

Indigenising knowledge of Telecommunications and Smart Phones.



Figure 1 John Gerrard Keulemans 1842-1912, *Huia Heteralocha acutirostris* 1888.

Author: Karaitiana N Taiuru

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Abstract

An introduction, explanation and indigenizing of current day natural phenomena radio technologies that are used for technologies such as 3G, 4G and 5G for mobile phones and indigenises modern day smart phones. Then, the paper compares pre colonial communications and traditional knowledge to explain how traditional Māori used natural phenomena to communicate into space and across vast land and ocean spaces.

There is a lot of misunderstandings, or little to no knowledge about technology, especially radio spectrum and the Treaty claims for spectrum. This paper intends to highlight the spectrum claims and make it clear to all Māori and Iwi that spectrum is a traditional taonga owned by all Māori.

Radio Spectrum is merely a natural phenomenon that was not unlike any pre settler communications used by traditional Māori. Modern day smart phones are tapu in a manner somewhat similar to a wakahuia. Hence, there needs to be some cultural mind shift in how Māori use and treat smart phones.

Table of Contents

Mihi	4
Background	5
Introduction	6
Waitangi Tribunal Claims 224 and 776	8
Pre colonial communications.....	9
Whaikōrero	11
Traditional Knowledge of Huia (<i>Heteralocha acutirostris</i>), Wakahuia and Heavens.....	12
Heavens of Māori Traditional Knowledge	12
Wakahuia and Papahou	13
Comparison of Huia, Waka Huia and the 12 Heavens with Smart Phones and Radio Frequencies.	14
Huia the modern day communications vessel.....	14
Frequency names.....	14
Land line phone tikanga versus mobile phone	16
Traditional customs versus modern day usage	17
Images and videos.....	17
Voice	17
Apps	18
Conclusion.....	19
Table of Figures.....	20
References	21

Mihi

This paper acknowledges the generations of Māori who lost their culture and language due to government assimilation. Native Schools were formed under the Native Schools Act 1867. Native Schools banned te reo Māori from being spoken between 1867-1969 (Simon, Jenkins, Morris Matthews, & University of Auckland. Research Unit for Maori, 1995).

Māori religious beliefs and Traditional Knowledge were made illegal (after years of discreet suppression) in 1907 (Tohunga Suppression Act, 1907). The Tohunga Suppression Act was not repealed till 55 years later in 1962 with the new legislation (Maori Community Development Act 1962).

In addition, The New Zealand government commissioned Hunn Report of 1961 made recommendations on social reforms for Māori resulting in the official policy of the 'relocation' of Māori from rural traditional villages to the cities with the provision of accommodation, employment and general assistance in adjusting to a new life (J. K. Hunn, 1961). There were social issues of Māori trying to adjust to Pākehā social norms and ignoring their culture during the urban drift that was recommended in the Hunn Report (Ritchie, 1964).

I want to acknowledge those kaumatua who witnessed the Internet and Personal Computer (PC) revolution that began in the mid 1990's for mainstream New Zealander homes, who knew it would have impacts on Māori culture, but who could not explain how, express two world views or what was their apprehension to the Internet.

Background

In early 2000, many kaumatua openly expressed their dislike for the Internet and computers. These kaumatua knew the impacts technology would have on our traditional belief systems that have been practiced for centuries. Unfortunately, the government and education providers of the time and indeed now, were and are pushing out technology with no Māori input or consideration for Māori. Despite the fact, that in addition numerous tech savvy Māori individuals, there were at the time also 25 various Māori ICT groups who represented a wide range of Māori ICT interests¹, the government appointed a small non representative group called Ngā Pū Waea².

In the late 1990's and early 2000, Māori were being forced to ignore tikanga and traditional knowledge and were led to believe that there were commercial opportunities to get Iwi, hapū and whānau out of social and economic distress. Neither has proven overly successful to any great extent to date (Chapman Tripp, 2017: p5). The result is, Māori are either ignoring, or simply have no understanding of their culture with technology; thus it has become normal to ignore common Māori cultural values and tikanga. The ultimate result of colonialism by a settler.

