 0.1% overall and appears to be trending downward. According to the 2006 New Zealand census, people who identified themselves as Māori and usually dwelled in New Zealand represented slightly under 15% of the NZ population. Of these, 23.7% could hold a conversation about everyday things in te reo Māori (Statistics New Zealand, 2007). This means nearly 3.6% of the NZ population can hold conversations about everyday things in te reo Māori. One objective of an engagement strategy could involve increasing the percentage of ATM users who choose Māori, currently less than 0.1%, to closer represent the 3.6% of New Zealanders who can hold everyday conversations in te reo Māori. This assumes also that 3.6% of BNZ clients can converse in te reo Māori.

The multi-lingual interfaces are not actively promoted by the BNZ. If targeted Māori-language promotion occurs, will this increase the use of the Māori-language

interface? Additionally, would switching the ATM default screen to te reo Māori highlight useful engagement trends? What would be the long-term impact of changing the message banner rather than the whole screen - would that provide useful results with less impact on BNZ customers? We discussed these options with the BNZ, aware that the accuracy of the outcomes and analyses will depend to a large degree on the amount and quality of data that is provided.

4.4.4 Promotions: Matariki me Te Wiki o te reo Māori

In 2013 BNZ's Māori Development Team launched campaigns based upon Matariki (*the Māori New Year*) and Te Wiki o te Reo Māori (*Māori Language Week*). The Team used the main ATM screen to greet users and to provide other types of information. During Matariki BNZ ATM users were greeted in a manner similar to wishing someone a happy New Year (see Figure 29)⁹¹.



Figure 29: Māori greeting on the ATM screen during Matariki

	Kia manahau te Matariki	<i>Happy New Year!</i>
The	Mai te Pēke o Aotearoa	<i>From the Bank of New Zealand</i>

emergence of the Pleiades star cluster in the night sky, generally in early June,

⁹¹ This message remained on the BNZ ATM for all of June 2013

signifies the beginning of Matariki. The cluster was represented upon the Māori-language greeting screen on the BNZ ATMs (see Figure 29).

Te Wiki o te reo Māori was first observed in 1975. Each year Māori Language Week, facilitated nationally by Te Taura Whiri i te reo Māori (*The Māori Language Commission*), embraces a core theme and the New Zealand public are encouraged to use Māori words and phrases as much as possible during this time. For instance, in 2010 Te Wiki o te reo Māori with a theme of ‘Te Mahi Kai - The Language of Food’, in 2013, ‘Ngā Ingoa Māori - Māori Names’ of places, people and objects and in 2017 the theme of ‘Kia ora te reo’ celebrated New Zealand’s indigenous greeting and the intent of te reo Māori revitalisation efforts between the Crown and Māori (NZMCH, 2017, p1.).



Figure 30: BNZ ATM screen during Māori Language Week 2013

The theme for Māori Language Week 2013 (1-7 July) was ‘Ngā Ingoa Māori’ (*Māori Names*). The BNZ campaign for Māori Language Week included translating the main screen of the ATM into te reo Māori and included a map of New Zealand, on a second screen, with some well-known place names and their Māori-language

equivalent (see Figure 31). The machines were set to cycle between the normal English-language screen and the two screens depicted in Figure 30 and Figure 31.



Figure 31: ATM screen showing some New Zealand place names in te reo Māori

We were interested to see if there would be an impact on the language preferences of the BNZ ATM users following the six weeks or so of Māori language visibility on the ATM screens. We were able to source a snapshot of the language preference data for the 25th July – just a few weeks after the end of Māori Language Week. The numbers show a 7% increase in the number of users whose profile reflected a Māori-language preference (from the 10 May snapshot), however, in terms of the proportion of the total ATM user profiles, there was no movement at all in Māori-language preference (see Table 12).

Table 12: Language preference snapshots to 25 July 2013

Language	31 July 2011		8 August 2012		10 May 2013		25 July 2013	
	number	%	number	%	number	%	number	%
Chinese Standard	25,690	0.73	54,434	0.98	76,170	1.1	81,749	1.13
Chinese Traditional	4,864	0.14	7,302	0.13	9,267	0.13	9,844	0.14
English	3,416,626	96.76	5,312,674	95.97	6,585,935	95.51	6,891,159	95.51
French	19,400	0.55	43,326	0.78	58,251	0.84	60,759	0.84
German	38,000	1.08	79,685	1.44	117,661	1.71	120,456	1.67
Japanese	8,342	0.24	15,172	0.27	20,034	0.29	21,032	0.29
Korean	13,525	0.38	19,820	0.36	23,984	0.35	25,083	0.35
Māori	3,443	0.1	3,615	0.07	4,504	0.07	4,822	0.07
Totals	3,529,890		5,536,028		6,893,806		7,214,904	

Although the number of profiles increased for all language preferences between the last two snapshots (10 May and 25 July) the only real percentage movement is a slight increase in the Chinese-language profiles at the expense of German (see Table 12)

4.4.5 Discussion

Ultimately this research is about understanding what the drivers are that encourage users to interact with technology in their own language. When the data-capture and storage issues have been rectified, the preferred language settings on the ATMs will certainly provide a genuine base to work from. Additionally, when more snapshots are able to be sourced there may be correlations to be made between Māori-language preferences and particular events such as Matariki and Matatini (the National Festival of Māori performing arts), or specific marketing initiatives aimed at increasing awareness and engagement with the Māori-language screen.

Useful exercises may also include using the demographic information to compare and analyse usage in areas where te reo Māori is expected to be strong, for example, Kawerau, NZ where 61.1% of the population is Māori, against areas where te reo is envisaged as being less strong, for example Christchurch, NZ where the Māori population is less than 10% (Statistics NZ, 2007). Any further investigation should hinge on the assured integrity of the data. When the processes of data-capture and data-storage within the BNZ systems are understood and more data, either bulk or regular day-to-day snapshots, is made available, then further analyses of the data can be performed with some confidence.

4.4.5.1 ATM Language Updates

The Aotearoa Credit Union Bank opened a branch within Te Kohao Health, a Hauora Māori (*Māori Health Provider*), located on the Kirikiriroa Marae, Hamilton in December 2014. The joint initiative between Te Kohao Health and the Aotearoa Credit Union also offers an ATM that is completely in te reo Māori⁹². Levels of use in te reo Māori were not available.

⁹² See: <https://www.youtube.com/watch?v=Qp6583oIIPQ> (YouTube video news report)

The Westpac Bank added te reo Māori as a language option to its ATMs across New Zealand in July 2016. In September 2017 the Waikato-Tainui dialect was offered on approximately 90% of the Westpac ATMs as an addition to the standard te reo option. The availability of te reo Māori o Waikato is the first time a bank has offered an ATM language distinct to one iwi, Waikato-Tainui, which has around 70,000 members. Waikato-Tainui te reo advisor Pānia Papa says:

“Maa te urunga o te reo o Waikato ki ngaa miihini tango moni e tautoko te whakamahinga o te reo i ia raa, i ia raa, i roto i te hapori, aa, maa reira e piki ai te mana o te reo.”

“Normalising te reo through ATM interactions lifts the status and value of the language by bringing it into everyday use in our communities.”

"Ko te wawata hoki, kia whaaia teenei taurira e ngeetehi atu peeke me ngaa raatou kiritaki kia nui ake ai te koorerotia o te reo i ngaa mahi peeke."⁹⁴

“Hopefully this will prompt more banks and their customers to speak Maori more in their banking interactions.”⁹³

Westpac NZ general manager of commercial, corporate and institutional banking, Karen Silk, estimates the te reo Māori screens are being used, on average, 3300 times each month⁹⁴.

The ANZ Bank of New Zealand launched a te reo Māori option on their ATMs to coincide with the beginning of Māori Language Week 2017⁹⁵. According to an ANZ media release⁹⁶, the ANZ's entire range of 650 automated teller machines will give users the choice of using te Reo Māori. A statement by Antonia Watson,

⁹³ Translations provided as part of the online news report

⁹⁴ See: <http://www.scoop.co.nz/stories/BU1709/S00291/waikato-tainui-language-option-added-to-westpac-atms.htm>

⁹⁵ 11 – 17 September 2017

⁹⁶ See: <https://www.anz.co.nz/resources/b/3/b3459994-d338-4c85-bb1d-a22f03784ef0/ATM-network-now-Te-Reo-Maori.pdf>

ANZ's Managing Director Retail and Business Banking, asserts "Te Reo Māori is fundamental to our national identity and this is a milestone in our commitment to the language. We hope this gives people another opportunity to use Te Reo in daily life". The ANZ ATMs are also able to be used in English, simplified Chinese, Korean and Japanese.

4.5 Māori-language: Library SelfCheck™ Machines

Te reo Māori is an available language option on some physical self-service machines in New Zealand. This section reports on a study of the use of library self-issuing (SelfCheck™) machines that are supplied by 3M New Zealand (3M) and administered locally. In conjunction with 3M, ICT staff at the Central Library of the University of Waikato supported this research by supplying historic background, general administrative information and data relating to the language preferences of users who choose to self-issue from the library. In particular I acknowledge and thank David Friggens and Fred Young for assisting with our queries and providing the data that underpins much of our findings.

This section includes excerpts and summaries from the following publications:

Mato, P. (2015). Translated Application Interfaces: issues of engagement. A paper published in the proceedings of the 15th New Zealand Conference on Human-Computer Interaction held at the University of Waikato, Hamilton, New Zealand, 3&4 September 2015. doi:10.1145/2808047.2808061

Mato, P., & Keegan, TT. (2013). Using technology in an indigenous language: Preliminary studies of ATMs and library kiosks usage in te reo Māori. A paper published in the proceedings of the Native American & Indigenous Studies Association (NAISA) Conference held at the University of Saskatchewan, Saskatoon, Canada, 13-15 June, 2013.

Mato, P. (2012). What is the role of technology within a Māori-language strategy? A paper published in the proceedings of the XVI Foundation for Endangered Languages Conference held at the Auckland University of Technology, Auckland NZ, 12-14 September, 2012. Online at <http://www.ogmios.org/conferences/2012/proceed2012.php>

Mato, P. (2012). The Role of Information Technology in Māori Language Strategy – Localised Interfaces: Initial Findings. A paper published in the proceedings of the New Zealand Information Systems Doctoral Conference held at the University of Waikato, Hamilton, NZ, 31 August, 2012. Online at <http://www.nzisdc.com/nzisdc2012/conference-proceedings>

3M New Zealand (3M) manage a collection of library SelfCheck™ machines that are available in approximately 70 locations in New Zealand. Library patrons wishing to borrow items from a library are able to self-issue some items using these machines. Initial investigations focused on the 4 machines at the Hamilton campus of the University of Waikato. One of the machines (Education) is located in the satellite library at the School of Education. Another (Reserve) is located in the Course Reserves room in the Central Library and the two remaining machines (Central Left & Central Right), pictured in Figure 32, are located inside the Central Library's main entrance.



Figure 32: Central Left & Central Right SelfCheck machines

There is no documentation regarding the design and implementation of the Māori-language interface. The SelfCheck™ machines were initially bought in 2003 as part of a transition to a new library management system. The Māori-language option was implemented at the start, or very soon after. The localised screens were not provided by 3M with the original machines and it is thought that the translations were completed by the Māori Liaison Librarian at the time. The machines were upgraded in 2008 but there was no further work done on the localised screens and, to-date, there has been no thought given to the capture and storage of the data

relating to the language selections of users⁹⁸. The Māori text used umlauts to show lengthened vowels, as shown in Figure 33, rather than macrons because the initial systems didn't support Unicode^{97, 98}.

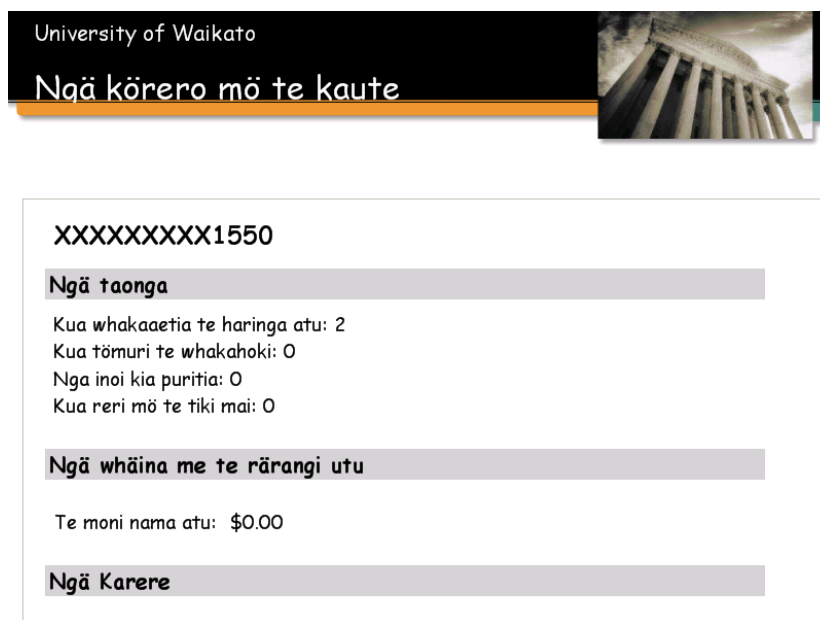


Figure 33: Examples of the use of umlauts (eg Ngä)

The umlauts have now been entirely replaced with macrons⁹⁹.

4.5.1 *Language preference data*

The SelfCheckTM machines can record all incidences of language selection by date but are only able to store limited amounts of data. The storage capacity is based on file size. A high number of self-issues on a particular day generates more data, meaning less days are stored. When storage limits are reached the oldest data drops out of storage and is then irretrievable. This means the more that people use the

⁹⁷ Unicode is a character encoding standard that represents characters as numbers for use by computer-based technologies. The standard allows the representation of text and script of most of the world's languages as numbers - <http://unicode.org/standard/WhatIsUnicode.html>

⁹⁸ D. Friggens, personal communication, May 29, 2013

⁹⁹ D. Friggens, personal communication, June 10, 2013

machines, the larger the amount of data that is produced, and the shorter the date range that the data is kept for.

Figure 34 shows an overview of all language preferences. English is obviously the main language of choice. Chinese is preferred as a language option by more users overall than those who choose Māori, however, it seems that the location of the machine has an impact on the data (see Table 13).

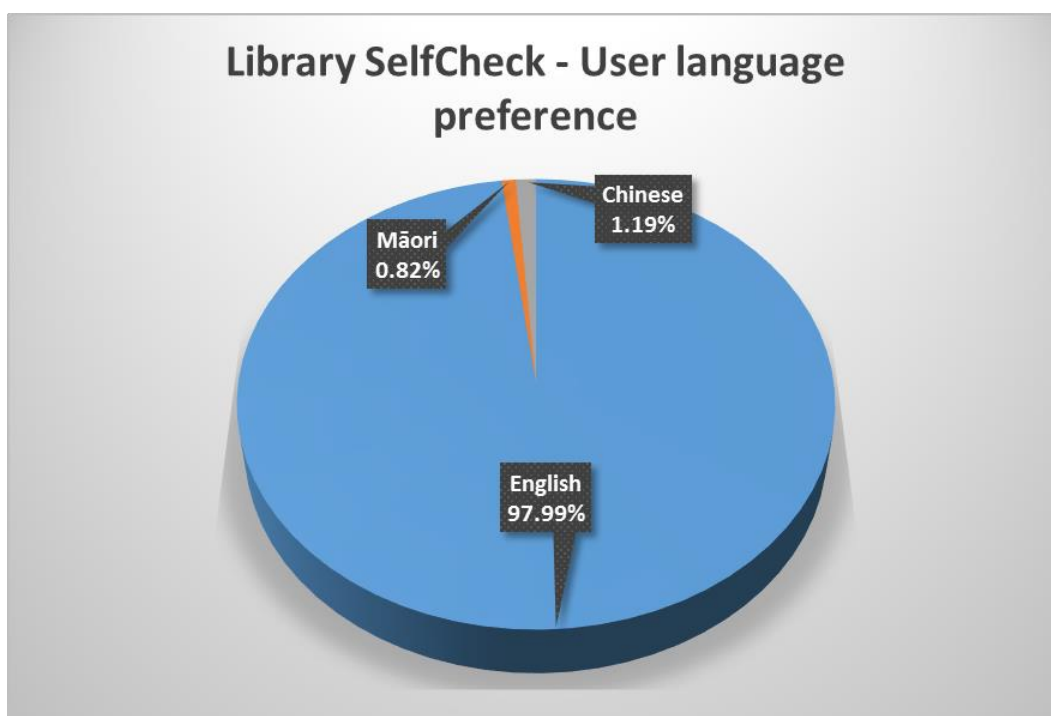


Figure 34: Library SelfCheck - User language preferences

The language selection data was extracted from 4 machines at 3 different locations on the University of Waikato campus. One machine (Reserve) is on the Ground Floor of the main library but is located in Course Reserves; a separate room that is used primarily for acquiring and using information that has been reserved for various courses. Course Reserves are often in the form of journals, course notes and books. Of the 241 courses for which there are reserves, only one course uses te reo Māori - the majority are delivered primarily in English. This appears to be reflected in the SelfCheck language preferences shown in Table 13.

The remaining machines, Central Right and Central Left, are located on the Ground Floor beside the main entrance to the main library as shown in Figure 32. Given that these 2 machines are next to each other, an exercise to determine why the Māori and Chinese language preferences are not the same for both machines would be useful and interesting. Māori is the preferred language for 1.2% of the users on Central Right, but only 0.61% on Central Left. Similarly, Chinese is the preferred language for 2.09% of the users on Central Right, but only 1.41% on Central Left. Are there cultural reasons for the differences? Are the reasons the same for both Māori and Chinese? The outcome of an investigation into the differences might have some significance for strategies seeking to increase user engagement with these and other localised interfaces.

The language preferences by percentage of users are shown in Table 13. The Education machine is used the least and consequently has a longer history of data. The data stored in this machine dates back to November 2012. The Reserves machine is the next least used and contained data dating back to January 2013. As mentioned previously the two Central machines are next to each other inside the main library entrance. Interestingly, the Central Left machine is used by more people (approximately 700 more uses per month) and consequently stores one month less history than the Central Right machine. The shortened date range may account for the variation of Chinese and Māori-language preferences between the machines given that an increase in a particular language preference during a particular day or week would have a higher impact on a shorter date range.

Table 13: SelfCheck™ language preferences by machine

	English	Māori	Chinese	Total
Education	98.14%	1.52%	0.34%	2368
Reserve	99.42%	0.12%	0.46%	3254
Central Right	96.72%	1.20%	2.09%	3927
Central Left	97.98%	0.61%	1.41%	4263

The functional use of a machine also has a marked effect on language preference. For example, the Reserve machine sits in a room that is set up to primarily handle Course Reserves. Given that the majority of texts that are reserved pertain to courses that are delivered in English, it is reasonable to expect that the majority of students using the Reserve machine for self-issuing would prefer to use English.

4.5.2 *Engagement and perceptions of a testing group*

A small study was conducted on the SelfCheck™ machines to gain a preliminary impression of how users would react in terms of engagement and perception when using the te reo Māori interface. The testing group were observed using the interfaces both in te reo Māori and English and then they were required to complete a short questionnaire. Six students were selected from the Te Tohu Paetahi 2013 program at the University of Waikato. This program delivers teaching of te reo Māori in an immersion situation. The students of Te Tohu Paetahi attend daily 6 hour classes where the instruction they receive is delivered primarily in te reo Māori.

Language fluency and understanding was a major consideration in the selection of the students for the testing exercise. The students were selected by their kaiako (*tutor*) because their fluency and understanding of te reo Māori enabled them to complete assigned tasks far quicker than their classmates. This meant the students were able to disengage from their class to complete the one hour testing exercise. The two male and four female participants were all first year university students.

4.5.3 Methodology

The students were given a brief overview of the full research project regarding technology and the health of te reo Māori. The information for this exercise, including process and participant rights was explained in accordance with the University's Ethics Requirements. Each student was asked to self-issue books from the library using both the English and te reo Māori interfaces. Following this exercise each participant was then asked to complete a questionnaire.

4.5.4 Feedback

The following section is a summary of participants' feedback.

1. *How understandable were the screen commands in te reo Māori?*

The participants found the interfaces barely understandable. They generally agreed that a fluent speaker of te reo would understand the interfaces but it would be very likely that learners or those less fluent would struggle. One cited that kupu hou made the instruction screens more difficult to follow. The example given was **karu pūmatawai** which refers to the barcode scanning device on the machines.

2. *What were the main difficulties in using these interfaces i.e. were there new words, how correct was the use of the reo, were the instructions and options difficult to follow, why?*

The main difficulties faced arose from the kupu hou. There was a general feeling that new words like 'whakatongia' and 'karu pūmatawai' were not commonly used and therefore extra time had to be taken to think about what the words mean. Comment was also passed regarding the whakatakototanga, 'the layout of the phrase', saying the structure of the kōrero (*what is written*) is different. Feedback indicated however, that the video directions definitely helped. Overall, the general consensus was that the level of the reo might not be understandable to new learners.

3. *How did it make you feel to see your language used in this manner?*

The respondents felt a sense of pride to see te reo Māori interfaces. Some felt that this was ‘awesome’ and ‘cool’ and feedback included statements such as:

“I’m going to use the Māori option from now on, and recommend it to other people, Māori and non-Māori.”

“It was awesome to see my language used in this manner.”

