

My Master's: A TE ĀO MĀORI LENS ON EMERGING DIGITAL TECHNOLOGY©



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He Mihi Nui

He mihinui ki a koutou, ōku Ātua, Papatūānuku me Ranginui, Tāne, Tangaroa, ōku tupuna, ōku koro, kui, ōku mātua, tōku tane, ōku tamāriki, ōku mokopuna, toku whānau whānui ki Motatau Tu te Ao, Tu te Po, ki Kareponia, Awanui hoki, mo to koutou arohanuini.

Ki a koe, Pā Māori, nga mihinui, mihi mahana, mihi aroha.

Ki a kōrua, toku kui, toku māma, ka mokemoke au ki a kōrua. E kore au e wareware kia kōrua, te aroha, te mana wāhine Māori.

I would also like to acknowledge many people, many...

- T.F.L.- This opportunity just sprang out of the ether and has changed my direction whilst allowing an old passion to come back to life.

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EXECUTIVE SUMMARY

This is a research into the possible effects of algorithmic bias on Māori in Aotearoa New Zealand by first looking at the effects of mono-cultural, historic institutional racism/bias on Māori.

I examined the simple solution of offering a Tikanga Matatika, Maori framework to be used in digital technology innovation, to offer new insights and values to a predominantly non-Māori industry, to break the homogeneity of thought and mitigate against bias.

Including research and literature reviews I was to test the draft framework on businesses. Covid-19 made face to face working with teams more difficult, for more reasons than physically working with them. It became a series of interviews and conversations with individuals of iwi, hapū, companies, organisations, departments.

The simple finding is that people are not ready for a Tikanga Matatika, framework. It is too many steps ahead. Algorithmic Bias is the tip of the iceberg. The iceberg itself, the real issue is that there is a deep and historic chasm between Māori and European Pākehā in Aotearoa.

In general Māori do not trust to share their knowledge with Pākehā and non-Māori. Pākehā and non-Māori, while recognising they should engage with Māori and our values, worldview, feel nervous and awkward about that relationship. They recognise they don't know as much as they could or should about Te Ao Māori and Te Tiriti o Waitangi, and therefore the thought of actually adopting Tikanga Māori, Māori values makes them uncomfortable.

Before a Tikanga Matatika, there first needs to be honest and open conversations about this elephant in the room, this faultline that lies beneath Aotearoa, New Zealand society, the broken relationship between Māori and European Pākehā first then the non-Maori living in Aotearoa, New Zealand. We need a Tikanga Matatika Korero, a framework to govern those conversations.

The Algorithm as an Assumption

Emerging digital technology has and continues to change how decisions are informed and made across diverse practices. Human data is easier to collect, analyse and process into actions that can affect all individuals in any given population. The New Zealand government makes important decisions about our health, education and other needs based on the collection and analysis of data collected from New Zealand individuals. The process from data collection through analysis to decision can be automated through the use of algorithms and artificial intelligence. These algorithms have been based on, and are modified by the collection of data from individuals so far, from our digital identity held on sites like RealMe, to our financial status, to how much power a household uses.

There are many benefits to this technology, from helping me find a job or a home based on the information the algorithm has about me, helping me find the best or quickest route, can prompt me about upcoming events, bills, predict economic forecasts, weather forecasts, tell me the personality-type of a potential employee, love-match etc. Seriously, digital technology helped us grab hold of the facts of Covid in real time, helped with tracing, share new medical information, and get supplies where they were needed most, quickly.

But where there is benefit, there is also potential harm from the adoption of technology by society such as predicting algorithms (assumptions based on our data) that deliver 'fake news', or tools that determine who will get health insurance, homes, mortgages or who will be resuscitated, or is likely to re-offend.

Here is one example in Aotearoa, New Zealand, but it won't be limited just to us. Housing NZ have put sensors in houses, ostensibly to measure the health and energy efficiency of the house. Understandably Housing NZ wants to look after the occupants and houses. That's great for the occupants. But, the technology that collects that data can collect other data not for its intended purpose, like how many

people are living in the house, their daily routines and habits. The problem is that people don't own their data, they have no data sovereignty, therefore the Government or other companies and organisations who do own it get to do with that data as they wish. They can sell it, use it for things beyond the purpose of the initial capture, leaving people, subjects, essentially colonised. They will not reap any rewards from the collection and use of their own data, essentially the fruits of their labour. People's personal rights and freedoms are at risk here. Do tenants get a say on whether they want that technology in the house or how that data is used? If they are given the dignity of a choice, some live under the threat that if they say they don't want that, then they may not get the home. It perpetuates the inequality of economic circumstances that people who own their own homes or rent at market values have freedoms but people who have low economic status don't.

Some tech companies are understanding this dilemma, like Te Whare Hauora, who are governed by tikanga Māori, Māori values. They are offering the service that collects data but strictly for the purpose agreed to, and they don't own the data, they are kaitiaki of the data, they look after it on behalf of the people to whom the data belongs. They will not sell it to interested parties.