The term "Digital Divide" was a term coined by the government of the day and successive governments to describe "the gap between information 'haves' and 'have-nots' or, put another way, who has access to the Internet and who does not" (StatsNZ, 2004). Māori were over represented in the digital divide statistics (Parker & New Zealand. Te Puni, 2001). Efforts to close the digital divide were simply an act of digital Colonisation (Taiuru, 2015).

Digital colonialism is the new deployment of a quasi-imperial power over a vast number of people, without their explicit consent, manifested in rules, designs, languages, cultures and belief systems by a vastly dominant power (Renata Avila, 2017). A new form of imperialism by technology conglomerates for commercial gains; academics and researchers to advance science, technology and research (Taiuru 2017). Digital colonialism has impacted Māori culture like a Tsunami that has swept across the country destroying everything in its path.

¹ <https://www.taiuru.maori.nz/publications/analysis-maori-ict-groups/contents/>

² <https://www.tpk.govt.nz/en/whakamahia/nga-pu-waea/terms-of-reference>

Introduction

It is intended that this paper will allow modern day tech savvy and generation millennial Māori, ICT whānau, government organisations and their staff, Knowledge/Information workers and groups (non Māori) to at least consider some Māori traditional knowledge and beliefs associated modern day telecommunications and smart phones.

A common colonial myth is that Māori were not aware of space, navigation and communications. Yet Māori had intimate knowledge of the stars, planets, constellations and natural phenomena, weather and they were certainly aware of how to communicate using psychological and natural phenomena in addition to their heave oral culture.

In traditional Māori society there were men whose primary role was to study the stars and planets. Every star, planet and constellation had a name. These men were consulted by fishermen, Gardner's, travelers and voyagers. Western research has now confirmed traditional knowledge, that Māori did indeed voyage all around the Pacific (maybe further using the starts for navigation. Maori knowledge of the heavenly bodies and their movements was in several instances a scientific one, as, for instance, when Māori navigated their vessels during deep-ocean voyages, and when he watched for the heliacal rising of stars to mark the commencement of the Maori year and of certain seasons and activities (Best, 1922).

If we consider that the health framework for Māori "Te Whare Tapa Whā" states:

"The spiritual essence of a person is their life force. This determines us as individuals and as a collective, who and what we are, where we have come from and where we are going" (Durie, 1984)

A traditional Māori analysis of physical and mental manifestations of illness will focus on the wairua or spirit, to determine whether damage here could be a contributing factor due to smart phone usage and spectrum.

This paper will discuss and compare the extinct Taonga Species³ the Huia (*Heteralocha acutirostris*) and the containers that stored its feathers and other taonga called Waka Huia and Papahou. The paper will then compare the cosmological aspects of the Huia, the features of a wakahuia and purpose of a Papahou with the modern-day smart phones.

The Maori heavens are compared to the different radio spectrum bands used by telecommunication providers. The traditional story of Tāne obtaining the three baskets of knowledge from the last heaven is introduced as a modern way of traditional communications.

The paper will then discuss traditional Māori beliefs, many of which are stated in this paper but that are largely practiced only by government agencies such as: Archives NZ⁴, The National Library⁵ and Ngā Taonga Sound and Vision⁶; on the marae and in our homes; but not by Māori individuals and Iwi organisations with digital devices that are used to interact with others on a daily basis.

³ <https://www.mbie.govt.nz/dmsdocument/4979-karaitiana-taiuru-submission-pvr-act-review-issues-paper>

⁴ <http://www.archivesnz.govt.nz>

⁵ <https://natlib.govt.nz>

⁶ <https://www.ngataonga.org.nz/>

This paper then concludes that some considerations that a digital device should be considered tapu and a taonga.