“It made me feel proud.”

4. *Do you think using te reo Māori in these and similar interfaces would encourage the use of te reo Māori (written and spoken)?*

The participants all agreed that the use of te reo Māori would be encouraged. Not only would fluent users engage but the option to use the Māori-language interfaces would be helpful to those learning the language. Some were of the opinion that having the interfaces in te reo Māori would ‘draw’ people to use the machines in te reo. In terms of normalisation, one respondent commented:

“Yes. I think that the more we see it, the more we get used to it.”

5. *How would you suggest normalizing the use of these interfaces in te reo Māori so that others would be more likely to use them?*

There were suggestions that having the interfaces in te reo only and having more machines in various locations would be beneficial in terms of attracting users and perceiving these interfaces as normal. Cautions seemed to revolve around the kupu hou although much of the feedback discussed ‘simple’ and ‘basic’ Māori. One respondent suggested bracketing the ‘flash’¹⁰⁰ words which seems

¹⁰⁰ New Zealand colloquialism, similar to ‘posh’ or ‘fancy’

directed at highlighting kupu hou with a view to somehow assisting the user to understand the meaning of the word.

6. *If the interfaces were in te reo Māori (but switchable to English) how useful would this be to encouraging the use of te reo Māori?*

Default screens in te reo Māori was unanimously seen as very useful for encouraging language use and engagement on a daily basis. One suggestion included the provision of on-screen translations for various kupu hou and phrases that might be difficult to understand.

- a. *How do you think people who are not fluent in te reo Māori would react?*

The feedback was divided. Half the group thought a default to te reo screen would be good and support the normalisation in terms of seeing the language in this context and becoming familiar with its appearance and use.

Other feedback suggested it would be very difficult especially for those not fluent or familiar with te reo Māori because:

“They would not understand it because I am a Māori speaker and I didn’t understand it.”

This comment highlights the difficulty some had trying to understand the on-screen instructions.

(Following the use of the English-language interfaces)

7. *Which language interface were you more comfortable using?*

Māori 66% **English 33%**

8. *Which language interface was easier or quicker to use?*

Māori 50% **English 50%**

9. *Which language interface would you prefer to use?*

Māori 100%

English 0%

a. Please explain why ...

Although the group was split on which screen was more comfortable or quicker to use, they indicated unanimously that the preference would be to use the screens in te reo Māori. Some suggested that it would be a bit slower because they would have to think about what the instructions were meaning. One respondent stated that if they were in a real hurry they would switch to the English-language version. The group agreed they would prefer to use the te reo Māori interface because they were Māori and they were studying the language. The following comment captures the overall sentiment of the group:

“I wanted to use the Māori but I didn’t understand what the machine was asking me to do.”

10. *Do you have any final comments or thoughts?*

"It would be great if these type of machines are located in different areas, and to be used more by Māori people."

"Just use our language right, don't abuse it!!"

"If you are going to translate the language please translate all aspects even the OK as Āe." (*referring to a command button – OK*)

"If you are going to translate it make it understandable."

"This was cool! I didn't even know that there was an option to use te reo Māori."

General - These comments were made by the group during the testing:

"WhakaMāori i te mihini 'returns'." (*translate the machine that is used to self-return books*).

"The time-lapse should auto-switch to Māori" (currently, after a period of non-use, the machine reverts to the English language-screens).

"The check-out receipts are in te reo Māori." (When the screens are used in te reo Māori, the receipts are printed in te reo Māori - see Figure 35).

Māori version	English version
Te Pūnaha 3M SelfCheck™.	University of Waikato Central Library / Te Whare Pukapuka
Ingoa o te kiritaki: Paora James Mato Te ID o te kiritaki: 1001010455043	Customer name: Paora James Mato Customer ID: 1001010455043
Ingoa: Pukenga korero = a journal of Māori studies. ID: 0001007890989 Te rā hei whakahoki mai: Paraire, 21 Pipiri 2013	Title: Pukenga korero = a journal of Māori studies. ID: 0001007890989 Due: 21/06/2013
Ingoa: Pukenga korero = a journal of Māori studies. ID: 0001008470765 Te rā hei whakahoki mai: Paraire, 21 Pipiri 2013	Title: Pukenga korero = a journal of Māori studies. ID: 0001008470765 Due: 21/06/2013
Ingoa: Pukenga korero = a journal of Māori studies. ID: 0001006884389 Te rā hei whakahoki mai: Paraire, 21 Pipiri 2013	Title: Pukenga korero = a journal of Māori studies. ID: 0001006884389 Due: 21/06/2013
Ngā taonga katoa: 3 7/06/2013 9:33:18 a.m. Kua whakaaetia te haringa atu: 9 Nga inoi kia puritia: 0 Kua reri mō te tiki mai: 0	Total items: 3 07/06/2013 09:31 Checked out: 9 Hold requests: 0 Ready for pickup: 0
Ngā mihi ki a koe mō i whakamahi Te Pūnaha 3M SelfCheck™.	All items issued are subject to recall. Fines for overdue recalls are \$3.00 per day.
	Have a great day!

Figure 35: SelfCheck receipt – te reo Māori & English

4.5.5 *Summary*

Most of the testing group were unaware of the te reo Māori option on the self-issue machines highlighting the importance of effective promotion. They were quite excited to see the language used in this way and very proud to see te reo Māori in a technological environment. All of them struggled to come to grips with kupu hou. This seems to be a common difficulty when using translated interfaces (Mato et al, 2012). The group were adamant that they would use the te reo Māori screens and recommend their use to others, both Māori and non-Māori, even though they reported having to take extra time to determine what the on-screen instructions meant. The general consensus, however, indicates that the English language version would be used when the users were in a hurry.

There was some interesting feedback regarding default settings and machine location. The responses were divided regarding the default to Māori option. Some were wary that the difficulties with kupu hou would hinder fluent speakers of te reo and learners of the language would struggle with the screen instructions. Others believed the use of the language would be encouraged to the point where self-issuing in te reo Māori would become 'normal'. Some also felt this normalising would also occur from providing more self-issuing machines so that people would get used to seeing te reo Māori on the screens.

There were some suggestions about an awareness campaign regarding the use of te reo Māori on the SelfCheck™ screens. The language preference data could then be examined to determine what the effect on engagement has been due to an awareness campaign. Methods to collect feedback, especially in terms of timing, would need to be designed prior to beginning the exercise and the timing of the campaign would need some thought; during Māori Language Week, for instance.

Another exercise with a focus on the Māori-language screens for searching the library catalogues might provide further insight. Given that these screens are available over the university website, a wider sample can be used. The feedback would then be more reflective of a wider university audience.

The feedback is clear that translated interfaces need to be easier to use and developed with the user in mind. Thought should be directed at strategies that will assist users to overcome the difficulties they face when presented with kupu hou, or new words that are used in unfamiliar ways. The ability for users to somehow highlight the word or phrase that is causing difficulty, and then receive either a synonym in the same language and/or an English translation is one early idea.

4.6 How Usable is a Smartphone with a Māori-language Interface?

A smartphone, launched by Two Degrees Mobile Limited in 2011, provides a Māori-language interface option. An informal study indicated users will engage using the Māori-language interface but will switch to English when they consider the navigation is unnecessarily prolonged or difficult. These users reported high levels of language-switching because, while they wanted to engage using te reo Māori, they found it easier to use the English-language interface especially when they need to complete tasks quickly. This section reports on testing that was undertaken, following the informal study, to gauge the usability of the Māori-language interface.

This section uses excerpts and summaries from a paper published in MAI Journal and referenced as:

Mato, P., Keegan, TT., & Naera, L. (2015). How usable is a smartphone with a Māori-language interface? *Mai Journal* 5(1), 17-32.
doi: 10.20507/MAIJournal.2016.5.1.2

I acknowledge and thank Dr Te Taka Keegan and Leilani Naera (University of Waikato) for their substantive collaboration during this project.

4.6.1 Background

Two Degrees Mobile Limited, better known in New Zealand as 2Degrees, was launched in 2009 and is one of New Zealand's newest mobile telecommunications companies. The company is 60% owned by Trilogy International Partners - a Seattle-based private telecommunications company providing wireless communication services through three operating companies in New Zealand, Bolivia, and the Dominican Republic. Trilogy acquired 26 percent of a mobile wireless operator in New Zealand, then called New Zealand Communications Limited, in June 2008 and renamed the company Two Degrees Mobile Limited (Trilogy International Partners, 2014).

Te Huarahi Tika Trust is a charitable trust incorporated in 2000, in consultation with the New Zealand Government, to enable Māori a preferential right of purchase over certain radio frequencies (primarily third generation spectrum (3G)) being auctioned by the Government at that time. The Trust lobbied the government to develop an appropriate regulatory framework and at the same time sought joint venture partners with which to work (Te Huarahi Tika Trust, 2013). This led to the establishment of New Zealand's third mobile network - Two Degrees Mobile Ltd. Te Huarahi Tika Trust established Hautaki Limited to be the corporate trustee for Hautaki Trust which was established as the entity that would have the exclusive opportunity to purchase management rights over certain radio frequencies and pursue the commercial development of these rights on behalf of Māori (see Figure 36). Te Huarahi Tika Trust has increased its shareholding in 2Degrees from 10.3% to 11% (Pānui, 2011; Te Huarahi Tika Trust, 2013).

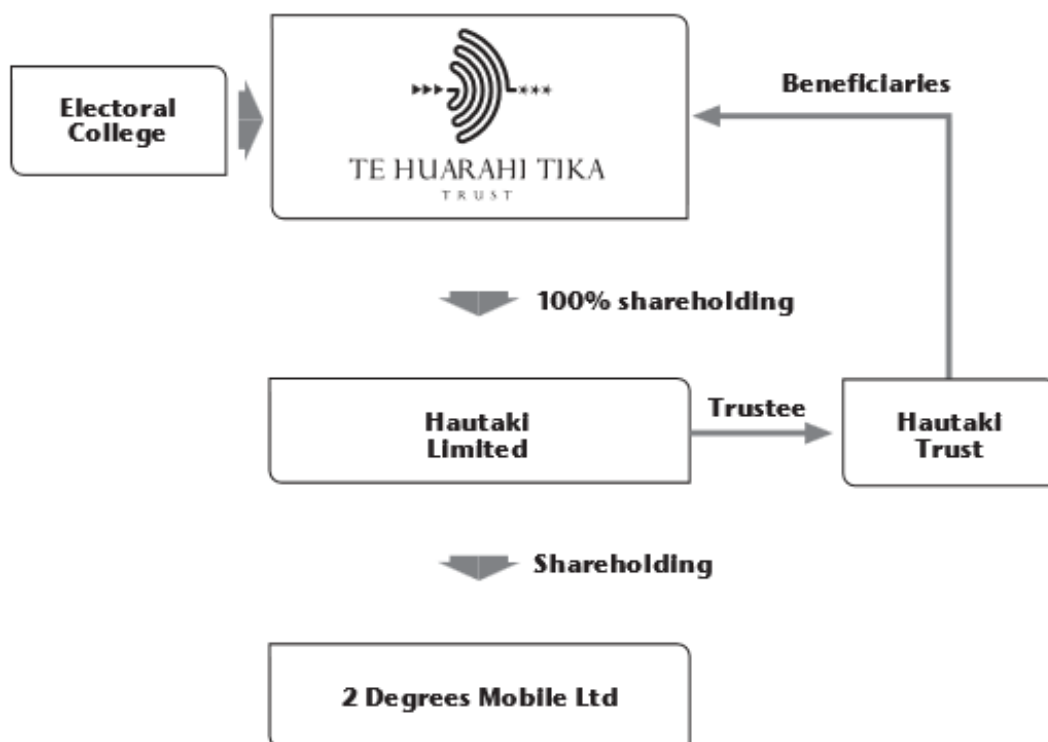


Figure 36: Organisational structure of Te Huarahi Tika Trust¹⁰¹

Two Degrees Mobile Limited launched the first smartphone usable in te reo Māori in November 2011. The Māori-language interface is one language option on the IDEOS X3 smartphone (see Figure 37) and was developed in conjunction with Huawei, a leading Chinese-based provider of telecommunication infrastructure.

¹⁰¹ Source: *Annual Report*, by Te Huarahi Tika Trust, 2011, p.9, retrieved from <http://www.thtt.co.nz/publications/Annual-Report-2011.pdf>

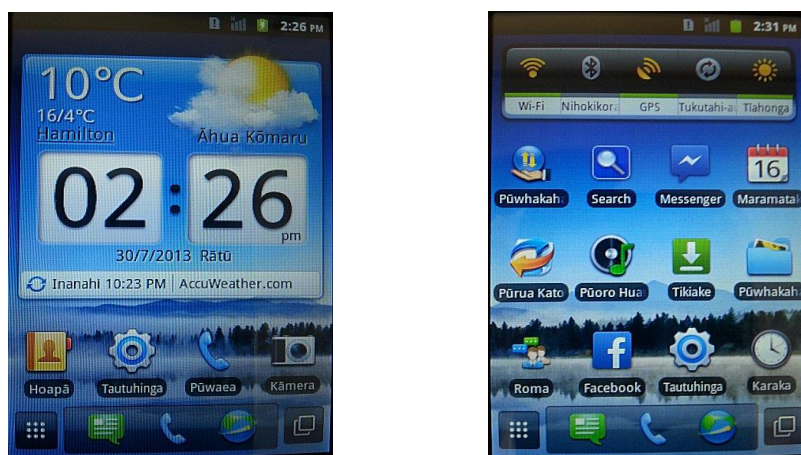


Figure 37: Sample screenshots of the Māori-language interface of the IDEOS X3

The IDEOS X3 smartphone was launched in conjunction with *Hei rere mai - so you can fly*; a program intended to increase participation by Māori in the telecommunications industry¹⁰². The combined launch fulfils part of the Hautaki Trust vision, as co-founders of 2Degrees, to make te reo Māori available in today's technology (Te Huarahi Tika Trust, 2013). The Trust state that engaging Maori in the telecommunications industry and ensuring that the Maori culture and language were embraced by modern information and communications technology are primary objectives (Two Degrees Mobile Limited, 2014).

4.6.2 *Pilot Study*

A short informal study was undertaken in 2014 to determine whether the Māori-language interface on the 2 Degrees smartphone was a practicable option for Māori language speakers. The smartphone was independently used as a primary phone by four Māori-literate testers for between five to seven days each. Their comments indicated high levels of language-switching and some frustration as new words and often unfamiliar use of words were encountered. As a result, none remained fully engaged with the Māori-language interface preferring to switch to the English-

¹⁰² See <https://www.2degreesmobile.co.nz/company/news-and-media-releases/hei-rere-mai-maori-careers-in-telecommunications/>

language version especially when wanting to quickly complete the task at hand. Given the informal nature of this testing, we clearly needed a more formal analysis to determine the usability of the Māori-language interface.

4.6.3 Usability Study

A usability study was undertaken, using the Huawei smartphone, to substantiate the feedback from the pilot study. The size of the usability study was impacted by the short timeframe (a twelve week funding period) and by limited resources (one phone and one research facilitator). The sample size of twelve participants is reflective of these constraints of time and resource.

Usability studies refer to the evaluation of a product or service by assessment through a usability test. Generally, such tests focus on measuring a product's capacity to meet its intended purpose. Usability experts also expect the product to be quick to use, relatively error-free and able to be used or navigated with some level of intuition (Johnson, 2008; Krug, 2014). Simplistically, a person should be able to use the product to accomplish what is expected without the experience being more trouble than it is worth (Krug, 2014, p.9). Therefore, our study aimed to determine whether the phone's Māori-language interface could easily and efficiently complete tasks that were considered to be standard on a smartphone.

Participants were asked to note the ease of use, the speed and efficiency of task completion and the existence of any mistakes and flaws in terms of the language used. The participants were also asked to rate their experience and share their perceptions regarding the effectiveness and usefulness of a Māori-language interface on a smartphone. We were interested in how well the interface provided for intuitive use – were users able to find their way around the menus and icons relatively easily and quickly? In addition, how might the Māori-language interface impact on language use and ongoing language health?

The study objectives were:

1. to determine whether tasks could be completed successfully,
2. to determine whether tasks could be completed quickly and easily,
3. to determine whether navigation could be done intuitively,
4. to verify the quality of the translations,
5. to determine levels of participant satisfaction and perception, and
6. to identify barriers to the Māori-language interface being the preferred option.

4.4.1.1 Participants

Twelve participants were chosen based primarily on their language fluency and understanding of te reo Māori. They all had some competence and confidence with the use of smartphones and similar technologies but none had previously used technologies with Māori-language interfaces. The ages, gender and language fluency of the participants are shown in Table 14 and Table 15.

Table 14: Age and gender of participants

	18-25	25-35	35+
Female	3	2	2
Male	3	1	1

Table 15: Māori-language fluency levels of participants

Intermediate	3
Fluent or first language	9

4.5.1.1 Methodology

The purpose and structure of this usability study was explained to the participants and the questionnaire was discussed. A brief overview of the wider research project was also provided which investigates the awareness and perception of Māori-

language use in selected contemporary technologies as discussed in the previous sections of this chapter. The participants were set three tasks using the smartphone Māori-language interface:

- Send and receive a text message
- Connect to and search the internet
- Connect to Facebook and write a post

Following the completion of these tasks, participants were asked to use the smartphone to complete their own choice of tasks using both the Māori-language and the English-language interfaces. Finally, the participants were asked to provide feedback by completing a short questionnaire

4.6.4 Results

The following is an overview of the participant feedback gathered from the completed questionnaires.

1. How understandable were the screen commands in te reo Māori?

Seventy-five percent of the participants reported some difficulty interpreting the screen commands - especially during the initial part of the testing. Four testers found the icons and graphics to be hugely beneficial for understanding what the different commands were for and two others found the commands understandable and the phone easier to comprehend after some prolonged use.

2. What were the main difficulties in using these interfaces and why?

Almost all of the respondents struggled with unfamiliar words and found tasks took a bit longer to complete due to the extra time required to decipher what the words and messages meant and then “connect the word to the image and action for the interface”. Some of the longer words were not fully visible on the screen; their resulting abbreviated forms added to the confusion or were not well-received. The example given referred to the shortening of days of the week to M/T/W. It is not

clear whether or not these particular letters abbreviate the transliterated Māori word or the English word since they are the same for these three days. Participants also reported the use of kupu in the wrong context and some words may have been just a bit too literal. One example of wrong context was “e uta ana”, which means to load (a burden) rather than to retrieve information or run (load) an application. Another example was nihokikorangi for Bluetooth. Niho translates to English as ‘teeth’ and kikorangi translates as the colour ‘blue’, but it was felt a better word could have been used (although no alternative was suggested). There may be a case for such words to remain untranslated in this instance, even though feedback from other projects suggests users of those particular technologies prefer an 'all or nothing' approach to translations of the interfaces.

3. How did it make you feel to see your language used in this manner?

All the participants agreed that the use of te reo Māori in a smartphone was a positive move that promoted the language and kept it visible on contemporary technologies. Two of the participants were more cautious and advocated keeping the integrity of the kupu and ensuring the translations are accurate and easy to understand. In general, the responses indicated the participants were pleased and proud to see this blending of te reo Māori and technology and considered the use of the reo in this manner, on day-to-day technologies, would strengthen and support the ongoing use and health of the language.

4. Do you think te reo Māori in these and similar interfaces would encourage the use of te reo Māori?

Most of the participants (eight of the twelve) agreed that translated interfaces, used more often by many people on a regular basis, would definitely encourage the use of te reo Māori. A quarter of the respondents were not convinced citing the difficulty with new words and unclear translation as distinct barriers to the extended use of the translated technologies. Feedback also indicated that although users might choose to receive or view their communications using te reo Māori, it was felt that further engagement would most likely occur in English.

Examples of other feedback include:

“Āe, pēnā ka kite atu a tātou rangatahi he wāhi mō te reo i te ao hangarau ka rarata pea ki te kōrero ki waho i te akomanga, ā, he reo e ora ana.”

(Yes, if our youth see that there is a place for the reo in the technology world they may just get used to speaking the reo outside of the classroom, from there our language is living)¹⁰³.

“At this moment I feel it would not encourage many as there are a lot [of]¹⁰⁴ Māori words [that]¹⁰⁴ need to be spelled in full to give an understanding. Technology users find [it]¹⁰⁴ easier to use a smaller word.”

5. How would you suggest normalising the use of these interfaces in te reo Māori so that others would be more likely to use them?

Some of the participants regarded promotion of the language using online technology, associated applications such as e-books and Māori-language television shows as key to normalisation. The majority of the feedback (seven of the twelve) were quite clear that simplifying the words or making them more understandable somehow would definitely help normalise the use of translated interfaces. One person suggested the Māori-language interface should be available on all phones and one other suggested raising the general awareness that this type of product was available.

6. If the interface were in te reo Māori (but switchable to English) how useful would this be to encouraging the use of te reo Māori?

The participants were evenly split on whether or not the translated interface would encourage the use of te reo Māori. Half thought the ease and quickness associated with interacting with the English-language interface would discourage users from using the Māori-language version. Most of the feedback mentioned language fluency as a compelling factor and most of the consensus hinged around prolonged

¹⁰³ Translations were supplied by Leilani Naera

¹⁰⁴ The brackets indicate additions that are not part of the original feedback

engagement being underpinned by higher levels of language capability. Two people thought the interface in te reo Māori would benefit those aiming to learn the language and one believed the interface should only be available in te reo and supported by the use of icons.