Māori have been colonised by a group of people with a distinct set of history, culture, values and needs, that are completely different to te Ao Māori, a Māori worldview and our inherent values. Throughout the history of the colonisation of Aotearoa, New Zealand, the dominating culture has made assumptions about the people they have colonised, based on their own world views, values, ways of doing things, which they still judge as unequivocal. Just one example of an assumption; Pākehā believed one not only could, but had the right to own land, and it was owned by an individual. This assumption is what the British law is founded on, protection of individual rights to own property. Compare that with a Māori worldview that is based entirely on a 'WE' basis, care for, are responsible for, have a relationship with the land, and the rest of Nature, and our entire laws are based to uphold that assumption. Because Pākehā dominated through weapons and disease, their assumptions became embedded into the law, and our being, our language, beliefs, customs, values were made criminal offences.¹

Colonisation 2.0

The colonising potential of algorithmic processes is global and while not all may recognise the risks, there are similarities that Māori and other colonised peoples are familiar with.

"Under classic colonialism, Europeans dispossessed native peoples of their land, exploited their labour, exercised extraterritorial governance, and perpetuated dependency and plunder through strategic underdevelopment."² Corporations like the New Zealand Company played a pivotal role by taking ownership and control of critical infrastructure, including ports, waterways, and railroads. Sovereignty over physical nations was at stake.

If the railways and maritime trade routes were the "open veins" for British and European colonisation back then, today, digital infrastructure takes on the same role: "Big Tech corporations, Like Google, Facebook, have become the old NZ Company, India Company etc. They seek to own our information, our stories, our DNA. They use proprietary software, corporate clouds, and centralised Internet services to spy on users, process their data, and spit back manufactured services to subjects of their data fiefdoms."³ Information, data sovereignty is the new power grab.

In Aotearoa New Zealand, algorithmic bias, digital colonisation, raises the historical and current issue that the law was the tool for the original colonisation. The inherent legal bias then created institutional bias, which has created a biased Aotearoa, New Zealand.

Māori have a deep understanding of colonisation, and the dangers associated with the assumptions (algorithms) and the willful unquestioning, non-self awareness of a coloniser. We as Māori have developed an acute awareness, strength and resilience in the context of, and in spite of these

¹ Native Lands Act 1867 and Court, Native Schools Act of 1867, The Tohunga Suppression Act 1907, and all the Treaty of Waitangi Claims, settled and still to be settled.

² Kwet M [Digital colonialism is threatening the Global South | Science & Technology](#), 2019

³ “ “ “ “ “ “ “ “ “ “ “

assumptions about who they think we are. Therefore it makes sense then that we can spot colonisation coming, long before those used to being the colonisers may, and we see it coming, or rather it's upon us, in the form of digital colonisation. Given this is about assumptions, with our kind of experience, it would be logical to assume we may have some real answers to make it work for us.

Whether it is algorithmic bias or digital colonisation, the potential and actual harm has led to a call for ethics and regulation from the European Parliament, the World Economic Forum and other organisations. New Zealand has a unique opportunity to learn from Māori as we as a country decide what, how and where these technologies can be used. We, Aotearoa, New Zealand have a unique opportunity right now to embrace a growth mindset, let another world view in, collaborate with Māori and show the world that shared power, shared vision, knowledge, energy creates real innovation.

My hypothesis is that introducing a set of tikanga Māori, Māori values may start to mitigate the harm of the algorithmic bias caused by the predominantly white, privileged male set of values that underpin our society, laws, institutions and now technology.

To test this theory I developed a draft Tikanga Matatika, Tikanga Māori framework, that I was going to test on businesses but Covid made that difficult, so apart from literature reviews, I conducted many semi and structured interviews, and inductive and informal conversations with individuals within the organisations, business or hapū/iwi.

My findings are that on the macro level, Pākehā are genuinely interested in a Māori world view but they are not ready to actually adopt a Tikanga Framework. The micro, deep dive showed a real awkwardness, resistance or reticence of bringing Tikanga into their business, department or organisation. It revealed much more understanding is needed on the basics of Aotearoa, New Zealand's history, on Te Tiriti o Waitangi and the place of Māori as co-leaders of this Nation. For Māori a great deal more trust is needed for us to share our knowledge and work with Pākehā as equal co-creators, collaborators, decision-makers at these levels, for that reason of ignorance and resistance by Pākehā.

Author's Preface

Before I start I make this statement from the outset. Before Te Tiriti o Waitangi/The Treaty of Waitangi, Māori were the rangatira, the leaders, the tangata whenua, the people of Aotearoa, as recognised Internationally, in the more powerful document, He Whakaputanga - The Proclamation of Independence, 1835. Te Tiriti o Waitangi was the 1st Immigration Document, that allowed the British more rights than other circling countries. Post Te Titiriti, we are the tangata whenua of Aotearoa, whose koiwi, bones, wairua, spirit and tūruapō, vision is imbued in the past, present and future of Aotearoa, New Zealand. We are not a statistical minority that need to be recognised in a Diversity or Inclusion Scheme as part of a multicultural New Zealand. He Whakaputanga and Te Tiriti o Waitangi were acts to say who we were as a People, and to include the world in, as manuhiri. It was with faith and confidence in who we were to embrace change and adapt to new technology, as we saw a new future unfolding, a new horizon to navigate. We did not count on the British response, nor the effects, of their 'Business as Usual' colonisation.