Waitangi Tribunal Claims 224 and 776

A 1999 Waitangi Tribunal report “WAI 776 The Radio Spectrum Management Development Final Report” said Māori have rights to the natural phenomenon radio spectrum. Radio spectrum is what most people refer to as the 2G, 3G, 4G and no 5G mobile networks⁷. The Tribunal by majority agreed that iwi had a ‘prior interest’ in radio spectrum. It was a natural resource that Māori, who are Treaty partners, have equal rights to.

Instead of recognising the findings: the Crown created a charitable trust known as the Māori Spectrum Trust, which later became Te Huarahi Tika Trust and gave it a one-off payment of \$5m⁸. The deal was widely criticized as a “gift of blankets and muskets” (A reference to stolen land). The money was used to enter into a commercial relationship and shareholding in the telco 2degrees, and the right to purchase 3G spectrum. Later, the initial 2degrees shareholding was restructured into a new shareholding in Trilogy, the parent company of 2degrees. In 2018, the remaining shares were sold leaving Māori with no shareholder rights.

Greame Everton brought a new bid for an urgent hearing for 4G Radio Spectrum (WAI 2224) but it was declined 2013 ahead of the 4G spectrum auction. WAI 2224 is still yet to be heard. The government of the day declined to accept that Radio Spectrum was a Taonga and opted instead to provide \$30 million to a Māori ICT fund. Over 10% of that fund went back to government for administrative costs.

Almost 20 years since Rangiaho Everton took the claim to the Tribunal, the government now has the opportunity to right past wrongs when it makes its 5G allocation.

⁷ https://forms.justice.govt.nz/search/Documents/WT/wt_DOC_68205950/Wai776%20final.pdf

⁸ <http://www.thtt.co.nz>

Pre colonial communications

Traditional western sciences are slowly recognising traditional knowledge as a science and discovering that Indigenous traditional knowledge is in fact based on facts and science that has yet to be proved or been able to adequately be explained by western methods.

Pre colonial Māori did not have Internet and other physical devices we have today in 2019. Hobsons Pledge have stated that the WAI 2224 Radio Spectrum claim absurd as Māori were not aware of the technology⁹. In contradiction to that, Māori did communicate with each other via vast distances, travel the Pacific using the stars and communicate with the dead and gods as described in this paper.

Our traditional knowledge has multiple stories of learned people communicating with gods and of wairua of individuals, spirits travelling through space and time, and the ability of the living to speak with the dead which is often practiced in rituals today, one in particular is called a pōwhiri.

It is still fresh in people's memories of the ability of pre colonised Māori who could have whole conversations with each other without physically speaking to each other. It was accepted that this was via a natural phenomenon.

I was personally told by the late Waho Tibble, and Doug Hauraki former CEO of the Māori Education Trust, that the former was called Te Ngutu Kura. Te Ngutu Kura was a name gifted to me by Waho Tibble. While Waho Tibble stated there is no direct translation of the term, he provided me with this whakapapa of the term (represented with no macrons as he gave it to me):

Na Te Ngutu Kura ka pupuke te Mahara
Na te Mahara ko te hinengaro
Na te hinengaro ko te wananga
Na te wananga ka tu te tikanga
He taonga nui te wareware.



Figure 2 Te Ngutu Kura

Above is the graphical representation of Te Ngutu Kura as conceptualized and designed by Te Turumakina Duley of Tūhoe.

There is also tikanga that is still common today called Hinengaro which all Māori possess. Every day usage of 'hinengaro' could include instances such as:

1. I was about to ring/txt you when you rung/text me
2. I was just thinking about you and then you visited/rung me
3. I was holding photo of 'so and so and then you rung me

⁹ https://www.hobsonspledge.nz/spectrum_claim_resurfaces_as_5g_nears

4. and many more examples that western society refer to as instinct, fluke, or luck.

Whaikōrero

Whaikōrero (Oratory) are formal speeches generally made by men during pōwhiri and in social gatherings.¹⁰ Whaikōrero is a traditional and integral element of tikanga Māori. Whaikōrero is viewed as a hallowed realm, with only a select few amongst many reaching the pinnacle¹¹.