7. Which language interface were you more comfortable using?

8. Which language interface was quicker or easier to use?

9. Which language interface would you prefer to use?

Māori	English
2	10
0	12
9	3

Participants found that the use of the Māori-language interface took a little too long to complete tasks. The existing familiarity with English-language interfaces and having to take time to understand the use of new and unfamiliar words (in Māori) meant that all were far more comfortable using the English-language version. However, in spite of the difficulties of using the phone in te reo Māori, most of the users (9 of 12) reported they would still prefer to engage using the Māori-language interface. One might assume that the three participants who preferred to use the English-language interface were the three who had an intermediate level of fluency, however, fluency level wasn't indicated as part of Question 9.

10. The final question asked for further comments.

Most of the feedback indicated pleasure and pride in seeing the Māori language used in this manner and in this type of environment. A quarter of the responses suggested this and other similar interfaces would promote the learning and use of the language. Another quarter reported levels of discomfort with the way some words were used out of context, the existence of some English words on the Māori-language interface, poor use of transliterations and the abbreviating of some words. One example of poor abbreviation features days of the week – Rāhina shortened to ‘Hī’ and Rātū shortened to ‘Tū’. An example given of poor context was atahanga (*image*) where whakaahua was thought to be a better, more familiar translation.

4.6.5 *Discussion*

Although the size of this study was quite small, much of the feedback was similar to other studies with a focus on Māori-language interfaces¹⁰⁵. Prior to the usability study, the participants were unaware of the Māori-language option for the smartphone interface and expressed some surprise to see te reo Māori in this type of environment. They were excited and proud to see te reo Māori used on this technology and derived some pleasure at being able to interact with the technology in their own language.

Difficulties were reported with unfamiliar words and the unfamiliar use of words. Other studies conducted on Māori-language interfaces for applications¹⁰⁵ reported similar issues with new words, words used in different contexts and the creation of words that were literal translations but didn't quite convey an accurate meaning (as in the Bluetooth example in Question 2). In spite of those difficulties, most of the respondents would prefer to engage with the Māori-language interface even though they reported having to take extra time to determine what some of the on-screen menus, icons and instructions meant. The over-riding consensus of the users, however, is that they would revert to the English-language versions when tasks needed to be finished quickly.

Whether or not the use of translated interfaces would assist learners of the language and encourage ongoing language use generated some thoughtful feedback. The responses were divided. Some were wary that the difficulties understanding words and instructions would hinder fluent speakers of te reo Māori and learners of the

¹⁰⁵ See Section 4.2, Section 4.3, Section 4.4 and Section 4.5

language would struggle. Others believed the extended use of the language within the technology would enable users to come to grips with the translated interfaces in a relatively short period of time. Some felt that the prolonged use of Māori in technology would encourage others to communicate in a similar fashion to the point where the use of te reo Māori in smartphone technology would eventually be perceived as a ‘normal’ occurrence.

Nearly half of the participants expressed some discomfort with the translations. They cited new words, unfamiliar use of words, poor translation and arbitrary truncation as points of concern. Some thought the use of literal translations did not quite capture the essence or give a clear description of the action. A small percentage also expressed a view that the translation should be complete and the Māori-language interface should not contain English words.

Returning to the objectives of the study:

1. It is evident that the assigned tasks were able to be completed by all participants,
2. Although the tasks were completed, their completion was neither easy nor quick. The respondents reported difficulties using the Māori-language interface and needed extra time to decipher screen instructions and the meanings of some icons,
3. The ease of navigation was impacted by the discomfort experienced by the translations. Although some of the icons were recognisable (from English-language interfaces), participants reported having to take time to be ensure they were interpreting the screen directions accurately,
4. All of the participants commented on the quality of translation. Some examples were given that relate to words used in ways that were contextually inaccurate, such as “e uta ana” which means to load a burden rather than to run (or load) information or an application and the use of

nihokikorangi (niho meaning *tooth* or *teeth* and kikorangi meaning *blue*) for bluetooth.

5. In general the participants were pleased to encounter the use of te reo Māori on this type of technology but were less than satisfied with the experience citing the extra time needed to appreciate what was displayed on the screen, the lack of intuitive navigation and being unable to quickly complete standard tasks as a result.
6. The main barriers to the Māori-language interface being the preferred option for the participants pointed to difficulties with translations that were unfamiliar, contextually inaccurate or arbitrarily truncated. All the participants agreed that an existing familiarity with English-language versions of smartphone interfaces impacted on how easily the Māori-language version was to use with some suggestion that this might be somewhat alleviated over time by extended use in te reo Māori.

This short usability study regarding the smartphone translated interface has validated the feedback from the initial pilot group and is consistent with feedback regarding translated interfaces for other applications and technologies.

4.7 Conclusions

The feedback from participants regarding translated application interfaces was generally consistent in a number of areas:

- Users were previously unaware of the existence of a Māori-language interface and were quite pleased and proud to encounter their language within these technologies. Overall, the initial reactions to seeing the technology able to be used in te reo Māori was positive.
- After engagement with the interfaces however, participants were less than satisfied with the experience. Although there was a fairly clear preference to interact using the Māori-language interfaces, users unanimously agreed they experienced moments of frustration as they tried to decipher accurate meaning from the kupu (*words*) that were chosen to identify particular actions, icons and menu items.
- The responses consistently mention struggling with new words, unfamiliar uses of words and translations out of context. Most thought fluent speakers of te reo would experience some difficulties with the Māori-language interface while learners of the language would definitely struggle.
- The participants of the studies would generally prefer to remain engaged with the interfaces using te reo Māori. However, they were also adamant that they would have no hesitation in switching back to the English language versions if progress became difficult or if they were in a hurry to complete the task at hand.

The feedback was clear that when participants became frustrated with the new terminologies, or were in a hurry, they would switch to the English-language interfaces. In this sense, language switching within technology appears to be no different to the language switching within minority language communities. It is normal to revert to processes and methods that have already produced desired

results in an expedient and efficient manner and the participants in the studies were more than ready to do so. However, some consideration should be given to the fact that most of our participants were unaware these interfaces existed, and that to encounter te reo Māori in new domains might raise enough question marks to distract from the task at hand and hinder the use of the technology.

The Māori-language interfaces were new to most of the participants and it was apparent that the unfamiliar interface terminology and presentation was an impediment to expedient use. One might also consider that there might be something wrong with the translations or that te reo Māori does not sit well in technological environments. However, given that all the participants were already experienced in interacting with the selected technologies, there may be a case that the difficulties reported might arise from a previous competence in using the technologies in the English language. This line of thought became clearer following the usability testing of the smartphone. Feedback from this testing group indicated that the assigned tasks were completed and that those who experienced prolonged use of the smartphone began to gain some proficiency in a very short time. It might therefore be more beneficial to highlight and understand the reported difficulties – aiming instead for a commitment to familiarity and ease of use through prolonged engagement rather than direct comparisons where the minority language is already in a deficit position. It might also be useful to compare feedback from users of interfaces that are available in other minority languages – at the very least to see what strategies may have been devised to overcome similar difficulties experienced by users of those languages.

The Indigenous Languages and Technology (ILAT) discussion forum¹⁰⁶ notes that exposure to contemporary technologies in a dominant language could impede the

¹⁰⁶ See: <http://www.u.arizona.edu/~cashcash/ILAT.html>

subsequent use of those technologies in a minority language (Bischoff, 2011, p.6). Furthermore, Jancewicz & MacKenzie (2002) refer to a pre-requisite of some level of literacy in a major language when initially engaging with contemporary technologies (p.90) inferring that it might already be necessary to have a prior competence in a major language before attempting to engage with the technology using a minority language. This seems very ‘catch 22’, however, strategies seeking to promote engagement with contemporary technologies using minority languages should be cognisant of such issues.

The difficulties experienced by the participants in our studies, while valid (especially at the time) and likely to be underpinned by their existing competence in English, may also have been somewhat exaggerated by a sudden and short exposure to the technologies in another language. Longitudinal studies for some of these interfaces might confirm this hypothesis. It is also fairly clear that more time spent engaging with the interfaces using te reo would make the tasks easier and quicker to accomplish. Even so, clumsy translations would still be distracting and annoying. Further investigations might, at the very least, provide a greater understanding of the issues raised by our studies. Subsequently, the pertinent outcomes could then inform strategies that can be employed to alleviate the reported difficulties by users and to positively promote Māori-language interfaces resulting in higher levels of engagement.

There was no clear evidence that any of the interfaces were translated using standardised methods and terminology. A useful exercise might be to gauge whether or not the use of vocabulary and syntax is used consistently within each of the technologies. This might present an opportunity for an organisation such as Te Taura Whiri i te reo Māori to enact a leadership role in terms of guidance and support – if they don't already. One advantage of that would be a consistent presentation of the language and a design approach that is uniformly user-centric.

5

Māori-language Microblogging

The pervasion of global technologies and social media has broadened the spaces where major languages can impact minority language speakers. The wholesale uptake of social technologies by the general population means the ability to be globally connected is available in the homes and other spaces that were once private. Minority language speakers are compelled to use a major language in these mediums to ensure their broadcasts are widely disseminated and easily accessible. This changing of language preference further marginalises already-endangered languages in an environment that is able to affect and be affected by huge sections of the population. Paradoxically, many minority language groups are embracing the capability and influence of mass media, social media and web-based technologies as they seek to redress the decline of their own languages. Indications are that social media can also be used to benefit these languages (Emmanouilidou, 2014, p.1). It has been observed that, for Māori, these technologies offer a range of opportunities employable by strategies seeking to increase the situations and the number of platforms where the language is used.

The impact of social media on languages is undeniable and often understated. Social media platforms have arguably become the largest vehicle for the wholesale evolution of language. Consider the shift where nouns such as friend and troll are now used more widely as verbs. For instance, to ‘friend’ someone, as in Facebook, is to form an online connection while to ‘troll’ someone is to make provocative and often offensive comments within online conversations or forums. These may be innocuous examples but, as noted by Oxford Dictionaries (2015), “you no longer have to be published through traditional avenues to bring word trends to the attention of the masses (p.2)” and “with forums, Twitter, Facebook, and other social media channels offering instant interaction with wide audiences, it’s never been easier to help a word gain traction from your armchair (p.2)”. With this in mind,

what are the opportunities for minority languages? How does one escalate ‘word trends’ in these media to involve whole languages? Is there a niche where minority languages can have enough visibility to ‘gain traction’? Creating online forums using the connectivity of social media platforms on the internet would offer speakers of minority languages increased avenues of engagement and a greater chance of language survival through continuous use.

Social communication is becoming increasingly digital. The constant barrage of the new mediums like Facebook, texting, Twitter, Instagram and Snapchat ushers in a new era of sharing where what was once reserved for private arenas is now more and more likely to be encountered in public domains (Cross, 2011, p.1,4; FEL, 2012, p.1). The speed and numbers with which the public has taken to these new media forms has been described as astonishing (Cross, 2011, p.25). The internet has empowered ordinary people to produce and distribute diverse streams of news and information (O’Connor, 2012, p.14; Jacobs, 2004, p.1). The unprecedented power and attraction of social networking platforms has enabled a global online populace, fuelled by technology and the new behaviours it underpins, to dramatically effect unprecedented levels of social change (Cross, 2011, p.14; Jacobs, 2004, p.1; O’Connor, 2012, p.20). As people connect online they revel in the ease and spontaneity of the interactions and self-expression that online social media makes possible (Garber, 2012, p.3; Lawson, 2009, p.2). Unfortunately, the blurring of lines between public and private is significant in social media – putting pressure on the private, intimate, oral domains that have traditionally been the base of endangered languages (Cross, 2011, p.5; FEL, 2012, p.1). “Modern technology is often blamed for homogenising our ever-shrinking world, particularly when it comes to cultures and customs” (Lee, 2011, p.1). The widespread and often carefree dissemination of ideas and values - actions frequently associated with globalised social media - has become synonymous with the weakening of traditional cultural and linguistic ties and their replacement by loose connections to consumerism and capitalism and the gratification of the here and now (FEL, 2012, p.1; O’Connor, 2012, p. 14;). What does this mean for minority languages? What life changes will be the result as

people learn new ways of experiencing and exchanging information – and what will be considered the new normal? (Cross, 2011, p.16, p.20; FEL, 2012, p.1).

Indigenous and minority language groups are increasingly embracing the power of web-based technology as they struggle to ensure the continued health and survival of their own languages. Māori are no exception. Initiatives involving the Microsoft Corporation, Moodle and Google Inc. have resulted in a range of localized interfaces now available in the Māori language (discussed in Chapter 4). Additionally, the Māori language has been made available on mobile devices and physical self-service machines (discussed in Chapter 4). The use of te reo Māori is also evident in social media. Given the popularity of social media and the importance of social networks both online and off-line, it seems likely that there would be benefits to endangered languages in embracing such environments, targeting and engaging critical masses of language speakers to create vibrant online language communities.

This chapter reports on research that investigated microblogging¹⁰⁷ using te reo Māori and the development of online Māori-language communities using Twitter. The investigation was aided significantly by the data capture and trending functionality of the Indigenous Tweets¹⁰⁸ website. Much of this research has been previously published or presented and is referenced as follows:

Keegan, T.T., Mato, P., & Ruru, S. (2015). USING TWITTER IN AN INDIGENOUS LANGUAGE: An analysis of te reo Māori tweets. *AlterNative: An International Journal of Indigenous Peoples*. 11(1) 59-75.

Mato, P., & Keegan, T. T. (2013). Indigenous Tweeting for Language Survival: The Māori-Language Profile. *International Journal of Technology and Inclusive Education* 2(2): 184-191.

¹⁰⁷ Blogs and microblogs are explained in Section 5.1.1

¹⁰⁸ See: www.indigenoustweets.com

Mato, P., & Keegan, T. T. (2013). The use of blogging and micro-blogging to develop online Māori-language communities: Proposed research. An extended abstract presented at the Canada International Conference on Education. Held at the University of Toronto, Toronto, Ontario, Canada on 24-26 June 2013.

While using the findings in this research I acknowledge the significant contributions of the other researchers and writers in these particular projects:

Dr. Te Taka Keegan, Senior Lecturer in the Faculty of Computing and Mathematical Sciences at the University of Waikato, Hamilton, New Zealand, and,

Stacey Ruru, Research Intern in the Department of Computer Science at the University of Waikato, Hamilton, New Zealand.

For his substantial collaborative input I also acknowledge and sincerely thank:

Professor Kevin Scannell of the Department of Mathematics and Computer Science at the University of Saint Louis, Missouri, USA.

The outcomes from the investigations are presented firstly as a statistical overview of indigenous tweets and the Māori-language profile, and, secondly, as an analysis of Māori-language tweeting.

It is evident that the development of active indigenous and minority language communities online is underpinned by the ease in which the speakers are able to find each other amidst the sheer volume of transmissions are that posted in the major languages that dominate social media. It is also evident for te reo Māori that the bulk of Māori-language tweets arise from initiatives that seek to disseminate translated information rather than elicit interaction from other users. Whether or not this could be deemed suitable for developing online language communities is yet to be determined. However, individuals were identified who were tweeting in te reo

Māori with the aim of keeping the language visible in this environment and encouraging other users to interact and converse primarily using the Māori language. Even so, it appears that the health and longevity of such interactions and the development of an online Māori-language community is entirely dependent on the generation and maintenance of ‘attractions’ or motivations that encourage Māori-language users to remain engaged in this medium. Event-based tweeting was also evident. National Māori-themed events impacted Māori-language tweets but it was interesting to observe that different types of events influenced tweeting differently. For instance, certain events appeared to encourage new tweeters resulting in more Māori tweets. Other events resulted in increased Māori tweeting without a noticeable increase in the number of tweeters. It is possible that the different events in some way favoured differing levels of language fluency. The relatively large number of users who chose to follow rather than engage was also notable. Strategies aimed at shifting this group to participate in the exchanges would need to understand why people choose to watch proceedings without engaging directly, and then determine what would be required to motivate followers to engage with the conversations.

5.1.1 Blogging and micro-blogging

A blog basically refers to writings that are similar to journal or diary entries and are available and accessible via the World Wide Web (Enzer, 2011, p.1; Rowse, 2005, p.1; WordPress, n.d., p.1). The word itself is an abbreviated term for a web log (i.e. weB LOG). Blogging, the act of posting a blog, has been described as “writing out loud” and is essentially like a written conversation, arranged chronologically, with the more recent additions featuring most prominently (Cross, 2011, p.30; Enzer, 2011, p.1). Cross (2011) describes blogging as “more free-form, more accident-prone, less formal, more alive (p.30)”. Simplistically, blogging provides a forum where people can post their own messages, read other peoples’ messages, and share and comment on messages and conversations whenever they want.

Blogging is often seen as a direct challenge to contemporary journalism (Cross, 2011, p. 14; Jacobs, 2004, p.1). Jacobs (2004, p.2) observes that “In the 21st century,

access to information isn't the monopoly of people 'who buy ink by the barrel,' as Mark Twain wrote. Everybody's a player". Cross (2011, p.31) adds:

The blog has, in effect, returned public conversation to the people and re-established the public square, opening up the world of information to everyone. And, crucially, the blog has given writers an audience, one that talks back.

The breadth of access and sharing and the immediacy that blogs and the Internet make possible are generating new levels of awareness and fostering a new sense of community; enabling ordinary people to become fact checkers, analysts, critics and commentators (Cross, 2011, p.7; Jacobs, 2004, p.1:2009, p.1). A further drawcard is that there are no tests or degrees required to become a blogger - to start your own blog, you just have to find the appropriate website and open up a free account (Cross, 2011, p.39).

Micro-blogs are basically short blogs. They differ from traditional blogs in that they are smaller in content - typically containing shorter sentences, individual images or links to other stories, images or videos. Because of their brevity, microblogs have become an important source of news items and real-time updates since they are able to be posted quickly, reaching audiences in seconds (André, Bernstein, & Luther, 2012, p.1; Kaplan & Haenlein, 2011, pp.1,2; Sreeja & Narhadma, 2016, p.1). Microblogging has revolutionised the way information is consumed. People can act as censors or sources of information – able to influence, or even cause, media coverage (Kaplan & Haenlein, 2011, pp.1,2; Sreeja & Narhadma, 2016, p.1). Sreeja and Narhadma (2016) declare:

People now share what they observe in their surroundings, information about events and their opinions about topics from a wide range of fields. Moreover, these services store metadata from these posts such as location and time. Aggregated analysis of this data includes different dimensions like space,

time, theme, sentiment, network structure etc., and gives researchers an opportunity to understand social perceptions of people in the context of certain events of interest” (p.1).

The analysis functionality used to retrieve the data that is discussed in Section 5.4.

5.1.2 Twitter

Twitter is a microblogging website¹⁰⁹ that was founded in 2006 by a small group that included current Twitter CEO Jack Dorsey. The website was created as a forum where users could quickly and easily share information. Microblogging means the messages that members send to each other are quite short. In Twitter these messages are known as ‘tweets’ and can be up to 140 characters long (including hyperlinks¹¹⁰ and urls¹¹¹). Tweets are posted by ‘tweeters’, are public and can normally be seen on the tweeter’s homepage by anyone including non-members of Twitter. Addressed messages are public tweets that begin with the ‘@’ symbol followed by a username, for example @dorsey, to ensure that the public tweet is also posted into the Twitter homepage belonging to the user registered as ‘dorsey’. Members are also able to ensure that tweets from particular users are posted to their own folders or homepage – this is known as ‘following’. A member may choose to follow another tweeter for various reasons and may do so for as many tweeters as they wish. Once followed, the tweets on a member’s home page are able to be viewed by all their followers. However, tweeters who are being followed by others may also choose to accept followers (but this is rarely done). Privacy protocols can then be set to make one’s tweets only visible to the members who have been accepted as followers - this is quite rare also. One significant benefit of following is the control of content and quality that one is able to have over the amount and types of tweets

¹⁰⁹ See: <https://twitter.com>

¹¹⁰ Hyperlinks appear as images or underlined words and/or phrases and will connect the user to another webpage

¹¹¹ Uniform Resource Locator (url) is a webpage address e.g. www.twitter.com

that they see - the simple rule of thumb being ‘If you don’t like what you are reading, stop following those tweets’ (Jacobs, 2009, p.1; Lawson, 2009, p.2).

Private tweets can occur when a user privately tweets another user - this message will not be shown on either home page. Tweets are also able to be forwarded without amendment. This is known as ‘Retweeting’ and these tweets are easily identified by a Retweeted Message banner that includes the username of the person who is retweeting. Hashtags (#) are used to categorise messages, trace topic threads and denote specific events. For instance, including #olympicgold in a message would relate it to all other tweets with the same hashtag. Twitter also has some useful search functions. Members are able to search for specific phrases, ideas or keywords to see what others are saying about the topic. Twitter also has a feature called trending topics which lists the ten most popular phrases or keywords that are being discussed. The list is refreshed regularly and the topics reflect what people are most interested in at that particular moment. Tweets can also include links to other websites, such as YouTube and Facebook, allowing users to share video, photos, podcasts, news items and other lengthier excerpts. Another feature of the Twitter platform is that it is language-agnostic; messages can be sent in any language scripted in the Unicode Standard¹¹². Figure 38, a screenshot taken from the Indigenous Tweets website, is an example of this.

¹¹² See: Unicode.org

tweets from a mobile device¹¹³, effectively keeping people connected on the move while reinforcing the opportunities for real-time commentary.

5.2 Indigenous language tweeting

Indigenous language tweeting as part of this research simply refers to the use of the Twitter platform to post messages that are written in an indigenous language. This research studied the incidence of tweeting in selected indigenous languages and sought to identify some of the issues that might arise from the development of online Māori-language communities using Twitter. Much of the early data was gathered from the Indigenous Tweets website which collates, groups and provides summary statistics for tweets of selected indigenous languages. We are also thankful for the raw data that was painstakingly retrieved and shared by Professor Kevin Scannell in the form of numbers of tweets and tweeters over specific periods and the location-specific and conversation-specific tweeting occurring in New Zealand. Much of that data was then further analysed by Dr Te Taka Keegan. The resulting information is discussed in Section 5.4.3.

5.2.1 *The Indigenous Tweets Website*

The Indigenous Tweets website (<http://indigenoustweets.com/>) was developed by Professor Kevin Scannell of the Department of Mathematics and Computer Science at the University of Saint Louis, Missouri, USA. Scannell (2011) cites the primary aim of this website is to “help build online language communities through Twitter (p. 1)”, hoping that the site will enable speakers of indigenous and minority languages to connect in their own languages amidst “a vast sea of English, French, Spanish and other global languages that dominate Twitter (p. 1)”. Indigenous Tweets records the occurrence of tweets in selected minority languages. The

¹¹³ Source: WSJ Tech - Retrieved from <https://twitter.com/wsjtech/status/451886622788055040>, (Wall Street Journal December 2013)

website, launched in March 2011, catalogued tweets from 35 chosen languages. By May 2011 user statistics had more than doubled with the website recording tweeter profiles for over 80 languages. User profiles in September 2013 were listed for 150 languages¹¹⁴.

Indigenous Tweets captures data by searching Twitter for clusters of words it recognises from a database. The database contains text for approximately 500 languages that include Gamilaraay, an Aboriginal Australian language with three remaining speakers (Ungerleider, 2011), and was compiled using a web crawler to scan blogs, news articles and webpages (Scannell, 2011b). Scannell uses tweet data to improve language dictionaries and spell checkers, especially for the Irish language, and says “ ... it’s cool seeing the language changing day by day, week by week”¹¹⁵. This data is used by a program that randomly scans Twitter users and applies a method of statistical language recognition, known as tri-grams, to ascertain what fraction of their tweets contain the target language (Ungerleider, 2011). Language recognition is based on the analysis of three character sequences (“3-grams” or “tri-grams”) and “it turns out that computing the statistics of 3-grams in a given language provides a “fingerprint” that can be used for language identification and a number of other applications” (Scannell, 2011c).

When a tweet contains a prescribed combination of word sequences, it is captured by Indigenous Tweets as belonging to a specific language. The user’s profile is then added to the Indigenous Tweets website and their followers’ profiles are also added to a queue for scanning. Profiles are established of tweeters using the various selected mother tongues, enabling speakers using the same languages to get in touch with each other (Lee, 2011). Bi-lingual tweets are handled slightly differently. Following identification of these tweets using statistical measuring of the character sequences (tri-grams), a word-based classifier is then used to compute the

¹¹⁴ Source: <http://indigenoustweets.com> - retrieved 5 September, 2013

¹¹⁵ Professor Kevin Scannell: personal communication (eMail): 19 September 2012

probability, given the words in the tweet, that the tweet is one language or the other. If the language that has the highest probability is one that is included on this website then that language is assigned to the tweet - otherwise the tweet is discarded¹¹⁶. This means that bi-lingual tweets are only counted once on this website, and only if the language of highest probability is one of the selected indigenous languages.

In collaboration with language groups globally, Scannell (2011c) is using the data he has gathered from web-based text, written in indigenous and minority languages, to develop basic resources that will help these groups use their language online. “The site’s very simple,” says Scannell, “you find your language, you click on it, and it takes you to a table of all the people that are tweeting in your language” (Lee, 2011). This work underlies the Indigenous Tweets and Indigenous Blogs projects “which aim to strengthen languages through social media” (Scannell, 2011c).

¹¹⁶ Professor Kevin Scannell: personal communication (eMail): 6 December 2013

5.2.2 *Indigenous tweeting statistics*

The Indigenous Tweets website lists profile information for 150 languages¹¹⁷. The top 10 languages recorded by this website, when ranked by the number of user-profiles associated with that language, are shown in Table 16.

Table 16: Indigenous Tweets ordered by No. of Users (Column 2)
(Data retrieved 5 September 2013)

Language	Users	Language Tweets	Top user	Tweets (top user)
Euskara	17042	4629179	berria	43464
Kreyòl Ayisyen	14267	3801664	RoodHT509	49006
Cymraeg	14218	2461608	newyddcymraeg	57703
Gaeilge	7388	472825	aonghusoha	24336
Frysk	2048	571851	omropfytsban	61042
Kapampangan	1379	1560984	itsmeshellie	19449
Asturianu	749	254257	iyangc	16439
Gàidhlig	652	93423	sconewt	27303
Soomaaliga	558	141671	Weedhsan	15895
Māori	335	89391	maonewt	29810

Euskara, with the most number of users, refers to the language spoken by the Basque who are located on both sides of the border between southern France and northern Spain. The language with the second most users is Kreyòl Ayisyen (*Haitian Creole*), a creole¹¹⁸ language spoken by about 8.5 million people in the Republic of Haiti in the Caribbean. There are a further 3.5 million speakers in a number of countries that include Canada, the USA, France, Cuba, and other Caribbean countries (Omniglot, 2013). For the promoters of an online Euskara language community this data might show some early success. Comparisons between

¹¹⁷ Data retrieved from this site 5 September 2013 informs the tables, figures and discussion in this section

¹¹⁸ A vernacular language emerging from colonial European plantation settlements in the 17th and 18th centuries ref: <https://www.britannica.com/topic/creole-languages>

Euskara and Haitian Creole seem to highlight the importance of online language communities as a tool for language health. At first glance, more users engage in Euskara than Haitian Creole, but, at approximately 12million speakers, Haitian Creole boasts over 12 times more native language speakers than Euskara. It would appear that the slightly less than 2% of the Euskara-speaking population tweeting in their language is a percentage that is over 1400 times higher than speakers of Haitian Creole. However, resource constraints due to the sheer volume of people and the daily query limits set by Twitter, mean that Haitian Creole is the only language on the Indigenous Tweets website whose tweets haven't been fully pursued¹¹⁹. Since the actual volume of tweeting in Haitian Creole is not fully represented, any further comparison with this language would be irrelevant in this context.

There are over 500,000 speakers of Cymraeg (*Welsh*) (BBC News Wales, 2012; GlobalVoices, 2011). More than 2.5% of Welsh speakers are tweeting in their own language, suggesting some gains for promoters of the Welsh language. The other languages with more than one thousand user profiles are Gaeilge (*Irish Gaelic*), Frysk (*Friesian - Netherlands*) and Kapampangan from the Philippines. Te reo Māori is 10th on the list with 335 user profiles.

The top five tweeters of te reo provide approximately 80% of the Māori-language tweets, while the top 20 users account for almost 90% of the tweets. The top tweeter in te reo Māori was the user 'maonewt' generating one third of all tweets recognised as Māori¹¹⁴. The majority of these tweets comprised scriptural references and quotations from the New Testament of the Bible. @maonewt is one of a small number of profiles that are generating large amounts of tweets. This is evident in the comparative pie charts in Figure 38 and Figure 40 which show much of the Māori-language tweeting (90%) is being done by a small number of members (20)

¹¹⁹ Professor Kevin Scannell: personal communication (eMail): 22 November 2013

compared with the top 20 Euskara tweeters who account for only 8% of the Euskara tweets.

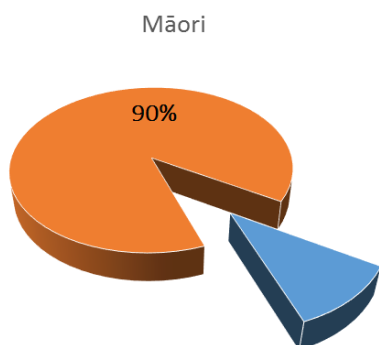


Figure 39: Māori top 20 users = 90% of tweets

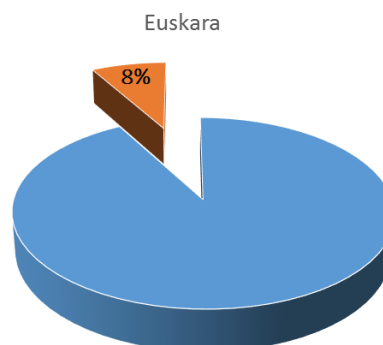


Figure 40: Euskara top 20 users = 8% of tweets

Comparisons between Euskara and te reo Māori show that:

- Slightly less than 2% of the Euskara-speaking population are tweeting in their language compared with approximately 0.2% of Māori-language speakers.
- Five tweeters account for 80% of the Māori-language tweets and the top 20 tweeters account for almost 90% - see Figure 39. By comparison, the top 20 Euskara tweeters account for less than 8% of the total Euskara tweets see Figure 40.

These points suggest a vibrant online Euskara community with far more interactivity when compared with te reo Māori. On pure numbers, however, this conclusion might be misleading. Indigenous Tweets displays a maximum of 500 profiles for each language. For Euskara, 500 profiles equates to 2.9% of the Euskara tweeting profiles. For Māori, 2.9% of those posting in te reo Māori equates to 18 profiles.

Table 17: Data for 2.9% of Indigenous Tweeters

Language	No. of Tweeters (sample)	Indigenous Tweets	Total Tweets	% of total
Euskara	500	5139776	10664821	48.9
Māori	18	99242	144705	68.6

It is evident that 2.9% of Māori-language tweeters post 68.6% of their tweets in te reo Māori. By comparison, for 2.9% of Euskara tweeters, only 48.9% of the total Euskara tweets are in their own language. On these numbers alone it is difficult to draw clear comparisons and conclusions without interrogating the content of the tweets and, more importantly in terms of this research, whether or not there is any interaction between the tweeters themselves.

5.2.2.1 The top individual indigenous language tweeters

Analysing the statistics of the higher tweeters is important because it would indicate whether there are many users tweeting in an indigenous language, or just a few users who are tweeting often, or some combination of both. It seems likely that many users tweeting often in an indigenous language might imply or engender some interactivity. This in turn would reflect a language community engaging successfully with this form of social media. Further analysis of interactivity is discussed in Section 5.3.

5.2.3 Profiling Māori-language tweeters

The top 3 Māori-language tweeters are shown in Figure 41.

	◆ kaiwhakamahi ◆		Māori ▾	katoa ◆	% Māori ◆	apataki ◆
1	maonewt		29810	32020	93.1	21
2	maoold		22390	24659	90.8	17
3	maobbl		11620	12507	92.9	12

Figure 41: Top 3 tweeters of te reo Māori¹²⁰

The column ‘*kaiwhakamahi*’ refers to the user or tweeter, ‘*Māori*’ denotes the number of te reo Māori tweets, ‘*katoa*’ represents the total number of tweets posted by that user, ‘*% Māori*’ is the ratio of te reo Māori tweets to the total, and ‘*apataki*’ are the followers. The three profiles shown in Figure 41 are religious based and make up 71% of te reo Māori tweets. The top two appear to have posted Māori translations of Bible script from the New Testament (user *maonewt*) and from the Old Testament (user *maoold*) and have posted 58% of Māori tweets. Both accounts now have a suspended status. There have been no postings from ‘*maonewt*’ since May 2013 nor from ‘*maoold*’ since June 2012. The third highest tweeter, ‘*maobbl*’, has 12 followers and posts verse from the Māori translation of the Bible – often referred to as the ‘Māori Bible’. It seems these tweets originate out of California, USA (Figure 42) but nothing has been posted since June 2013.

¹²⁰ Screenshot: 5 September 2013



Figure 42: Twitter profile page for @maobb1

The Twitter profile page for @maobb1 shows that the listed location for that user is California, USA. These tweets appear to be sent by “Twitter bots”- programs in the form of simple scripts that tweeted random Bible verses periodically. In the case of @maobb1, it looks like the script is set to tweet six translated verses from the New Testament each day. Nothing has been posted using this profile since 5 June 2013¹²¹. Later analysis will discard these bot-driven tweets since they don’t use the language to foster any conversation.

The proportion of Māori-language tweets posted by the top five tweeters can be seen in Figure 43. Together they account for 80% of the Māori-language tweets which means the remaining 330 users account for the rest (20%).

¹²¹ This is still the case 1 June 2017

Top 5 Māori-language tweeters 2013

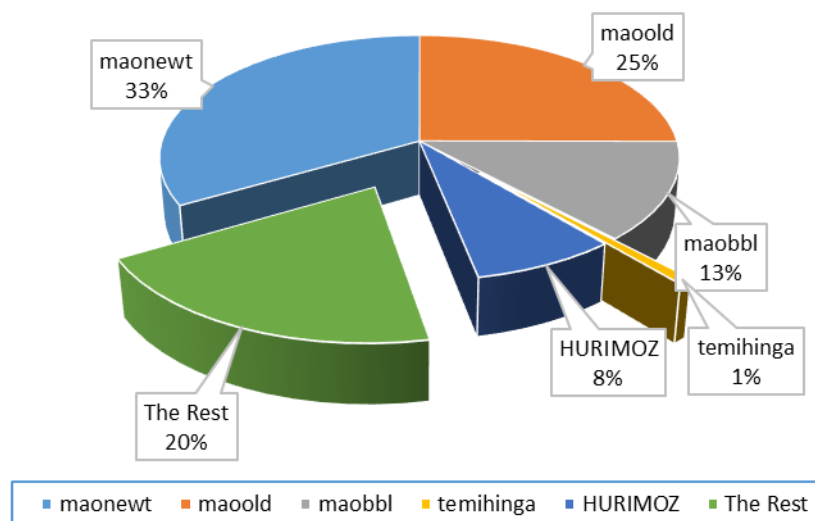


Figure 43: Top 5 Māori-language tweeters 2013¹²²

The top four tweeters of te reo Māori account for 79% of all Māori-language tweets – see Figure 43. These tweets focus on dissemination of scripture and religious references, and, in the case of HURIMOZ, general news items and topics that might be of interest to their followers. The tweets from these four users do not invite interaction beyond receiving the tweets. If many tweeters providing many tweets in their own language were a sign of an engaged online language community, as in the case of Euskara, then the Māori-language case would signal room for improvement. One would expect that the incidence of connected tweets, as in conversation or simply just retweets, might signal measures of health (of the language-community) that go beyond measures of volume or high numbers of potentially unanswered tweets. This is discussed further in Section 5.3. Note, for now, that the fifth highest tweeter, @temihinga, posts 1% of the te reo Māori tweets.

¹²² Data Source: <http://indigenoustweets.com> - retrieved 5 September, 2013

The data from the Indigenous Tweets website has been sorted in a number of differing ways for discussion and presented in the following tables for analysis. The top 10 languages ranked by the number of user profiles associated with that language are shown in Table 18. Basque have the highest number of user profiles and post the most indigenous tweets overall.

Table 18: Top 10 languages by overall indigenous tweets

Language	Users	Language Tweets	Top user	Tweets (top user)
Euskara	17042	4629179	berria	43464
Kreyòl Ayisyen	14267	3801664	RoodHT509	49006
Cymraeg	14218	2461608	newyddcymraeg	57703
Kapampangan	1379	1560984	itsmeshellie	19449
Frysk	2048	571851	omropfytsban	61042
Setswana	314	564575	sesutho	30409
Gaeilge	7388	472825	aonghusoha	24336
Asturianu	749	254257	iyangc	16439
Hausa	300	236400	bbchausa	20128
Soomaaliga	558	141671	Weedhsan	15895
Gàidhlig	652	93423	sconewt	27303
Māori	335	89391	maonewt	29810

Although there are users in the other languages who have tweeted more often than the highest tweeter of Euskara, no further investigation has been actioned from that observation. However, further calculations have been performed on this data in order to understand how individual users affect the data. The total number of tweets has been averaged by the number of users for each of the languages. The indigenous tweets posted by the most prolific tweeter have then been presented as a percentage of the total and, finally, as a ratio applied to the calculated average tweets per user - see Table 19.

Table 19: Some individual vs. overall tweeting statistics

Language	Users	Tweets	Tweets per user	Tweets (top user)	% of total tweets (top user)	vs. avge tweets
Euskara	17042	4629179	272	43464	0.94	159.8
Kreyòl Ayisyen	14267	3801664	266	49006	1.29	184.2
Cymraeg	14218	2461608	173	57703	2.34	333.5
Kapampangan	1379	1560984	1132	19449	1.25	17.2
Frysk	2048	571851	279	61042	10.67	218.8
Setswana	314	564575	1798	30409	5.39	16.9
Gaeilge	7388	472825	64	24336	5.15	380.3
Asturianu	749	254257	339	16439	6.47	48.5
Hausa	300	236400	788	20128	8.51	25.5
Soomaaliga	558	141671	254	15895	11.22	62.6
Gàidhlig	652	93423	143	27303	29.23	190.9
Māori	335	89391	267	29810	33.35	111.6

An analysis of the Euskara data shows that the top user tweets 159.8 times more often than the calculated average (*vs. avge tweets* column). Closer inspection reveals that the top 20 users account for slightly less than 8% of the total tweets in Euskara. This suggests that the majority of the users are very active and would indicate a reasonably healthy language community within Twitter assuming the existence of some level of interaction. By comparison, the top user for Māori tweets about 111 times more than the calculated average. The top five users provide approximately 80% of the tweets in Māori while the top 20 users account for almost 90% of all tweets. This might indicate that the top tweeters in te reo Māori are not engaging with each other but using Twitter as broad-brush dissemination. This lack of interaction, especially when compared with the Euskara statistics, suggests a far less active language community.

As noted previously, the top tweeter in Māori, ‘maonewt’, is credited with one third of the tweets in Māori. The highest user for Gàidhlig at 29%, ‘sconewt’, also posts

translations of the New Testament of the Bible in Scottish. One might question the contribution that such religious-based postings provide to online language communities and the ongoing health of that language. Given the case for Māori, where the postings appear to originate more as part of a global offshore campaign, it might appear that, to the sender of the tweets, the distribution and the message itself is more important than the language. This suggests that the primary aim is dissemination rather than any motivation to promote or preserve endangered minority languages by way of conversational or interactive tweeting.

The top tweeter for Cymraeg, 'newyddcymraeg', posts news articles in Welsh and has over 2000 followers. The top user for Soomaaliga, the Somali language, is 'Weedhsan'. Weedhsan is a monthly Somali-based magazine published both in English and Somali in cities that include Paris, London, New York, Sydney and Dubai (Hassan, 2013). If we are to assume that vibrant online language communities are underpinned by a high-level of user-interaction, then, as with the Bible translations, further investigation will need to determine how the posting of different types of translated text impacts the affected communities. It is possible that tweeting content of a popular magazine or news articles may affect some cultures differently. In which case there may also be value in understanding the roles and impact of the differing types of dissemination, in terms of content, and what impact, if any, differing content in differing contexts may have on the profile and longevity of an endangered language.

When the results are grouped by the number of tweets posted by the top user in the target language, language order changes slightly again – see Table 20. Even so, some languages still feature toward the top of the list. Without further analysis one might think fairly strong language communities exist for those particular languages.

Table 20: Indigenous Tweets by 'tweets posted by Top User' (Tweets (top user))








Language	Users	Tweets (in the language)	Top user	Tweets (top user)
Frysk	2048	571851	omropfytsban	61042
Cymraeg	14218	2461608	newyddcymraeg	57703
Kreyòl Ayisyen	14267	3801664	RoodHT509	49006
Euskara	17042	4629179	berria	43464
Gaelg	26	85533	glvold	40479
Setswana	314	564575	sesutho	30409
Māori	335	89391	maonewt	29810
Tamasheq	3	57363	tmjnew	27484
Gàidhlig	652	93423	sconewt	27303

Identifying whether or not a language has a few users posting many tweets, versus many users actively posting can be a useful gauge of whether or not conversations are happening in indigenous languages. In the case of te reo Māori, a handful of users are responsible for the bulk of the Māori-language tweets – see Figure 43. An initial inspection of content suggests those particular tweeters have more of a focus on disseminating their messages and information as widely as possible, rather than on any attempt to raise the profile of the language or generate any conversational use of the te reo in this medium.

5.3 Profiling Māori-language Tweeting








The user profiles for te reo Māori tweeters show that those that post the most tweets overall actually post very few in te reo as shown in Table 21. In fact, not taking into account the four top tweeters by percentage te reo (Table 22), ‘maonewt’ (93.1%), ‘maoold’ (90.8%), ‘maobb1’ (92.9%), and ‘hurimoz’ (93.1%), the remaining top 20 users tweet in Māori less than 3% of the time. These percentages may be misleading. In the case of user ‘Kase_Marbles’ for example, 0.4% of total tweets is still 434 tweets in Māori – almost double the calculated average per user – see Table 19. With over 3,700 followers and high levels of interaction with other tweeters, at least in English, 0.4% may yet have some influence on an online Māori-language community. It may also be useful to identify tweets in terms of trending content and timespans but this has been difficult to determine from the Twitter website with limited resource. Direct contact with selected users might prove informative. Additionally, users with relatively high numbers of followers could prove invaluable in efforts to build language communities in this medium.