The art of Whaikōrero is one common example of Māori using natural phenomenon to communicate with space, the dead and gods. The structure of a whaikōrero include four key aspects that are relevant to the Huia and infer a traditional usage of frequencies.

The order and the way whaikōrero occur vary between Iwi and regions. This section is only intended as a brief outline to highlight that some traditional communications are still performed today.

1. The first part of a whaikōrero is the Tauparapara or ritual chant. This is where the orator speaks to the gods and seeks their protection and to honour the visitors. It is in this pose that the speaker assumes the role of the Huia.
2. An acknowledgement of the dead is made by paying tribute to the dead who live on in the spirit realm and often the recent dead are acknowledged.
3. An acknowledgement to the ancestral house is made. The speaker pays tribute to the central ancestor and descendants through the generations until the present. Traditional belief is the spirits are in the house.
4. An acknowledgement of Mother Earth or Papatūānuku giving thanks for all living things is made.

The speech maker is assuming the same role as the Huia, as their role allows them to communicate from the Earth, to the earth, to gods in various heavens and to the dead. A privileged position that only a few are entitled to do so.

¹⁰ <https://www.tetaurawhiri.govt.nz/en/learn/tikanga/whaikorero/>

¹¹ <https://www.maoritelevision.com/shows/whaikorero>

Traditional Knowledge of Huia (*Heteralocha acutirostris*), Wakahuia and Heavens

Traditional Māori knowledge for some Iwi, states that there are 12 heavens. For the purposes of this paper I have used Takitimu as their traditional knowledge is more readily published. But in parts of my own Iwi, Ngāi Tahu, some believe either eight, ten or twelve heavens and that the heavens are accessed via the primary stars including Rehua.

Traditional knowledge states that Io Matua Kore (Io the Parentless who was always existed without beginning or end - the supreme god) resided in the highest heaven. Each heaven has kaitiaki or attendants: a male and a female. Rehua is the male senior attendant, while Ruatau the senior female attendant of Io. They were employed by Io as messengers of Io, and so visited the earth and other realms on their errands (Best, 1922: p.p 99).

Io wanted Tane Mahuta to travel through the heavens to obtain the knowledge for the human race from the 3 baskets of knowledge (the origins of Data) that resided in the last heaven. In order to deliver this most important message to Tāne, Io instructed Rehua to provide the message to Tāne.

Rehua travelled to the 1st heaven and took from his own head a bird, pure white in color. The bird was called Manutea. Rehua gave Manutea instructions to travel down to earth and to find the highest mountain on earth called Maunganui (Great Mountain). It was here that Tāne was summoned to receive the message from Manutea, that Io wanted Tāne to climb the heavens and retrieve the sacred wananga (Three baskets of knowledge).

Tāne told Manutea that he accepted the message and would make his way to the 12th heaven. Satisfied with Tāne's response, Manutea returned to the First heaven where Rehua was awaiting.

As a gift to Manutea, Rehua transformed his body to black to represent Te Kore (The Void). Rehua then added more feathers to Manutea's tail to make twelve in total and left the white tips to mark the twelve heavens. Manutea was given a new name to go along with the new look – Manu Huia or the Huia Bird.

The Huia feathers were a taonga to Māori. Each tail feather of the huia represented one of the twelve heavens of Io (see below).

Although the Huia only lived in the southern North Island and has been extinct since 1907, the Huia's tail feathers spread throughout New Zealand because they were highly valued and were given as koha among iwi to show great respect or exchanged for other valuable goods such as pounamu. Tipped feathers were worn by Chiefs and some warriors to indicate status and mana. The Huia tail-feathers were also used for the ancient war-plume called a marereko which consisted of twelve huia feathers (Tregear, E. 1904: p.p 243-244).

Heavens of Māori Traditional Knowledge

The twelve heaven names and their attendants as known in Takitimu (Best, 1922).