Table 21: Māori-language tweeters by total number of tweets (katoa)

kaiwhakamahi (<i>user</i>)	Māori tweets	katoa (<i>total</i>)	% Māori	apataki (<i>followers</i>)
13 Kase_Marbles 	434	123644	0.4	3719
4 HURIMOZ 	7098	120002	5.9	1115
35 tinopai 	202	61676	0.3	1050
1 maonewt 	29810	32020	93.1	21
2 maold 	22390	24659	90.8	17
147 TimProvis 	18	23958	0.1	504
30 tauhenare 	223	22544	1.0	3955

While it could be argued that dissemination of high volumes of text in te reo Māori might be useful for online language communications, the disparity between the very high number of tweets and the relatively low number of followers, as in the cases of ‘maonewt’ (29,810 tweets, 21 followers) and ‘maold’ (22390 tweets, 17 followers)¹¹⁴ might suggest otherwise (Table 22). The profiles of the top 3 tweeters in te reo Māori (Table 22) have been discussed previously and, in brief, represent scriptural postings from the New and Old Testaments of the Bible, and from the ‘Māori Bible’. Together these three users have posted 71% of all tweets recognised as Māori¹¹⁴. Despite the high volume of tweets, these profiles have relatively few followers. Profiles that have high numbers of (mostly non-interactive) tweets in an at-risk language might positively impact language revitalisation for that language if they also have a high number of followers. An investigation into whether this is so might provide some interesting outcomes.

Table 22: Māori tweeters by total number of tweets in te reo Māori (Māori tweets)³

kaiwhakamahi (<i>user</i>)	Māori tweets	katoa (<i>total</i>)	% Māori	apataki (<i>followers</i>)
1 maonewt 	29810	32020	93.1	21
2 maoold 	22390	24659	90.8	17
3 maobbl 	11620	12507	92.9	12
4 HURIMOZ 	7098	12002	59.1	1115
5 temihinga 	746	1086	68.7	265
6 waateanews 	746	8238	9.1	1414
7 TeKarereTVNZ 	681	2729	25.0	1306

The next four highest tweeters of te reo Māori represent 10% of the tweets recognised as Māori¹⁴. Their profiles follow.

5.3.1.1 Profile: @HURIMOZ

The fourth highest number of tweets in te reo Māori are from user ‘HURIMOZ’ – see Figure 44 for an abridged view of the HURIMOZ profile page on Twitter.



Figure 44: Twitter profile page for @HURIMOZ (abridged)

‘HURIMOZ’ provides nearly 8% of Māori tweets and is linked to a linguistic website; Huri Translations¹²³ – see Figure 45 for screenshot of the homepage.

¹²³ Source: <http://www.huri-translations.pf/>

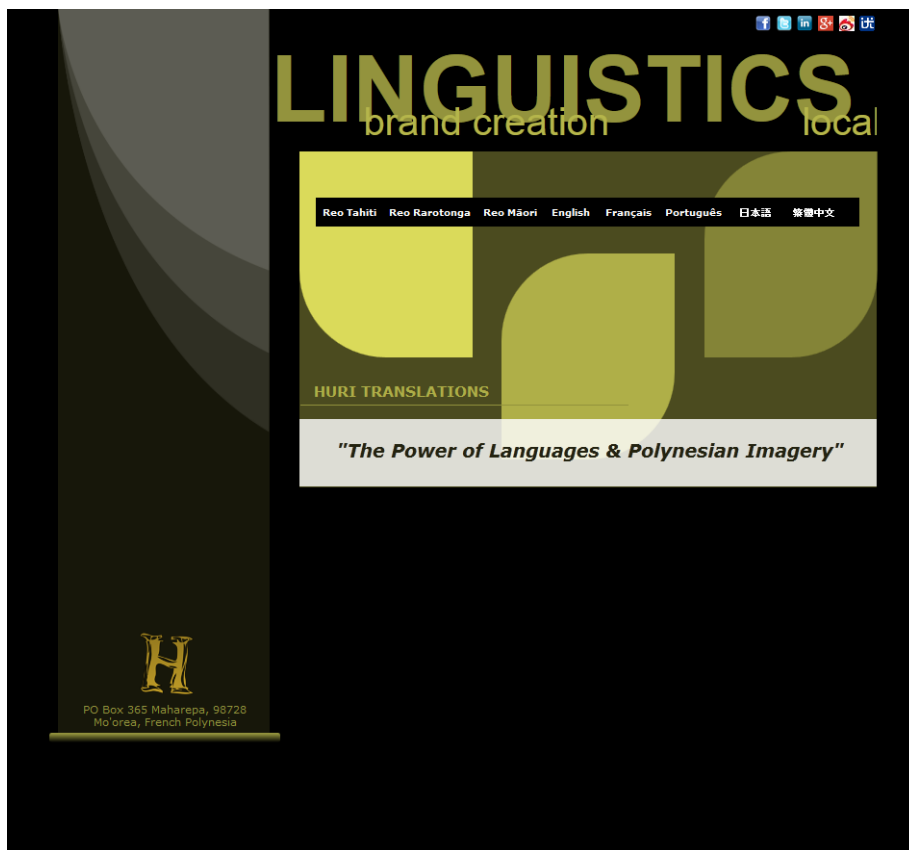


Figure 45: Website Homepage: Huri Translations

Huri Translations is based in Mo’orea, French Polynesia and is a consulting agency created in 2008 to provide language solutions and cultural knowledge to their clients. According to the website, this consultancy helps business owners localize their products and services using French Polynesian imagery and linguistics as a source of branding and marketing inspiration. This is done by “combining marketing techniques with syntactic, semantic and pragmatic rules, the agency designs corporate identity – called branding – to meet naming projects and create logos, taglines etc.”¹²⁴ This might translate as an agency that specialises in customising branding strategies using indigenous language and concepts as a point of difference.

¹²⁴ Source: <http://www.huri-translations.pf/english/about-us.html>

Huri Translations has a multilingual website that is available in eight languages. The pages are primarily non-interactive and feature a strong sense of French Polynesian imagery and themes – even in the non-Polynesian languages. The website advertises services such as translation, localisation, transcription and proof-reading. They are also willing to engage in conversation regarding the development and marketing of customised branding and they boast a selection of ‘language promotion tools’ that includes a Polynesian keyboard for the simple provision of a tohutō (*macron*) when using Windows or Android OS. Users are able to view this website in te reo Māori – see Figure 46.

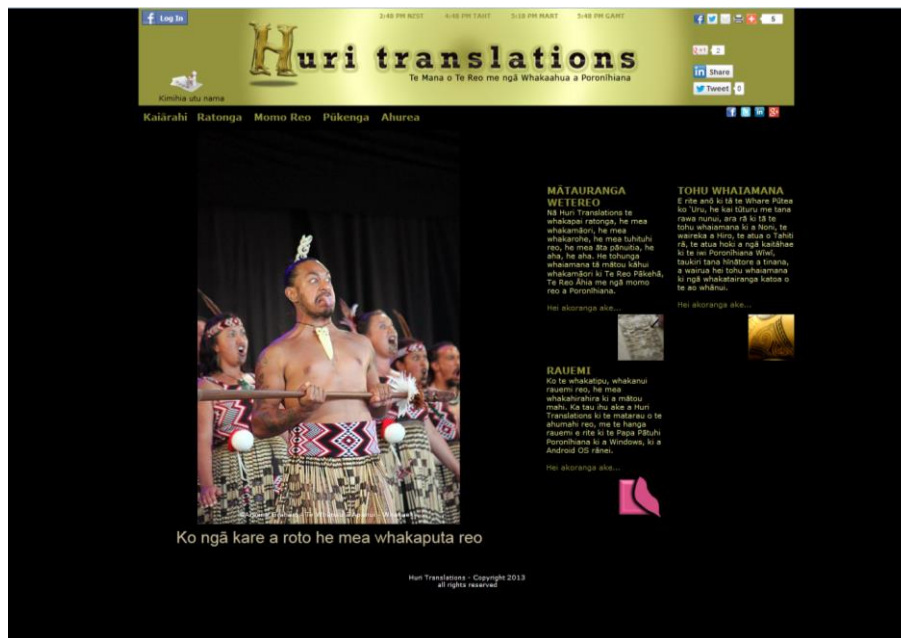


Figure 46: Te reo Māori pages: Huri Translations

The website facilitators were willing to sell website transaction analysis data and other non-publicly available server data for a fee. In terms of the te reo Māori site, they are willing to share countries of origin, number of visits, visited pages, visit duration, direct/organic traffic, types of files downloaded, type of device, operating systems, browsers, OS locales, and search engine searched terms. The data would be available for a 6-month period, and in some cases up to January 2013. Data that

cannot be shared includes: IP addresses, visitor ISPs, referral traffic, and any other private third-party data¹²⁵.

The bulk of the ‘HURIMOZ’ tweets are in English and appear to focus mainly on regurgitating news items and retweeting topics of interest e.g. restaurants identified by other tweeters. Even so, nearly 6% of the ‘HURIMOZ’ total are tweets in te reo Māori, equating to nearly 7100 tweets¹¹⁴ – see Table 22. As mentioned earlier, however, the posts in te reo Māori are largely commentary and don’t appear to invite interaction amongst other users.

5.3.1.2 Profile: @temihinga

User ‘temihinga’ is a facilitator for He Pikinga Reo, Māori-language development, with CORE Education. Based in Christchurch, New Zealand, CORE Education describes itself as “... a not-for-profit education consultancy, professional learning and research agency”¹²⁶. According to their website¹²⁶ they believe that new technologies are the most exciting way to engage 21st century learners across all education and training sectors.

¹²⁵ Huri Translations: personal communication (eMail): 25 September 2013

¹²⁶ Source: <http://www.core-ed.org/> 25 September 2013



Figure 47: Twitter profile page for @temihinga (abridged)

With a strong history in the promotion of te reo Māori and the development of language speakers, @temihinga has a solid background with the education sector of New Zealand. This includes teaching in Māori-medium and mainstream schools, lecturing and tutoring at university and polytechnic level, and facilitating for various Māori-language strategies in the New Zealand. @temihinga currently posts 1% of the Māori-language tweets. At 68.8% Māori (see Table 22), the te reo ratio of @temihinga is relatively high and tweets appear to invite (and attract) interaction from other users in te reo Māori. Contact with this user, in terms of building an online language community using Twitter, has proven positive with early expressions of support – commenting that "It's part of my push to get more reo on the internet ..."¹²⁷.

¹²⁷ @temihinga: personal communication (eMail): 23 October 2013

5.3.1.3 Profile: @waateanews

The posts from 'waateanews' originate from Radio Waatea who describe themselves as Auckland's (New Zealand) Urban Māori Radio and News Station.



Figure 48: Twitter profile page for @waateanews (abridged)

Most of the tweets are in English but this tweeter has a relatively high number of followers. The postings are generally news items or commentaries regarding items of news that are topical at the time, and as such do not specifically invite further comment or interaction.

5.3.1.4 Profile: @TeKarereTVNZ

Te Karere is Television New Zealand's (TVNZ) news and current affairs programme that broadcasts entirely in the Māori language. The focus of the programme is content which is of some significance to the targeted Māori audience. As with @waateanews, the tweets from @TeKarereTVNZ consist of or are about topical news and current affairs and do not specifically invite feedback or engagement.



Figure 49: Twitter profile page for @TeKarereTVNZ (abridged)

At only 25% Māori-language tweets, one would assume the majority of tweets posted by this user's pages are in English. Again, given that this program broadcasts almost entirely in te reo Māori it is interesting that the majority of their tweets are in English. Understanding why this is so could be the focus of a separate study.

5.3.2 Other significant tweeters of te reo Māori








An analysis of Indigenous Tweets shows that a number of users post in te reo Māori all of the time but none of these have posted more than five tweets in total.

Table 23: Tweeters with 100% tweets in te reo Māori

kaiwhakamahi <i>(user)</i>	Māori tweets	katoa <i>(total)</i>	% Māori	apataki <i>(followers)</i>
230 glensmturu 	5	5	100.0	11
237 chrismrk0 	4	4	100.0	3
249 hei4nau 	4	4	100.0	18
2476 NgawiniS 	2	2	100.0	7
277 kohinekaha 	2	2	100.0	6
296 Tiaretew 	1	1	100.0	10
298 kirituna 	1	1	100.0	21
309 kokalaura 	1	1	100.0	8
317 LaurenMegan93 	1	1	100.0	1
321 KymThompson5 	1	1	100.0	4
322 tuilah1 	1	1	100.0	14
325 WMakere 	1	1	100.0	8
334 taikirau242 	1	1	100.0	7

Users who post rarely or infrequently, but post entirely in te reo Māori may require some motivating to engage in an online Māori-language community. A project that seeks to build such a community may find some value in contacting these users who, although low volume tweeters, are already using te reo Māori and may prove to be an available source for developing numbers (Table 24). In the interim, however, an analysis of users with higher volumes and higher percentages of Māori tweets should yield a more active group of prospective participants. Additionally, these high volume tweeters users may have a significantly wider impact if they have a large number of followers.

Table 24: % tweets in te reo Māori

kaiwhakamahi <i>(user)</i>	Māori tweets	katoa <i>(total)</i>	% Māori	apataki <i>(followers)</i>
1 maonewt 	29810	32020	93.1	21
3 maobbl 	11620	12507	92.9	12
2 maold 	22390	24659	60.8	17
65 Tiiwaha 	67	77	87.0	51
227 Parani TeMoana 	6	7	85.7	14
195 Arana_te_pananna 	9	11	81.8	16
64 hpr2013 	68	87	76.7	136

In order to identify an initial group of users who might have a more significant impact in terms of an online Māori-language community, the tweets have been filtered to capture those users who have posted more than 50 tweets and have more than a 50% te reo Māori content. Further, to distinguish those who might already

have a broader network of sorts, an additional filter was added to detect those who also have more than 50 followers - see Table 25.

Table 25: Profiles with >50 tweets and >50% te reo Māori and >50 followers

kaiwhakamahi <i>(user)</i>	Māori	katoa <i>(total)</i>	% Māori	apataki <i>(followers)</i>	whakaapataki <i>(followed)</i>
temihinga	860	1232	69.8	297	485
PukanaMaiOWhatu	317	553	57.3	296	223
MaataaWaka	192	283	67.8	127	540
hpr2013	79	100	79.0	159	76
Tiiwaha	67	77	87.0	51	30
<i>totals</i>	1515	2245	67.4	930	1354

Although the filter criteria were chosen fairly arbitrarily, a handful of users have been identified. Their profile summaries follow (note: user @temihinga has been discussed in Section 5.3.1.2).

5.3.2.1 Profile: @PukanaMaiOWhatu

Similar to @TeKarere (see Section 5.3.1.4), tweets from user ‘PukanaMaiOWhatu’ are the offspring of Pūkana, a programme aired by New Zealand’s Māori Television. This award-winning show is in its fifteenth year of production and is described as colourful, hip and funny¹²⁸. The show contains music, cheeky send-ups and practical life skills and is aimed at younger, pre-dominantly Māori, audiences.



Figure 50: Twitter profile page for @PukanaMaiOWhatu (abridged)

Although PukanaMaiOWhatu tweet 57% of the time in te reo Māori, the Pūkana website is pre-dominantly te reo Māori (95%+) ¹²⁹. The website includes competitions, event updates and links to Facebook pages¹²⁹ (see Figure 51).

¹²⁸ Source: <http://www.Māoritelevision.com/tv/shows/pukana>

¹²⁹ Source: <http://www.pukana.co.nz/Home.aspx>



Figure 51: Website Homepage: Pūkana¹²⁹

The focus of Pūkana is content which is aimed at and engages the targeted, younger Māori audience. Recent tweets contain a large amount of competition conversation. Interestingly, much of the interaction generated by these tweets occurs within the Facebook pages included as links in the tweets. This is especially so for competition feedback from other followers that include a high level of Instagram connections. In terms of wider engagement and targeted age groups, understanding the dynamics of multiple platform use, connecting language users by bundling popular media together, would be a useful exercise. More research could also examine how cross-sections of a community are motivated to interact with each other in the same conversations but using differing media.

5.3.2.2 Profile: @MaataaWaka

The posts from @MaataaWaka originate from a HauOra (*Māori Health Organisation*) called Maataa Waka which is based in the northern area of New Zealand's South Island. This organisation has a vision of caring for people and their mission is "to provide tools within a Kaupapa Māori¹³⁰ framework to make a positive difference for whānau (*family*)"¹³¹.

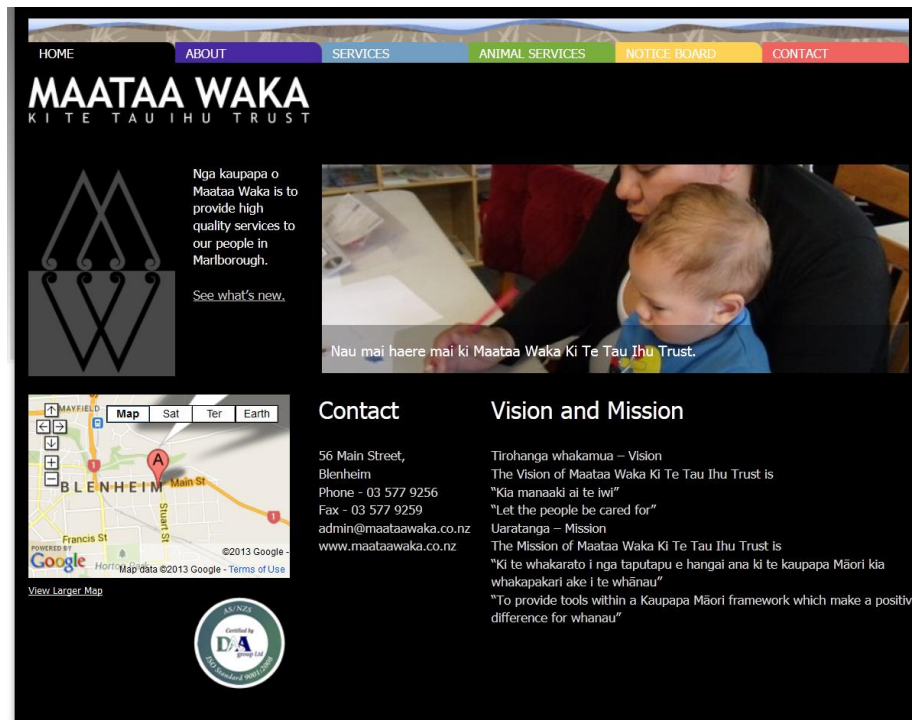


Figure 52: Website Homepage: Maataa Waka¹³¹

The services offered by Maataa Waka are free of charge and appear to focus on strengthening child, family and community health. According to their website¹³¹, Maataa Waka offer Youth Services, Social Services and initiatives based around physical activity and nutrition.

¹³⁰ A philosophy based on Māori values and Māori ways of doing

¹³¹ Source: <http://www.maataawaka.co.nz/>



Figure 53: Twitter profile page for @MaataaWaka (abridged)

A quick study of the content of the Maataa Waka tweets might shed some light on why they are following 637 members and only have 155 followers.

5.3.2.3 Profile: @hpr2013

User @hpr2013 arises from He Pikinga Reo (see Figure 54), mentioned earlier as a Māori-language Development Program facilitated by Core Education¹³² based in Christchurch, New Zealand. The postings appear to be the work of one of the kaiako (*teachers*) whose own profile (see Figure 55) is linked to this one.

¹³² See Section 5.3.1.2 Profile: @temihinga



Figure 54: Twitter profile page for @hpr2013 (abridged)



Figure 55: Twitter profile page for @wawaro81 (abridged)

Of the tweets posted by @wawaro81, 56.2% are in te reo Māori. Note also that there are 73 followers of this tweeter. From initial contact @wawaro has expressed a willingness to support our investigation into building an online Māori-language in Twitter and has also confirmed herself as the administrator/tweeter behind the hpr2013 profile.¹³³

¹³³ @wawaro81: personal communication (eMail): 23 October 2013

5.3.2.4 Profile: @Tiiwaha

User @Tiiwaha arises from one of many initiatives implemented in 2012 by a group at Massey University in the Manawatu region of New Zealand. As the nation celebrated Te Wiki o Te Reo Māori (*Māori Language Week*), during July 2012, this group facilitated a series of events in celebration of Te Marama o te Reo (*Māori Language Month*) for the whole month. The original event, dubbed tīwaha (*speak up*), was an informal Māori language mentoring group for staff and students run by a group of university staff. One of the group, Dr Darryn Joseph says tīwaha is not just for fluent speakers. “It’s for anyone who wants to improve or use their Māori language skills in a supportive environment, outside of a classroom setting.” (Massey University, 2012). This profile has arisen from the tīwaha event and is now being followed by 51 users with 87% of their posts in te reo Māori.



Figure 56: Twitter profile page for @Tiiwaha (abridged)

An analysis of the @Tiiwaha tweets shows that the majority of the tweets (77%) occurred during Te Marama o te Reo (July 2012). The only posts in 2013 have been two August and one in January. Note that of the 77 tweets (see Table 25) 21 were retweets, where the tweets of other users have been re-posted by @Tiiwaha.








Summary

It is apparent that there are people who post on behalf of organisations and some who post for themselves. Occasionally a user will do both. Evidently, when the tweets are posted on behalf of an organisation the tweets tend to be more noticeboard-suitable. Those particular tweets focus on sharing information and are generally characterised by their one-way nature. That is, they tend not to elicit engagement from others in the form of extended conversation. Interestingly, as in the case of @PukanaMaiOWhatu, engagement from other users can occur on other media platforms such as Instagram and Facebook. These other media are normally accessed from links within the tweets or from a connected website. It would be useful to understand the success of a multiple platform community especially in terms of ongoing engagement that can be tailored somewhat to target demographics. In the case of PukanaMaiOWhatu, whose target demographic is primarily younger Māori, links to Snapchat and Instagram help to keep that demographic involved. In general, the users who tweet on their own behalf would be influenced by their own agendas. Therefore, the users who are attempting to create conversations in this space tailor their tweets differently; in a manner that is more likely to attract feedback, comments or discussion.

5.3.3 *Māori tweets: User profiles ranked by number of followers*

The seven Māori-language tweeting profiles who post the most tweets have been further ranked based on the number of followers for each profile (Table 26). One can readily see that the percentages of tweets in te reo are low for each of the tweeters. It seems, therefore, that most of the followers are interested in the higher volume of non-Māori tweets.

Table 26: Users ranked by the number of apataki (*followers*)

kaiwhakamahi (<i>user</i>)	Māori tweets	katoa (<i>total</i>)	% Māori	apataki (<i>followers</i>)
239 Te_Papa 	4	3183	0.1	10668
232 MaiFM 	5	3003	0.2	8417
161 newzealandbirds 	15	12643	0.1	5505
47 kingkapisi 	114	17270	0.7	4814
36 Māoritv 	201	4792	4.2	4781
123 coreeducation 	24	3033	0.8	4558
30 tauhenare 	223	22544	1.0	3955

The profile with the most followers, @Te_Papa, posts in te reo Māori 0.1% of the time relative to their total numbers of tweets, yet, amongst the Māori-language tweeters, they have the highest number of followers. These tweets arise from New Zealand’s ‘National Museum’, Te Papa. Most of the postings refer to exhibitions and events facilitated by the museum. Without checking all the tweets from this user, it appears that the bulk of their tweets are in English. It seems unlikely that the 10,500+ followers are more interested in the Māori-language posts (0.1% of the

total 3000+ tweets). This seems to hold true when compared to the postings of @Māoritv who has more tweets overall, a higher percentage of Māori-language tweets, but less followers.



Figure 57: Twitter profile page for @Te_Papa (abridged)

Assuming that most of @Te_Papa's tweets are in English it seems that the high number of followers might be more interested in the museum's information updates rather than any posting in te reo Māori. When observing the low percentages of te reo Māori tweets, one would assume the same for all the user profiles in Table 26. That is, it is likely their followers are more interested in what is being presented by the non-Māori-language tweets. These assumptions would certainly benefit from an investigation into samples of the tweets and perhaps the incidence and language mix of the tweets that were retweeted, liked or replied to.

5.3.3.1 Māori Twitter Network – a visual representation

A visual representation of the above discussions was provided by Professor Kevin Scannell ¹³⁴ and represents the network of Māori-language tweeters – see Figure 58. The connections correspond to @-mentions which generally reflect conversations and signify user interactivity. The size of a node and the username is determined by a network statistic called "authority" - basically how important a node is in the network. In other words, the larger usernames are interacting more often with other users. This means that users like maonewt and maoldt, who are disseminating without any level of return activity and therefore not engaging with others, do not feature in the network. Conversely, users like temihinga are very prominent. This would prove to be a useful tool for initially contacting users with the aim of developing larger language communities. It would seem to be a sound strategy, in the first instance, to contact those users who are involved in the higher amounts of traffic.

¹³⁴ Professor Kevin Scannell: personal communication (eMail): 22 November 2013

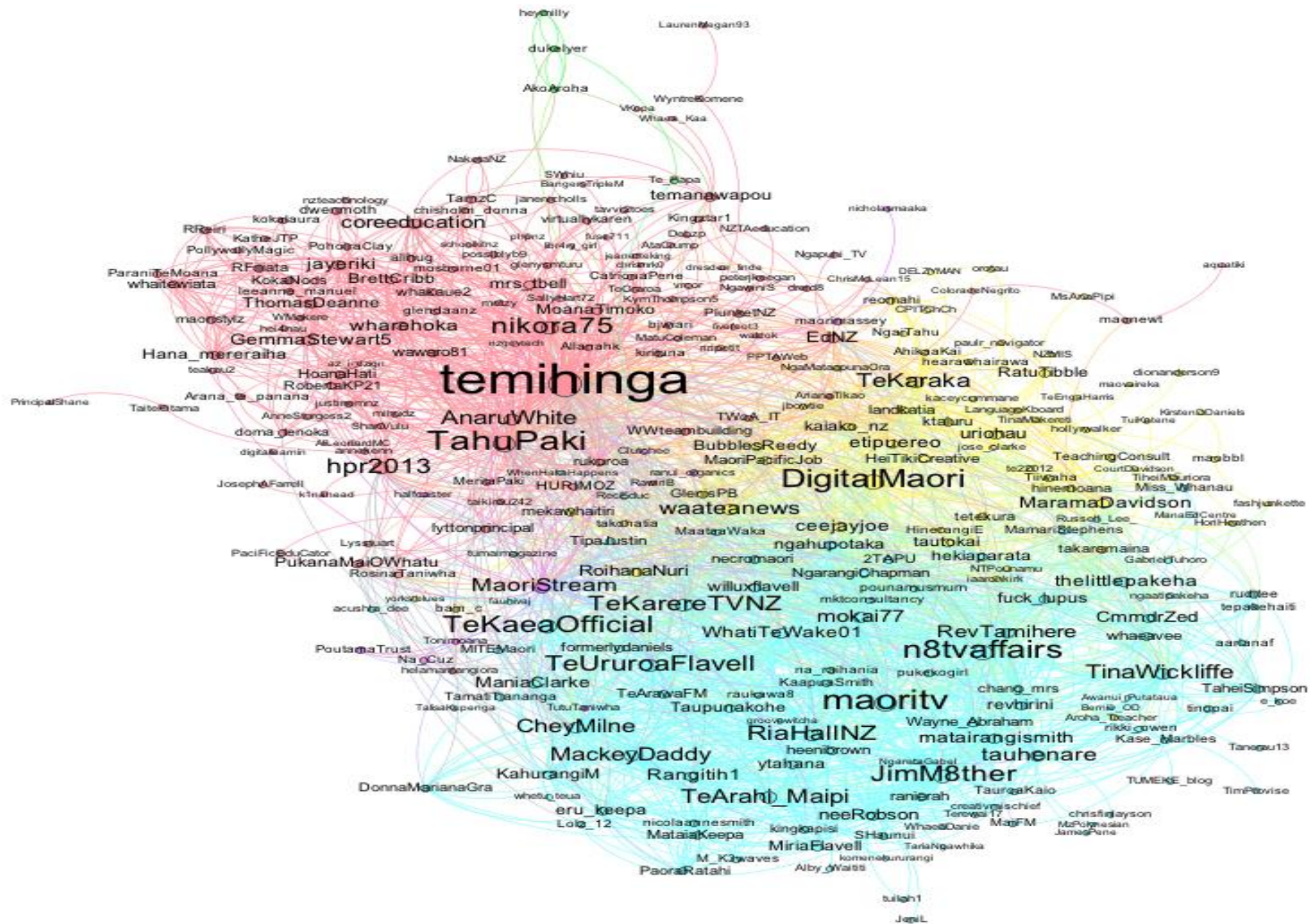


Figure 58: Māori twitter network

5.3.3.2 Heat Map

It is a difficult but not impossible task to determine the locations of tweet origin. A certain percentage of users have geolocation activated for their tweets, so when they tweet from a mobile device, a latitude/longitude gets recorded along with the tweet. Others have a text location as part of their Twitter profile. It is laborious converting those place names into latitude and longitude co-ordinates. Once done, a ‘heat map’ can be generated from the data. The heat map shown in Figure 59 was generated and shared by Professor Kevin Scannell¹³⁵.

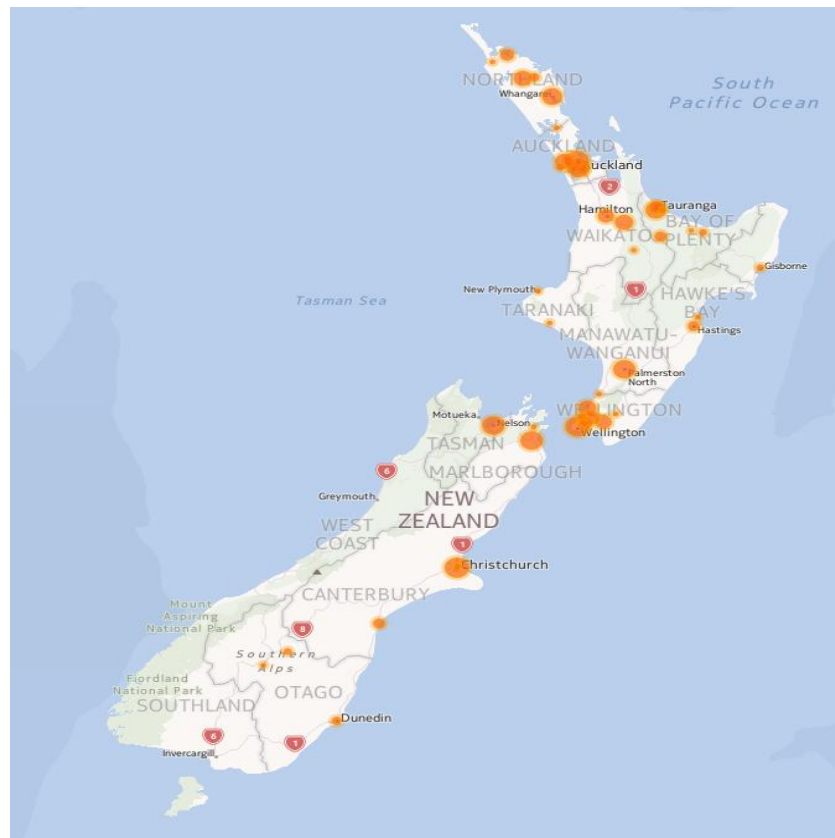


Figure 59: Heat map generated from Māori-language tweets

¹³⁵ Professor Kevin Scannell: personal communication (eMail): 6 December 2013

The heat circles represent the points of origin of Māori-language tweets. The size of the circle is proportional to the volume of tweets from that location. So, when the circle is small, this represents lower volumes of tweets. The heat circles show that the origins of the tweets tend to be from the bigger centres in New Zealand. A useful exercise would be to identify what determines the concentrated origins of these tweets. Apart from the higher numbers of people in the city areas, we have postulated that some of these locations can be matched to popular tourist destinations. A large portion of the centres can also be linked to the presence of institutions for tertiary education. Rotorua, the heat circle in the Bay of Plenty just below Tauranga, was the location for the 2013 Matatini Kapahaka Festival¹³⁶, a national competition that celebrates Māori culture and performing arts. This may account for the size of the circle given the relatively low population density. There are also two tertiary institutions located in the Rotorua region. Areas such as the northern part of the North Island are tourist destinations and have tertiary training institutions but are also relatively well represented by Māori-language speakers. There is a notable lack of Māori-language tweeters in other Māori-language strongholds such as the western and the eastern parts of the central North Island. This might be explained in part by these areas having poor reception for mobile phone users. Strategies for engagement from these regions would benefit from further directed research.

¹³⁶ see: www.tematatini.co.nz/

5.4 Māori Language Conversations on Twitter

Online conversations in a minority language are in evidence - the use of te reo Māori on Twitter is one example. The following outline and observations arise from two projects that have analysed tweeting in te reo Māori (Mato & Keegan, 2013; Keegan, Mato & Ruru, 2015). These particular projects investigated the extent that te reo Māori is being used in tweeting, identified some trends, and observed the impact of attempting to develop an online Māori-language community on the Twitter platform. Three characteristics of Māori-language tweets became apparent:

- tweeters are willing to engage in Māori-language conversations
- content, direction and duration of conversations are able to be influenced
- there were a high number of people who chose to follow participants without engaging in the conversations

Of particular relevance to this paper is the observation of what seems to be event-based spiking - where the number of Māori-language tweets and the numbers of tweeters appear to be influenced by specific events.

The Indigenous Tweets website provides statistics for each of the indigenous languages that it has profiled as discussed in Section 5.2 - Indigenous language tweeting. Indigenous Tweets identifies 335 users posting in te reo Māori (September 2013). The top three Māori-language tweeters have posted religious-based tweets that resemble translated passages from the bible. As discussed, the tweets are one-directional, do not invite interaction and appear to result from robotic scripts. Two of these Twitter profiles have a suspended status and the third has not posted since June 2013¹³⁷. The data retrieved 10 March 2014 shows number of tweets from these three profiles account for 68.4% of the total Māori-language tweets and, although the number of these tweets is significant they are not the result

¹³⁷ This is still the case – last checked 1 June 2017

of personal postings and therefore have not been included in the following analysis of Māori language tweeting. This has been done to ensure that the further in-depth analysis is not skewed by a few profiles (in this case three) and that the outcomes are reflective of postings by actual people.

5.4.1 *How many te reo Māori tweets?*

The number of Māori language tweets sent per month for the years 2011-2013 have been steadily increasing. Tweeting increased from 2011 to 2012 by 294% (1566 – 4611) and from 2012 to 2013 by 282% (4611 – 12999). In 2013 an average of 1083 tweets (and retweets) in te reo Māori were posted every month equating to 36.5 tweets per day. This is represented in Figure 60 as a collation of tweets per week. One can see that there are noticeable spikes.

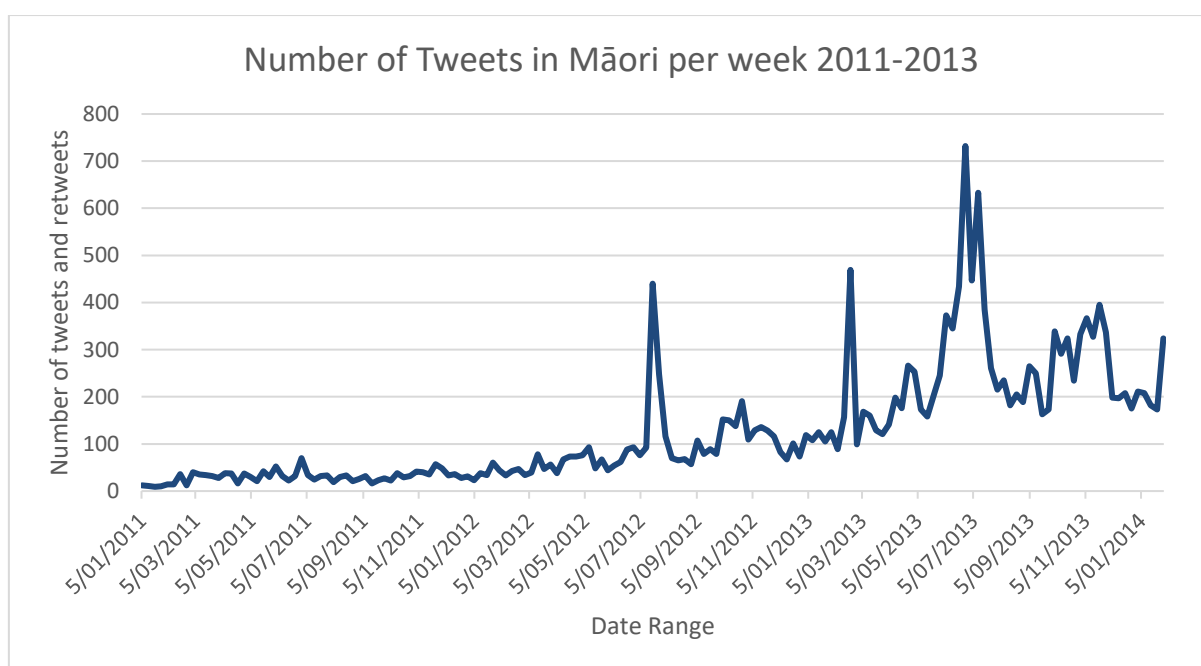


Figure 60: Tweets and retweets in te reo Māori per week 2011-2013 (data received 10/03/2014¹³⁸)

¹³⁸ Professor Kevin Scannell: personal communication (eMail): 4 February 2013

The spikes in July 2012 and July 2013 correspond to Māori Language Week - a government sponsored initiative that encourages all New Zealanders to support and promote the use of te reo Māori. The spiking in the last week of February 2013 corresponds to the 2013 Matatini Kapahaka Festival (see: www.tematatini.co.nz/). Clearly these two national events are significant and impact on when users choose to tweet in te reo Māori.

5.4.2 *How many are tweeting in te reo Māori?*

Unique tweeters of te reo have been identified for each week of the period January 2011 to December 2013. The data shows that, on average, the number of people that are tweeting in te reo Māori each week has almost doubled each year for 2011-2012 and 2012-2013.

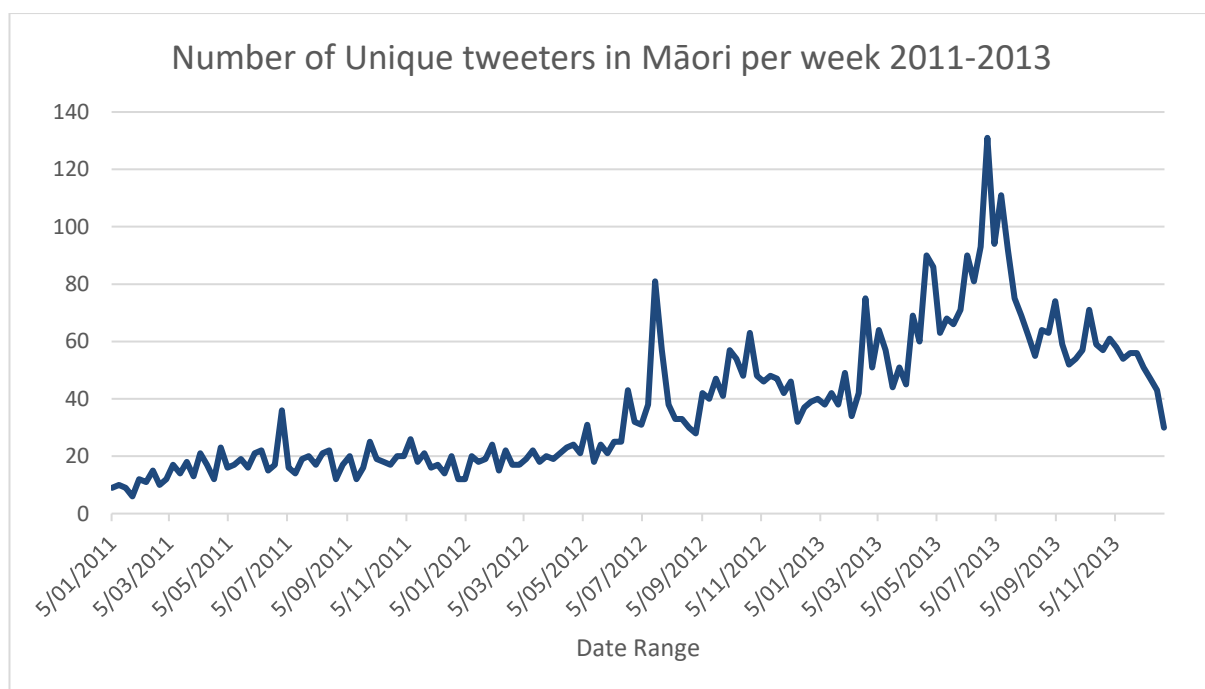


Figure 61: Unique tweeters in te reo Māori per week 2011-2013
(data received 10/03/2014¹³⁹)

¹³⁹ Professor Kevin Scannell: personal communication (eMail): 4 February 2013

Peaks are clearly visible during Māori Language Week in July 2011, July 2012 and July 2013. The peaking of unique users in February 2013 (see Figure 61) is not as significant as the peaking of Māori-language tweets in February 2013 (see Figure 60). This suggests that the event that occurred at that time (the Matatini Kapahaka festival) did not lead to a significant number of new people tweeting in te reo Māori. Rather, it suggests that people posted considerably more tweets in te reo Māori during that time. One might suspect that a comparative analysis of the tweets during the Māori language weeks and the tweets during the Matatini festival would reveal different content based on their contexts; the former favouring more introductory language tweets and the latter containing more performance appraisal tweets by more fluent practitioners of the language.

5.4.3 *Influencing Māori Language Tweeters*

Of the 345 profiles¹⁴⁰ identified in this section who were tweeting in Māori, only 65 (18.8%) have posted more than 100 tweets in Māori, half have posted eighteen tweets or less, and 85 (24.6%) have posted less than five tweets in te reo Māori. Many tweeters are using te reo Māori in a small percentage of their tweets. Almost 90% (298 of 345) of the users have posted less than 40% of their tweets in Māori. Of the 47 users who have tweeted in te reo Māori more than 40% of the time, less than half (22) have posted ten tweets or more. This suggests the community of Māori-language tweeters has only a dozen or so users who are interacting regularly in te reo Māori. Even so, when the conversations are mapped, there are clear and repeating lines of interaction. The lines on the Conversation Map link the people who are tweeting in te reo and who are engaged in conversation - see Figure 62.