Heaven	Primary Name	Secondary Name	Attendants Names
1 st	Te Toi-o-nga-rangi	Tikitiki-o-rangi	Apa-watukura; Te Apa-mareikura
2 nd	Tiritiri-o-Matangi	Tiritiri-o-rangi	Te Apa-tahurangi; Te Apa Kahurangi

3 rd	Rangi-naonao-ariki	Rangi-puhi	Te Apa Rahui Kura; Te Apa Ruao
4 th	Rangi-te-wawana	Rangi-te-wiwini	Te Pa Matangi-Nui; Te Apa Mata Ruwai
5 th	Rangi-nui-ka-tika	Rangi-nui-taupuru	Te Apa Kauwhanga; Te Apa Tapuhi Kura
6 th	Rangi-mataura	Rangi-mataaho	Te Apa Nuku; Te Apa Tahu Mutu
7 th	Rangi-tauru-nui	Rangi-tauru-rangi.8. Rangi-matawai	Te Apa Kautu; Te Apa Tangirea
8 th	Rangi-matawai		Te Apa Kahu Taranga; Te Apa Kokohine
9 th	Rangi-mairekura		Te Apa Wahi Rangi; Te Apa Wahu Kura
10 th	Rangi-parauri		Te Apa Wahi Rangi; Te Apa Wahu Kura
11 th	Rangi-tamaku		Te Apa Puhi Rangi; Te Apa Puhi Kura
12 th	Rangi-nui-a-Tamaku		Te Apa Poporokewa; Te Apa Poheua

Wakahuia and Papahou

Waka Huia is the term given to the treasure box of a chief or of a family to store Huia feathers. They were eloquently carved, usually from hollowed out Totara with a lid. The waka huia was suspended from a rafter of a chief's sleeping hut, or in a whatu rangi upheld by a single pole of considerable length. It is important to note the tapu nature of the wakahuia and that it was too tapu to be placed on the ground.

Papahou is a term used for a waka huia in the far north (Phillipps, 1963: p.p 22). A Waka Huia and Papahou were also used to hold many small treasured items of adornment other than huia tail feathers. Combs for the hair, tiki, pounamu and bone ornaments, valued feathers and other small treasures were all retained in the papahou under a very special tapu (Phillipps, 1963).

Inspired by the Waka Huia, in Te Arawa. A Māori design company have proposed a seating range to hang and when needed, unfolded to allow the taonga of the poutama and raranga texture to complement the spiritual connection between heaven and earth (Fraser et al, 2019).



Figure 3 Whakapapa O Nohoanga - Waka Huia by Ngā Aho

Comparison of Huia, Waka Huia and the 12 Heavens with Smart Phones and Radio Frequencies.

Huia the modern day communications vessel

In modern times, Huia and or the attendants of each heaven are the physical translators and vessels that takes messages from one device to another via spectrum. Once on earth, Manutea was instructed by Rehua to find the highest mountain on earth so he could communicate with Tane, similar to the procedure for a cell tower on earth, or for any individual who is familiar with a rural setting trying to find a high point to gain cell reception.

For many, a cell phone or other digital device is their primary means of communication for family, personal and work. The Cell phone contains all of an individual's contacts, photos, important notes, passwords, emails, bank details, credit card details and is often used as a way of authenticating our identity with banks, government and emails. All of this personal property, albeit digital, is a modern day taonga, highly valued to the individual phone owner. It is also likely a taonga to the individuals whānau, especially if the individual owner of the cell phone became too ill or deceased. Accessing some of that information will be essential.

The Huia feathers differ from different regions to being bigger and brighter than other regions, therefore more appealing to some iwi than others (Phillipps, 1963: p.p 23). A similarity to today's modern phones that almost all act the same but are visually more appealing to some than others. Apple iPhone and Samsung Galaxies are two examples.