¹⁴⁰ Data retrieved March 2014

5.4.3.1 Conversation Map



Figure 62: Māori-language tweets - linked conversations in New Zealand (2013)¹⁴¹

Similar to the Heat Map (Figure 59), the Conversation Map shows that much of the interactions on Twitter, in te reo, are occurring between people in the major cities. There are also significant numbers of Māori-language tweets being sent from some other less populous areas such as the top of the South Island and the far north of the North Island. Some of these locations do not have high concentrations of Māori-language speakers. As mentioned earlier, speculation around the conversations outside the main centres include the presence of tertiary learning institutions and

¹⁴¹ Professor Kevin Scannell: personal communication (eMail): 20 December 2013

some popular tourist destinations. Investigation into the content of the tweets would be one way to validate those speculations. Further research would be useful to determine why the less populated areas show high engagement on Twitter and to identify whether or not there are relationships between isolation in terms of less populated areas and the use of Twitter to engage in Māori-language conversations.

5.4.4 *Development of an Online Māori-language Forum*

This section reports on a project that aimed to identify issues and possibilities in terms of developing an online forum/community of users who would use Twitter to interact with others primarily using te reo Māori. More specifically, the objective was to determine motivations for tweeting in te reo Māori and to identify any strategies that would generate ongoing conversation. The general method involved identifying users who were already tweeting in te reo Māori, making contact and creating some conversation amongst those users. Since this was fairly new ground, strategies for engagement tended to be rather fluid. Certain observations and assumptions could be made and acted upon when a drop in interactions was observed. One such observation, for example, was that the time of day could have an effect on the continuity of conversation. It was found that tweeting at certain times for certain users could result in more optimal levels of interaction.

A Twitter account was created by an undergraduate research intern who used a number of strategies over an eleven week period to encourage the use of te reo Māori in Twitter. Selected users, who were already tweeting in te reo, were contacted with the aim of promoting discussion in te reo Māori and forming a small community of Māori-language tweeters. The users who were initially contacted were profiled in Section 5.3.2. Daily activities included posting questions or raising and commenting on topics or events that might spark some interest and generate conversation. It became evident that much of the conversations needed to be initiated by the researcher and users at times were slow to reply. When the topics

raised were mutually interesting there was some extended engagement. However, quiet patches were experienced. It appears that the time of day might impact on responses from others, for example; a reduction in Twitter conversations during the 5pm to 7pm period may be due to post-work commuting, after-work activity or dinner preparation. The Christmas period also had some impact on tweeting probably due to that time being largely family-oriented. It is also likely that the topics of conversation and the questions just weren't engaging enough; however, in such a short study it was easier to see what did work, rather than what didn't. Interestingly, retweeting resulted in contact from those who had gone quiet. While it is unclear to what extent this was successful, it is a strategy that requires minimal effort from tweeters.

The purpose of the study was to get a feel for the te reo Māori tweeting environment and to determine if the number of tweets in Māori could be pro-actively increased. The field work was somewhat self-fulfilling; the number of tweets in te reo Māori was increased by the researcher's tweets and responses to these tweets. This was an expected outcome. What this field work did provide was an opportunity to test the validity of the statistics that were being generated by the Indigenous Tweets website. All of the researcher's tweets were identified by the Indigenous Tweets website and correctly tagged as te reo Māori tweets. A difference in time zone meant the time stamps recorded with the tweets were different to the local time that the tweets were posted - again, an outcome that was expected.

In terms of the Māori-language tweeting environment, it was noted that:

- Users will respond in te reo Māori if the topic is of interest to them
- Te reo Māori tweeters are willing to converse with other te reo Māori tweeters
- Some users will use English in te reo Māori tweets
- Bi-lingual tweets tended to extend conversations
- A high number of people followed the conversations without directly engaging
- Tweeting appears to be less likely at certain times in the day.

When the topics raised were mutually interesting there was some extended engagement. In the attached conversation (Figure 63), the participants are discussing an American animated television series (Legend of Korra). However, at other times there were cases when it seemed that the questions and topics of conversation weren't engaging enough.

1. @smruru119 Nov Rawe! Nga whakaaro he pai ki ahau te mahi toi peeraa I te anime
2. @CmmdrZed19 Nov @smruru1 Ktk ko tēnei tō whakautu ki ahau? Ko tēhea tō tino anime?
3. @smruru119 Nov Ae, Mohio ana koe ki te naruto shippuden? peehea koe? @CmmdrZed
4. @CmmdrZed19 Nov @smruru1 Āe. Ahakoa, kāore au e mātakitaki ana. Pai ki ahau te anime ko Avatar: Legend of Korra. Kei te raruraru koe i ngā tohutō?
5. @smruru119 Nov @CmmdrZed ka mataki I tenaa hoki a ki taku moohio ka whakaatu he waahanga hou ..ae kei te raru ahau ki te mahi tohuto he mangere tooku waea
6. @CmmdrZed19 Nov @smruru1 Rawe! Mai i te timatanga o Avatar: The Last Airbender ka mātakitaki au. Haha he iWaea, Android rānei?
7. Ne? Me au hoki! Ko wai too character tino pai? A he android taaku @CmmdrZed @smruru1
8. @CmmdrZed19 Nov @smruru1 :) Ko Sokka pea. He haututū, he tāne pai hoki ia. Haha Pēhea koe? Tukuna te app ko Multilingual mō ngā tohutō.
9. @smruru119 Nov he tika tau he hatakihi a sokka I nga wa katoa he pai a kora me toph ki ahau he rawe ta raua mahi whawhai, kiaora mo te app hoki @CmmdrZed
10. @CmmdrZed19 Nov @smruru1 Āe, ka nui te mahi whawhai a Toph. Ko ia te tipuna o te huri mētera! Kei te hiahia au ki te mātakitaki i tērā ināianei haha
11. @smruru119 Nov @CmmdrZed. Hahha rawe! Ka pera ahau etahi wa mena ka korero ka pirangi te mahi! Arohamai me wehe inaianei kei ahau te training hei kona:)
12. @CmmdrZed19 Nov @smruru1 Kei te pai. Kia pai tō training! :) Mā te wā
13. @smruru120 Nov Poomarie!

Figure 63: Example of a Twitter conversation

Mixtures of Māori, English and bi-lingual tweets tended to extend some discussions – see Figure 63 (English words are evident in Lines 1,4,6,7,8,9,11,12). This might be a point to remember if it is suspected that users are shying away from tweeting because their grasp of the language isn't entirely fluent. A lack of fluency may also

apply to people who followed but didn't directly participate. Strategies that build on open, topical communications, creating safe environments for participation might have success motivating followers to engage, even if only retweeting. Developing language communities that are less concerned with generational differences and that foster content-driven engagement might have more success encouraging online involvement by those less confident about their fluency. One other strategy might be to seek help or advice on certain matters. It appears that people are only too willing to share information, resources and advice. This also noticeable on language-based sites where one can ask for ways of saying and expressing different things. One example during this Twitter project was the sharing by a user of an app name for applying the *tohutō* (*macron*) over a long vowel in a Māori word when it was noticed that it wasn't being used by one of the participants in a particular conversation – see Figure 63, Line 8 (Underlined).

5.5 Summary Discussion

An analysis of the Indigenous Tweets website has shown that tweeting is occurring for indigenous languages and that the number of languages and the number of tweets is increasing over time. The previous sections have shown that tweeting is being undertaken extensively by languages such as Euskara, Kreyòl Ayisyen and Cymraeg and having the ability to tweet has provided these languages with another opportunity to develop and flourish. The case for te reo Māori is not so convincing. It would be interesting to undertake some longitudinal studies to see if the number of tweets subsided after the initial excitement/honeymoon period. Observations from the Māori-language community show that creating and maintaining discussion threads requires some effort from those seeking to create an online community. However it is evident that a small number are actively using twitter to converse in te reo Māori. Whether this small group multiplies and gets saturation in the Māori language community, or whether the enthusiasm for this medium fades away over time is yet to be determined.

Note: Most of the statistics discussed in this chapter are based on data that were retrieved in 2013 and 2014. The comparisons and analyses are considered to be still valid, however, the research would benefit from further comparisons with more recent data. At the very least, current data may identify measureable impacts that may be attributed to the work performed within this research.

5.5.1 *Dissemination*

The top four tweeters of te reo Māori account for 70,918 tweets or 79.3% of the total te reo Māori tweets. This means that the remaining 331 users (98.8% of users) account for 20.7% of the tweets¹⁴². The top four users who post the most tweets in te reo Māori do so as offshore ventures and could be described as disseminating information as translated text without an agenda that would encourage online conversation in te reo Māori. The low numbers of followers for these particular users might be evidence of this lack of engagement.

It is possible that high-volume tweeters have a role in language visibility and long-term health. For te reo Māori, the top three tweeters are the result of Twitter bots. We have noticed that the tweets do not encourage interaction from other users which might be the reason for the relatively low numbers of followers. This seems to be the case for Gàidhlig as well. The highest tweeting in the Scottish language is done by sconewt and is also translated scripture from the Bible. There may be a case for this type of uni-directional tweeting at least in terms of language visibility. This may become more useful if readership numbers reflect an interest in the language and where one-way dissemination might be part of a broader strategy.

The top tweeter, 'newyddcymraeg', in Cymraeg posts news articles in the Welsh language. User @newyddcymraeg has over 2,000 followers. In a similar vein, the

¹⁴² Based on data collected 5 September 2013

user 'weedhsan', who is the top tweeter in the Somali language, represents a monthly Somali-based magazine. The magazine is published in a variety of major cities around the world. Although uni-directional in nature, the tweeting of news articles (with a reasonable following) and from a widely published, relatively popular magazine might have attributes that can be utilised by strategies aiming to promote the visibility of an indigenous language in global contexts. Further study would be useful to determine whether or not dissemination – including the religious-based tweets, have a role within language communities – even if just to gain a critical (readership) mass of sorts.

5.5.2 *Engagement*

Given the difference in levels of engagement in Euskara versus those in Haitian Creole and in Māori a comparative study would be useful. Since the Welsh have similar engagement percentages to the Basque, a comparative analysis between these two languages might prove beneficial as well. Initial comparisons show that the Basque population is about seven times greater than Māori and, at 28.5%, Basque have a higher proportion of the population speaking their own language when compared to Māori – see Table 27. It is likely that the engagement by Euskara speakers who are tweeting is far higher than the speakers of te reo Māori because of the vested interest and the implementation of language projects by the Basque, that embrace contemporary technologies for the extended use of their language. This is discussed in Chapter 2, however, further investigation might shed some light on engagement issues that may be of benefit when developing online Māori-language communities. The Basque have over 50 times more tweeters in their language than Māori and generate 52 times more tweets. In Euskara the top 20 tweeters account for only 7.8% of the Euskara tweets while the top 20 Māori-language tweeters account for 88.5% of tweets in te reo. This might suggest that comparative studies of Basque language strategies would prove beneficial for Māori in terms of language use within contemporary technologies.

Table 27: Comparative population statistics - Euskara/Māori

	population	speakers	% speakers of population	% of speakers tweeting
Euskara	3,500,000 ¹⁴³	1,000,000 ¹⁴⁴	28.5	1.70
Māori	565,000 ¹⁴⁵	62,150	11.0 ¹⁴⁶	.54

It is likely that the Euskara tweeters are far more fluent in their language in general than the Māori tweeters. Even assuming that all of those tweeting in Māori are fluent speakers it is obvious that the tweeting percentage of fluent language speakers is considerably lower for Māori than Euskara.

Table 28: Comparative tweeting statistics - Euskara/Māori

	# users	tweets in language	average tweets/user	# tweets top tweeter	% tweets top tweeter
Euskara	17,042	4,629,179	272	43,464	0.94
Māori	335	89,391	267	29,810	33.35

Indigenous Tweets tracks postings in selected languages only. Given that there are thousands of minority indigenous languages, it is difficult to gauge the level that minority language speakers engage with each other online in their language. We suspect that overall the ability to tweet in one's own language isn't being done to any significant degree by most minority-language speakers. However, for those that do it is another avenue for language revitalisation and, perhaps, a potential strategy for those that don't.

¹⁴³ Source: (Encyclopaedia Britannica, 2013 & Magee, 2011)

¹⁴⁴ Source: (Encyclopaedia Britannica, 2013a)

¹⁴⁵ Source: (Statistics New Zealand, 2013)

¹⁴⁶ Able to speak te reo well or very well- Source: (Statistics New Zealand, 2013)

5.5.3 *Influencing Māori-language tweeting*

There is evidence that the volume of Māori-language tweets and the number of unique users who tweet in Māori are influenced by significant events. Events with a wider national focus, such as Māori Language Week where the population is encouraged to ‘give it a go’, the number of tweeters increase as users from all parts of the community and with varying levels of fluency will take part. Another national event, the Matatini Kapahaka Festival, tends to have a more specific audience and, while the numbers of Māori-language tweets will increase dramatically, the increase in the number of unique tweeters is less noticeable by comparison. It might be the case that the followers and participants of Te Matatini are generally more fluent in te reo Māori, given the theme of the festival, and are therefore more confident and more likely to post their tweets in te reo Māori.

It is unclear whether or not social media will foster intergenerational language transmission at this time. There is little evidence to suggest this would be a suitable forum for Māori to do so. What is clear is that conversations are occurring in te reo Māori. The conversations appear to disregard age differences and so do not have a vertical feel, as might be expected with intergenerational conversations. Rather, engagement is inclusive and gives a more horizontal, or lateral impression. We have used the term intra-generational to convey this perspective¹⁴⁷.

¹⁴⁷ This is discussed more fully in Chapter 2

5.5.4 *Creating an online Māori-language community*

In an effort to identify users of twitter that could have an impact in a language community a filter was applied to Māori-language tweeters: more than 50 tweets, more than 50% of tweets in te reo Māori and more than 50 followers. These criteria identified a more active, vibrant, communicating language group who, it could be suggested, were actively involved in using twitter to communicate in te reo Māori. For te reo Māori there were 5 profiles that matched this criteria; a Māori individual, a Māori television programme, a Māori health programme, a Māori language course, and a group supporting Māori language week. These profiles suggest that it is Māori that are seeking to support te reo Māori in the twitter sphere. However with 134,000 speakers of te reo Māori (Waitangi Tribunal, 2010) the fact that only five profiles match this criteria is somewhat disconcerting – especially since four of those profiles represent institutions.

Initial contact with two of the profiles who were identified as posting more than 50 tweets of which more than half were in te reo Māori and with more than 50 followers, has proven useful and positive. The users are kaiako (*teachers/facilitators*) with He Pikinga Reo described earlier as a language-teacher development program. Both kaiako say their goal is “... to get the reo out there” and they aim to increase the quality and quantity of the use of te reo Māori in this medium. Although there is an expectation from their organisation to promote te reo using whatever technology is available and suitable, the kaiako say they are often thrilled to be conversing in this medium with people that they have never met before in person^{148 149}.

¹⁴⁸ Personal conversation with Wawaro Te Whaiti, 31 October 2013

¹⁴⁹ Personal conversation with Te Mihinga Komene, 4 November 2013

It became evident that when the topics of conversation were mutually interesting there was some extended engagement by other users. Quiet patches and a lack of interaction may have occurred because the conversation threads were not interesting. Other reasons might include the time of day such as work hours and the time immediately post-work. Larger family-based events such as holiday periods appeared to also have some impact on tweeting. It was sometimes difficult to distinguish definitive reasons for reduced interactions, but it was clear that what did work was more readily identifiable than what didn't work. Interestingly, retweeting resulted in contact from those who had gone quiet. Although it is unclear to what extent the retweeting strategy was successful and how much revived interaction was a result of retweeting, it is a possible engagement strategy that requires minimal effort from tweeters.

At times a mixture of Māori, English and bi-lingual tweets tended to extend discussions. This might be a useful strategy to engage users who are less fluent in the language or less confident in its use. This may also apply to people who followed but didn't directly participate. Strategies that would motivate these and other users to engage, even if only retweeting, might be useful, in terms of start-up numbers, for developing an online language community. Such strategies might include soliciting help or advice on certain matters. People seemed very willing to share information, resources and advice. Long term strategies would benefit from investigation into how these interactions could become self-sustaining.

Although the research to influence te reo Māori tweeting took place over a fairly short period, some useful insights have been gained. Firstly, there are users who are prepared to engage conversationally in te reo Māori. Secondly, it is possible to extend the conversations by way of timely posts that are of interest to other tweeters. Thirdly, a number of registered users are following posts and dialogues without engaging directly within the conversations. One reason may be lower levels of confidence or fluency in the use of te reo Māori. Given that mixing English and Māori tweets tended to extend the dialogue, bilingual conversations may be one

strategy for encouraging participation by followers. Another strategy alluded to seeking help and sharing advice as a means for allowing users to share resource and information. In any case, an opportunity exists for further research that might identify how Māori might be motivated to tweet in their own language.

5.5.5 *Māori-language tweeting*

The Indigenous Tweets website has identified that indigenous languages are using Twitter to converse. Some languages such as Basque, Haitian Creole and Welsh appear to be widely used in active conversation. Other languages have a small number of users tweeting and only show a small number of tweets. There does seem to be a large number of tweets in te reo Māori (over 90,000), however, many of these tweets are the result of religious or commercial dissemination. Encouragingly, there does appear to be a number of individuals who are using Twitter to converse in te reo Māori. The numbers suggest there are two types of conversational te reo Māori tweeters: those that are passive and post a low percentage of Māori tweets, and those that are active and post a high percentage of Māori tweets. It seems that the passive tweeters become more active if there is a purpose for them to do so; Māori Language Week and the kapa haka (*traditional Māori performing arts*) competitions of Te Matatini being the two examples that appeared prominently in the statistics.

Some active users were willing to converse with our researcher through retweeting, the following of tweets, the marking of favourites and in personal conversations, especially when the topic of the tweet was interesting to them. In general it appeared that the active tweeters of te reo Māori were acting in isolation; they were choosing when and when not to respond to tweets in Māori. There did not appear to be a large community of Māori-language speakers using the Twitter platform to converse with each other, but instead a small community that has doubled in size each year for the 2011-2013 period. In a large language community on Twitter one would consider

the use of hashtags as a means of categorising and promoting Māori-language tweets. Hashtags involve the use of the hash (#) symbol followed by a keyword, for example #tereo. They are a means of organising tweets so that people can locate particular discussions and topic threads, making it easier for them to find, follow and contribute to conversations. Prior to attempting to develop a Māori-language community on Twitter we hadn't considered using hashtags. During this research we considered there weren't enough conversation threads to warrant investigation into the use of te reo Māori hashtags. In hindsight hashtags may have proved useful for extending conversations or introducing new topics and existing points of view. Any future work in this area may find this line of thought beneficial.

The top five Māori-language tweeters were discussed previously and it was noted that a disproportionately high number of tweets were generated by a few users.

Top 5 Māori-language tweeters 2013

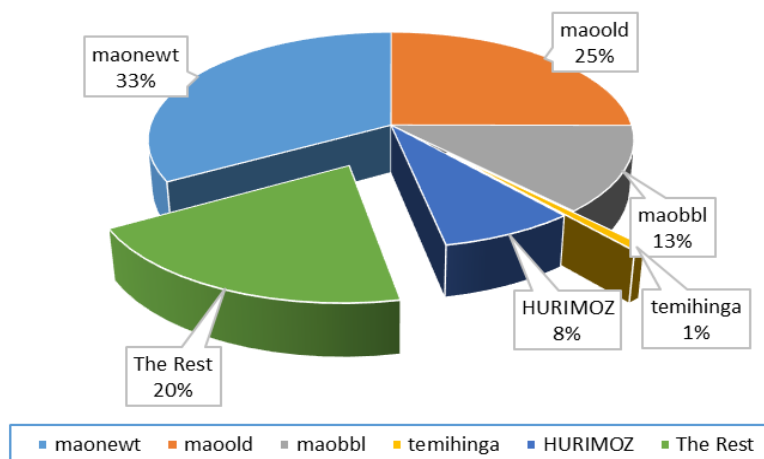


Figure 43: Top 5 Māori-language tweeters 2013

The breakdown for the same profiles was updated for 2017 as shown in Figure 64.

Top 5 Māori-language tweeters 2017

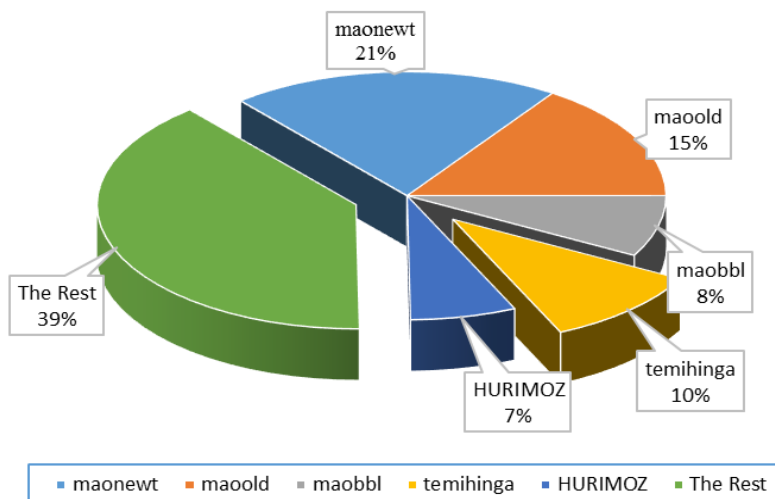


Figure 64: Top 5 Māori-language tweeters 2017¹⁵⁰

¹⁵⁰ Data Source: <http://indigenoustweets.com> - retrieved 16 May 2017

The number of Māori-language tweets has increased significantly. Data retrieved May 2017¹⁵⁰ shows the original four profiles with a focus on dissemination now account for 51% of the tweets (down from 79%) – see Figure 43 and Figure 64. The profile 'temihinga' now accounts for 10% of all te reo Māori tweets – up from 1%. The following chart (Figure 65) is a comparison of the 2013 and 2017 data and shows a clear reduction in the overall percentage of the four disseminating profiles, and large percentage gains by other users. Given that the top three tweeters have not tweeted since 2013, this was to be expected. The gains in conversational te reo Māori tweeting are heart-warming nonetheless.

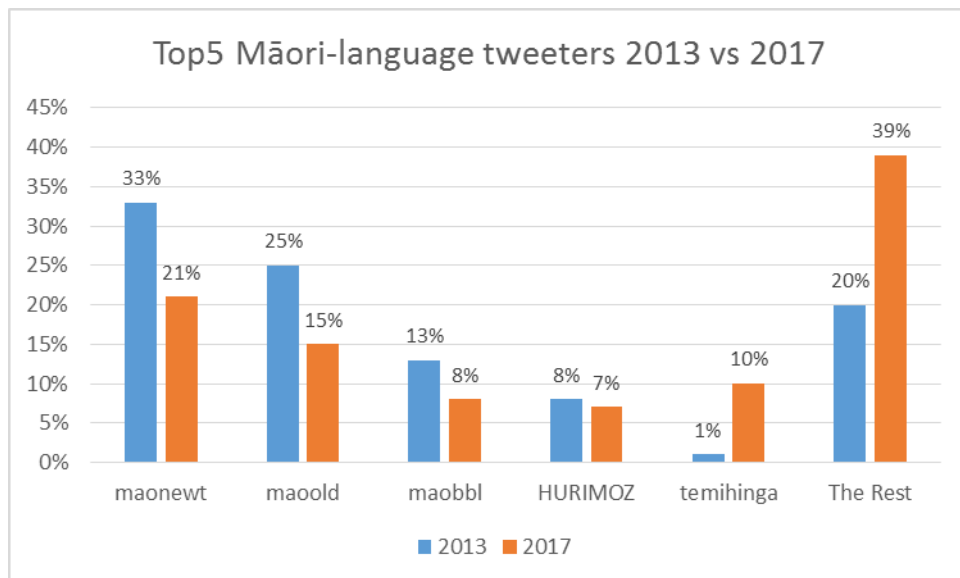


Figure 65: Top 5 Māori-language tweeters 2013 vs 2017

From a technical perspective Twitter appears to be an appropriate medium to support indigenous-language conversation, however, to assist with language revitalisation the ability to use this medium needs to be realised and promoted by the indigenous-language communities themselves.

5.5.6 *Activating the passive users*

During our attempts to create a Māori-language community in Twitter, some individuals were identified who were focused on engaging others online in te reo Māori. But a reasonably large proportion chose to ‘watch proceedings’ without engaging directly. If wider engagement were an objective, then moving the watchers - followers and non-followers alike - should be a part of strategies aimed at increasing the numbers of participants and the use of te reo Māori in these forums. Those who follow participants in the conversations - and by extension follow the conversations (to some degree) - but do not engage directly, might represent a potential pool that, once tapped, would escalate engagement numbers relatively quickly. Understanding the motivations that discourage direct participation and assisting these passive users to actively engage using te reo Māori should be a focus for such strategies. Further research that results in encouraging followers to participate in the conversations would be useful if only to increase the number of those who engage and, therefore, increase the overall use of the language. It might be argued that increasing the numbers of participants may not necessarily increase the quality of language use. However, language quality might be derived if the language is being used in a manner that might engage conversation, encourage ideas, improve fluency and generally add to language visibility and language health.

5.5.7 *Creating nurturing communities*

The research has shown that the number of people using te reo Māori and the number of postings in te reo Māori can be significantly impacted. Observations suggest the application of specific strategies have some success in developing forums where others are willing to interact using te reo. For example, context-based discussions, centred on common issues or areas of interest, have successfully fostered online Māori-language conversations. The potential exists for much more research in this area; however, instigating online Māori-language communities,

accessible using mobile technologies (as is the case with Twitter) would seem to benefit language strategies seeking to create environments where te reo Māori is used more often by more people. Additionally, converting just small percentages of the online conversations between Māori, from English to te reo, would help to reinforce the use of te reo within contemporary technologies as a normal occurrence.

It is clear that the online conversations and tweets in general are able to be affected in terms of frequency and volume. The way certain events impact differently suggests it is possible to apply different strategies to develop different language communities and to target cross-sections of each community. It is reasonable then to expect issues such as fluency levels and safety of language use can also be supported using particular strategies. It is also reasonable to envisage an overlapping of communities where more fluent speakers are able to foster engagement by those less fluent but perhaps equally as interested. Intuitively, supporting less fluent and less confident language users would surely result in increased interactions in te reo Māori. Again, converting just a small percentage of the English-language conversations that occur between Māori-language speakers would highlight some traction for te reo Māori in this arena and perhaps realise some gains for the language overall.

6

Summary and Conclusions

Of the world's 6,500 or so languages, only a handful of languages (5%) are spoken by the majority of the world's population. The impact of the major languages, the 5%, upon the remaining minority languages has been such that at least half of the number of current languages will cease to be spoken by the turn of this century. Given that the major languages are spoken by 95% of the population, the loss of one minority language might be considered to be a relatively minor event. Even so one would recognise that the impending loss of 3,000 of those languages might constitute a reasonably significant occurrence. Would the resulting loss of wisdoms, knowledge and particular world views, that are distinctive to specific cultures and uniquely expressed by each of their languages, register as an event of some importance in terms of the global consciousness?

For Māori, the protection and affirmation of te reo Māori and Te Ao Māori within the wider societal fabric of Aotearoa/New Zealand is a conviction that appears to be gaining some traction – at the very least in terms of day-to-day language visibility. The strategies of cementing the visibility of te reo Māori within national broadcasting platforms, notably radio and television, whānau-centric pre-schooling and Māori-medium schools appear to be paying some dividends in successfully elevating a positive profile of Māori and te reo Māori nationally. In terms of this research alone, the translations of various application interfaces, as described previously, would be testament to that notion.

Is the use of te reo Māori suitable within digital technologies?

Te reo Māori is being used within digital technologies as discussed in previous chapters. Whether or not the language is suitable within the researched applications and whether or not the technologies are suitable vehicles for the language is probably best answered by future levels of engagement with digital technologies using te reo Māori. The fact that the Māori language is already being used in these environments suggests that the investigations might be better served focussing on promoting prolonged engagement rather than pondering whether or not te reo is suitable or how the language might be unsuitable. Much of the feedback from the user studies reflect an initial surprise and then expressions of pride and pleasure to encounter te reo Māori within those environments. Later feedback is less enthusiastic but responses reflect issues of design and usability rather than suitability as such.

Translated application interfaces - awareness, engagement, perception.

In terms of the selected technologies, the reported awareness of application interfaces that can be deployed using te reo Māori was very low. The participants of each study were largely unaware of the availability of the translated interfaces and first encounters engendered expressions of surprise, pride and pleasure. The initial overall reactions were positive.

Following engagement with the interfaces, the general feedback was less positive. The responses consistently cited new (Māori) words, unfamiliar uses of words and translations out of context as the predominant barrier to an expedient and painless completion of the requisite tasks. Moments of frustration were compounded by unclear uses of labels used to identify icons, actions and menu items. The reported difficulties meant that navigation was often hesitant and slow. Although most of the participants would have preferred to remain connected to the Māori-language interfaces, there was a clear and unanimous agreement that they would not hesitate to revert to the English-language versions to get the job done – more especially if time was of the essence.

The overall perceptions were laced with feelings of frustration and irritation. Most notably, the translations of some words and the unusual uses of other Māori words were cited as sources of angst and confusion. The general consensus was that fluent speakers of te reo would experience some difficulties with the Māori-language interfaces and less-fluent learners would definitely struggle.

Analysis of the general feedback might consider that most of the participants were unaware that the interfaces were available and that the sudden, relatively short exposure to te reo Māori in a new environment might have been enough of a distraction to hinder some aspects of the engagement. Given that all of the assigned tasks were completed and that all the participants had some previous expertise with the technologies using the English language, it is also likely that navigation and ease of task completion were similarly hampered by that previous competence. Based on the overall feedback, there appears to be a case for an overarching classification of translations for digital environments. This may not be so helpful in the situations already mentioned but would at least provide a future consistency of word uses and translations across multiple platforms and applications.

It is reasonable to expect that more time spent using the Māori-language interfaces would result in a familiarity that would eventually result in easier navigation and task completion. Longitudinal studies aiming to identify motivations for extended engagement might consider understanding and highlighting the reported difficulties in context. This may alleviate or alter some of the perceptions that have been described. When issues of novelty and acceptable translation can be negated, focus can then be applied to usability and design with a view to prolonged interaction.

Can translated interfaces support the ongoing health of te reo Māori?

The considered use of translated application interfaces as part of a Māori language strategy will pay dividends in terms of engagement, language visibility and contemporary relevance. The effectiveness of translated interfaces may well be determined at a tactical level within the various strategies - by creating awareness (marketing), managing the way the interfaces are perceived (promotion) and having some plan as to how and where the interfaces are used (deployment). Engagement will then be a key strategy for effecting language health.

Social networking

Te reo Māori is being used in social networking. Through the use of existing functionality based on the Twitter platform, we were able to determine a Māori-language profile and gauge the impact of specific events on the incidence of tweeting in te reo. Māori-language tweeting can be influenced. Significantly, tweeting can be influenced at a national level. This is described in Section 5.4.3 where the occurrence of a particular event was reflected by a sharp increase in the number of profiles tweeting in te reo while the timing of a different national event drew a corresponding increase in the number of Māori-language tweets. These two events occur annually. The increased use of te reo Māori on the Twitter platform during these two events suggests there are opportunities to affect the use of te reo Māori in this and other social networking platforms at a national level.

We have shown that there are people willing to engage conversationally using te reo Māori in Twitter. Although this particular research took place over a short period of time, some useful methods were identified that encouraged and prolonged engagement. It should be no surprise that mutually interesting topics resulted in longer conversation threads. There were also times when the conversations were difficult to maintain. Early morning and early evening we assumed were times when people were eating (breakfast and dinner) and travelling to and from work. Customary holiday periods were also a time of reduced interaction. In this sense the

incidence and timing of online conversation mirrors what happens offline where the urgency to do something (eat) or be somewhere (work) is a bit more pressing than being engaged in conversation. Using bi-lingual tweets to extend conversations is also a (probably unconscious) feature of face-to-face conversation. Additionally, retweeting, effectively repeating what someone-else has said, revived some conversations online. Further longitudinal research might confirm that what works for conversational face-to-face engagement also works online. The singular point of difference is being able to interact at ones leisure, i.e. with longer pauses between comments, while still remaining a part of the conversation.

There are clear opportunities for the development of online forums were people are willing to interact conversationally using te reo Māori. If wider societal engagement was an objective then the ability to access these forums using mobile technologies would seem to be a useful way to take advantage of the groundswell of virtual connection. Shifting small percentages of conversations from English to Māori would, over time, begin to reinforce the natural use of te reo Māori in a variety of domains and situations. Additionally, the creation of theme-centred forums, based on a selection of mutual interests, might provide environments where less-fluent language speakers are also able to engage – more especially if the conversations were fostered by participants with higher levels of fluency.

Can social networking be used to support the long-term health of te reo Māori?

From a technical perspective Twitter appears to be an appropriate medium to support indigenous-language conversation. Facebook could also be a likely online medium, however, investigating the Facebook platform was not in the scope of this research. There is potential for much more focussed research around creating online conversational space within social networking with a view to increasing engagement using te reo Māori. Encouraging the followers, those who appear to track the conversations without engaging directly, to interact somehow would serve to not only increase the number of participants, but might also illicit a wider range

of viewpoints and ideas. One would expect that over a period of time, improved levels of conversational fluency would be a realisable outcome.

Te reo Māori is a viable option within various technologies as evidenced by the increasing use of the language on a range of contemporary platforms. The current use of te reo provides visible cues on a variety of technologies. Translated interfaces provide opportunities for language promotion and extensive language visibility. Additionally, the development of an online language forum has shown that conversations in te reo Māori can be successfully fostered using social media. Understanding the differences between the static visibility of translated interfaces and the dynamic nature of online conversations can be a huge asset for language strategies once issues of awareness, perception and extended engagement are successfully addressed.

7 Future Work

The use of te reo Māori in digital environments would benefit from overarching strategies that aim to derive synergies from a range of initiatives. One obvious area worthy of attention appears to be the consistency and application of generic, recognisable translations. How such an umbrella authority or panel is formed and how particular individuals are selected or appointed to this group should arise from discussions amongst language and technology leaders aiming to increase the usability of technologies that are able to be deployed using te reo Māori. Ensuing issues of awareness, perception and increased engagement could similarly be addressed centrally by a campaign of communication and promotion.

There is much potential for future work in digital environments. Longitudinal studies, over much longer time periods would be useful for identifying trending data and longer-term effects of external influencers. Specific language communities - for example, education institutes – could be encouraged to use social networking platforms to complement standard program communication lines and eventually program delivery. Further research will be necessary to determine motivational factors of engagement, engagement using te reo Māori and tailored strategies for the development of language communities online. Conceptually, the application of language strategies in online social contexts would need to be cognisant of the differences and similarities between conversations that occur online and those that occur offline.

We noted that the tweeters who represented Māori broadcasting organisations only posted a small percentage of their tweets in te reo Māori. The organisations that were profiled included a television news program that broadcasts primarily in te reo Māori, a television show aimed at young Māori and an urban radio station. Some contact with these organisations might shed some light on why they post mainly in English. Alternatively contact may also motivate them to increase their Māori-

language content on this platform. Interestingly, engagement in some cases by young Māori appeared to originate from within one of these Twitter profiles, but actually occur on other linked platforms such as Instagram, Facebook and Snapchat. Attracting and fostering engagement using te reo Māori across multiple platforms represents an exciting opportunity for further exploration.

The bulk of the Māori-language tweets and the conversational tweets are originating from the larger centres. There are a significant amount of tweets originating from less populated areas – many of which are not known as Māori language strongholds. Content-based and context-based research would be useful if only to understand why there are high levels of Māori-language tweets originating from these relatively isolated regions. In terms of investigating the content, it would then be possibly to gauge the incidence of bi-lingual tweets and the extent that code-switching occurs within the conversations. The investigation into content may also shed some light on why there are so few tweets originating from other equally isolated areas that also have significant concentrations of Māori-language speakers.

Further analysis that could be undertaken on the content of the indigenous-language tweets includes:

- Which technical terms are being translated and which ones aren't?
- How are diacritics used and is this device-dependant?
- What topics are discussed most?
- How can hashtags be used to promote and to prolong online conversations using te reo Māori?
- How much content is conversational (bi-directional) and how much is just dissemination (uni-directional)?
- How often does language switching occur in conversations and why?
- What are the motivations for choosing to tweet in an indigenous language?

Prolific tweeters who have high numbers of followers but who post low percentages of Māori-language tweets may add value by adding to the visibility of te reo Māori

and perhaps by encouraging more language use on Twitter. A useful investigation would analyse the tweets to see how often others, both followers and non-followers, engaged with those rare in-language tweets compared with how often people engage with the tweeters who post mostly in te reo Māori.

It would be useful to analyse the tweets from the followers of the top Māori-language tweeters. This has been done for Irish by Professor Kevin Scannell who says that the results were striking. In all, “there were tens of thousands of people following mostly-Irish tweeters, but more than 80% of them had never tweeted in the language, not even once. Of the few who had, the average percentage in Irish was something like 1-2%”¹⁵¹. Arguably, the followers of in-language tweets should be primary targets for language revitalisation efforts because they have some ability in the language - since they are already reading tweets in the language, and they are actively following top tweeters; implying they also have some interest in the language. For some reason most of the Irish followers never use the language themselves. A comparable study for Māori might prove insightful and offer ideas that could increase engagement in online Māori-language conversations.

It is not clear what the effect of diaspora and widespread communities have on indigenous language use in social media. How are social networking platforms being used by indigenous people to remain in contact with each other? When it does happen, how often do they use their own language? Is there value in comparing this with various widespread communities such as Euskara, Welsh, Haitian Creole and Māori? Can the ‘spread of ethnicities’ be compared? With help we have been able to show tweeting densities and conversations that are location-based within New Zealand. A very quick scan has revealed that Māori-language tweeting is being done by people who are not in New Zealand. It might be useful to determine what was being tweeted in terms of content, how often tweets are being sent, and whether or not these ‘overseas tweets’ are being posted within conversations. Understanding

¹⁵¹ Professor Kevin Scannell: personal communication (eMail): 20 November 2013

the reasons that motivate people who are not in New Zealand to tweet using te reo Māori might be useful to framing dialogue in a manner that attracts engagement from a broader, perhaps global, following. At the very least this might provide an outlet for Māori-language speakers to use their reo in a continuous fashion when they are in predominantly non-Māori locations.

It would seem that social media offers a connectedness without the usual societal gatekeepers and that the usual offline protocols driven by such things as age, gender and ethnicity are not as clearly replicated in the online environment. It might also be the case that issues such as credibility, experience and mana (*status or prestige*) of particular tweeters (when their identities are known) would have more impact on the perceptions of the parties within the conversations as opposed to generational differences. These might be factors to consider when encouraging and fostering the use of te reo Māori by less fluent or less confident speakers of the language. These latter notions were observed but not fully investigated as part of the research. Further investigation might prove useful – especially in terms of providing a relevant foundation for future online language strategies.

There is a case for investigating the learning and engagement styles of younger generations who have known digital technology all of their lives. Referred to earlier as digital natives, this generation tend to be prolific users of mobile digital technologies. Given that younger generations are deemed to be critical for the ongoing health of a language, the development of relevant strategies would warrant a focus on the engagement motivations and learning styles of younger users of digital technologies.

Mā te hangarau te orange o te reo Māori e tautoko ai?

Can technology be used to support the ongoing health of the Māori language?

More and more minority language groups are utilising digital environments as a means of connecting with others in their native tongues. Increasingly language initiatives that had a focus on education and community language development are turning to the use of technology in efforts to move from programs of language acquisition to those of language use, wider communication and networking. Social networking platforms have become a popular way for people all around the world to connect with others from the same language group in spite of geographic separation. The use of social networking platforms has resulted in an unprecedented uptake, especially by younger generations. Educational institutions are increasingly using this technology as part of their delivery. Since young people are considered to be crucial to language revitalisation strategies, there are obvious benefits to providing forums where they are able to connect online and where the use of their own language is regarded as normal. In the context of the ongoing health of te reo Māori, digital technologies should be viewed as a vehicle. How that vehicle is designed and deployed will determine how effective it can be. In that light, the answer to this research question should be 'yes'.

8

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9

Appendices

Appendix 1 - Usability Study Questionnaire

Tasks/Questionnaire



Ethics Committee, Faculty of Computing and Mathematical Sciences

How Useable is te reo Māori on a smart phone?

ID No.

Tasks:

- Send and receive a text message
- Connect to and search the internet
- Connect to Facebook and write a post

Questionnaire

1. How understandable were the screen commands in te reo Māori?

2. What were the main difficulties in using these interfaces i.e. were there new words, how correct was the use of te reo Māori, were the instructions and options difficult to follow, why?

3. How did it make you feel to see your language used in this manner?

4. Do you think using te reo Māori in these and similar interfaces would encourage the use of te ore Māori (written and spoken)?

5. How would you suggest normalizing the use of these interfaces in te reo Māori so that others would be more likely to use them?

6. If the interfaces were in te reo Māori (but switchable to English) how useful would this be to encouraging the use of te reo Māori?

a. How do you think people who are not fluent in te reo Māori would react?

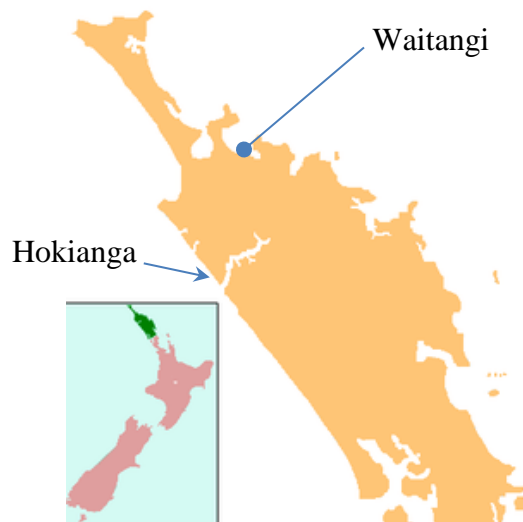
(Following the use of the English-language interfaces)

- 7. Which language interface were you more comfortable using? **Māori** **English**
- 8. Which language interface was quicker or easier to use? **Māori** **English**
- 9. Which language interface would you prefer to use? **Māori** **English**

a. Please explain why

10. Do you have any final comments or thoughts?

Appendix 2 - Hokianga, Waitangi (map)



Appendix 3 - Auckland Region (map)



Appendix 4 - Waikato Region of the North Island (map)