The wakahuia or papahou were never placed on the ground (Papatuanuku) where food was prepared and people sat. In modern day society we would never place a photo of people or especially the dead on a seat, the table where we eat from, or take the photo to the toilet, yet it is common practice to do so with a smart phone. Perhaps there is also a lesson for digital devices to not be placed on the ground, on seats, and on tables where food is eaten.

Therefore, our digital devices should be considered as a modern day form of a papahou. When we further consider the cosmological representation the huia feathers that came from a bird that could communicate with into space and back to earth, and the fact that a special storage box was called a wakahuia, then it would be reasonable to assume that a smart phone could also be called a wakahuia.

Frequency names

The Institute of Electrical and Electronics Engineers (IEEE) and its members inspire a global community to innovate for a better tomorrow through highly cited publications, conferences, technology standards, and professional and educational activities. IEEE is the trusted "voice" for engineering, computing, and technology information around the globe¹². The IEE has published a standard for the letter designation of radar-frequency bands. These codes are used by some engineers for radar, satellite, and terrestrial communications.

¹² <https://www.ieee.org/>

There are other published frequency bands, of 10 and less frequencies that could be compared to other tribal beliefs.

3-30 MHz	Wavelength: 100-10 m	Band: HF
30-300 MHz	Wavelength: 10-1 m	Band: VHF
300-1000 MHz	Wavelength: 100-30 cm	Band: ULF
1-2 GHz	Wavelength: 30-15 cm	Band: L
2-4 GHz	Wavelength: 30-15 cm	Band: S
4-8 GHz	Wavelength: 15-7.5 cm	Band: C
8-12 GHz	Wavelength: 7.5-3.75 cm	Band: X
12-18 GHz	Wavelength: 3.75-2.50 cm	Band: Ku
18-27 GHz	Wavelength: 1.67-1.11 cm	Band: K
27-40 GHz	Wavelength: 11.1-7.5 mm	Band: Ka
40-75 GHz	Wavelength: 7.5 mm-4 mm	Band: V
75-110 GHz	Wavelength: 4 mm-2.73 mm	Band: W

In modern day comparison, the bands are the equivalent of the need to have a physical component to communicate with each different band or part of a band. The lower heaven could not communicate to the higher heaven (frequency). In 2006 Telecom updated its technology making the 025 cell phones of no use as the lower frequency (heaven) could not communicate with the higher realm¹³.

Again, a comparison to Rehua's ability and that of a communications device.

¹³ https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10405541

Land line phone tikanga versus mobile phone

In the 1980's as a child brought up in Māori communities, almost every home I remember that had a landline connected telephone, it was attached to the wall. Often these were communicational phones that would have a different ring tone for various homes or whānau.

These telephones were never in the kitchen or dining room, but usually in the hallway. There is no food consumed there, no personal hygiene tasks, it is not a place to sleep and there were no photos of the dead on the wall. In recent years there has been debates about installing phones in the whare kai of marae. This relates to a traditional belief that you do not associate tapu property with food and eating.

I believe the placement of the telephone was an intentional and deliberate move to have a phone in a common place where the callers' s mauri could enter your home and leave in a safe place to the caller and to the home.

Some consideration of how and when we use smart phones could be considered. I would suggest that at least, cell phone usage in marae and tangi could be considered in appropriate.

Traditional customs versus modern day usage

With the digital revolution, the introduction of the Internet, personal computers, digital camera's and especially smart phones: Māori culture continues to be ignored. There is a wide spread acceptance that digital does not have the same cultural requirements as with physical objects. This is the ultimate achievement of any colonial weapon; subtle and widespread forced change of a traditional belief system.

Images and videos

In Māori culture we do not put photos of the living and the dead together. We don't put photos of the dead on the table we eat off nor on a chair we sit on. Our heads are sacred and anything that touches our head becomes tapu.

Yet it is socially acceptable to have photos of the living and the dead on a digital device and to even put the device on the table while we eat. It is common practice to store photo's of living and tipuna on a smart phone. It is also common practice to stream live and record tangi, including of the deceased. Taking photos of the deceased is also not uncommon.

John Rangihau explains the process of gathering and learning new information:

I talk about mauri and some people talk about tapu. Perhaps the words are interchangeable. If you apply this life force to all things – inanimate and animate – and to concepts, and give each concept a life of its own, you can see how difficult it appears for older people to be willing and available to give out information. They believe it s a part of them, part of their own life force, and when they depart they are able to pass this whole thing through and give it a continuing character. Just as they are proud of being able to trace their genealogy backwards, in the same way they can continue to send the mauri of certain things forward (King, 1978).

Traditional knowledge also states that a person could use something of your body or possession to curse you or to make you die. A common story taught in schools is about Maui turning his brothers into dogs and turning himself into a bird to visit the underworld. In modern day scenarios, learned people can manipulate photos and videos of people. A recent trend is "Deep Nude Fakes" where a photo can be manipulated to appear as the person is naked, despite the person not being naked in the original photo.

If we consider traditional beliefs that every living thing has a mauri and a wairua. Anything you touch or any image, shadow, reflection etc. leaves a part of your mauri on it. Therefore, our digital devices should be considered tapu as they contain the mauri of all of the people and living and dead things you have photos, video and audio of.

In the very least, a lot of caution needs to be exercised with photos of people and significant to Māori and Iwi objects.

Voice

Our traditional knowledge warns us of our voice being used against our will. In the digital age this is also a common threat that many do not consider.

One story tells of Maui stealing his Auntie's voice in a calabash to use her voice to trick the other aunts into allowing him to use wind to win a race and marry two women he wanted.

I do not recall any kaumatua leaving voice mail on phone land lines or in recent years voice mail on my mobile phone.

We need to be cautious about when and where we record ourselves in the digital age. Especially with voice recognition technology.

Apps

Apps are convenient and enable us to do new things, be more productive and offer us entertainment. Security experts warn of the privacy dangers of apps and how intrusive many apps are. Traditional Knowledge warns us about things such as apps.

Tane Mahuta was travelling to the heavens to retrieve the 3 baskets of knowledge. But his brother Whiro wanted the knowledge instead, so he sent mosquitos to attack his brother. We need to consider that apps are similar to the 3 baskets of knowledge and that the mosquitos sent by Whiro can be thought of as the faceless companies and individuals who garnish our personal information and data from apps. Examples include Facebook, Twitter and Instagram who currently claim perpetual ownership ad rights over all your images.

The currently accepted translation for Hacker is “Murere. Perhaps it is time to reconsider the translation being “Whiro”?

Conclusion

Current generations are culturally ignorant of the technological impacts on Māori culture and traditional belief systems due to decades of government led cultural assimilation. Future generations will blame digital colonisation.

Pre colonised Māori had intimate knowledge of stars, planets and other natural phenomenon that were used for communications and navigations. The fact that Iwi categorised spiritual bands of a hierarchy of phenomenon such as modern day scientists do with radio spectrum also shows an understanding and a belief of such communication technologies.

If our devices and computers contain photos therefore mauri, then the device is tapu and should be considered a taonga. We should therefore consider if we put out devices on a table we eat from or if we use the device to scroll social media or the internet when in the toilet. We need to consider what we record and how we use that information.

In Māori culture the head is tapu, as is anything that touches the head such as Huia feathers. Most cell phone users will place their cell phone to their ear, therefore to their head. In traditional beliefs, this would make a smart phone tapu.

When an image is emailed or placed on the Internet the issue is more serious as than your images are duplicated all over the world and travel via cables in the earth like blood through artificial veins that violate Papatuanku; or via invisible signals, naked to the human eye, through the air and space. These waves going through other people. Our mauri travelling thru anyone in the way.

Table of Figures

Figure 1 John Gerrard Keulemans 1842-1912, Huia Heteralocha acutirostris 1888.	1
Figure 2 Te Ngutu Kura	9
Figure 3 Whakapapa O Nohoanga - Waka Huia by Ngā Aho	13

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