180 years later and a whole, new Post-Covid world is unfolding, with emerging digital technology at the fore. It has the potential to be a leveler as nobody around the world truly understands the power or the ramifications of either. This could be the moment when a line in the sand, of the old and the new, could be drawn. Those who have been colonised have learned hard lessons. We have bitter experiences to share of what not to do and what is needed now, but more powerfully it's what we, as Māori can bring, what is embedded in our DNA. We are used to the challenges of navigating uncharted waters through our relationship with our environment and the unseen environment. We know what it is to face extinction for the chance of survival, whether natural disaster, our own over consumption or colonisation, by changing and adapting, to face new environments, quick to adopt new technology, even new people and ways. We have in our heart relationship, the belief that we are connected, we matter, people and planet, and we care for, and believe in our future so much that we have survived under the degradation and sorrow of colonisation. And some of us have begun to thrive. We have so much to offer at this time where new ideas, thoughts, beliefs, visions are desperately needed. Now is the time for Māori to stand up and take their place at Aotearoa, New Zealand's leadership helm, as THE proper partner to the Crown, and take us forward. I ask us all, all New Zealanders, are we ready or will Business as Usual prevail?

-Sara Stratton

This document necessarily has a large Introduction component to set the scene first for bias, then Te Tiriti o Waitangi/colonisation and digital technology. I then discuss Tikanga Māori, the testing of it and the findings. As my Masters is from a Te Āo Māori perspective and Māori knowledge was passed down orally through metaphor, stories, poetry, depending on the audience, it will be written in a mix of subjective/objective narrative, but mostly I hope, as Māori Marsden says, it will be passionate. My ultimate intention is that it will be a bridge, one that connects people to people, people to knowledge, people to concepts and ideas and worlds, and connects me to the next phase.

A small disclaimer.

I can not talk about Te Ao Māori, a Māori Lens on emerging digital technology without first mentioning the text I relied on the most for my tikanga, the collated writings of one of our Ngāti Kahu kaumātua, Pā Māori Marsden, "The Woven Universe." It is therefore an appropriate source of knowledge for the tikanga I use. It is not tika, right for me to use tikanga from other hapū or iwi without consent, though in his lifetime and for his work with the Government, he gathered tikanga and perspectives from many iwi and hapū, therefore he got that permission. He was well regarded broadly. His is not the only mātauranga Māori I read, but his works are my kaumātua, my rangatira. I do not speak for all Māori, for all of my iwi, hapū or whānau. There is no one homogenous worldview. This is my assessment and dissemination from the data collected, from the questions I determined, from the people I chose to interview or research, my methodology that I chose to use, and the solutions I have

theorised as I have come to see them. I also know this is a snapshot in time. Things can change very quickly, including possibly, my stance as I determine it at this present time in this Master's.

1. INTRODUCTION

Pā Māori Marsden, one of Ngati Kahu's tohunga said, "The route to Māoritanga through abstract interpretation is a dead end. The way can only lie through a passionate, subjective approach."⁴

In 1840, Aotearoa, New Zealand, A new future was on the horizon for two people. There was an opportunity for the British to do and be something different from their rigid, excluding, systems where disease and poverty was rife, that they had left behind. On the other hand Māori were not only willing to adapt to new opportunities and circumstances, to learn new skills and technology, they were willing to adapt tikanga to do a most extraordinary thing. In the spirit of innovation and collaboration, manaakitanga and reciprocity they acknowledged the place that this totally foreign people had in the new horizon, by sharing with them a portion of their own power, rangatiratanga, mana, along with some of their land, their own 'mother', under strict conditions, you look after yours, we look after ours. Māori trusted that the British would uphold their Te Tiriti o Waitangi contractual obligations, after all their own Rangatira, Kuini Wikitoria had already acknowledged their Rangatiratanga status 5 years earlier in the Declaration of Independence 1835.

We all know what the British did with that trust. They mistook that spirit of generosity and collaboration for weakness and with the inch given in good faith, they took the whole country. Business as Usual, colonisation prevailed. They then went about replicating the exact same, greedy, consuming, excluding, values and principles they'd left behind and dominated everyone who was not them. They created the New Zealand story we have today, with Nga Tūtohu Aotearoa, NZ Statistics, confirming the class, gender, neuro, ethnic inequalities. Māori, women, neurally-diverse and non-Pākehā are still under-represented in positions of power, wealth, health and over represented in all the negative aspects of society, poverty, mental illness, suicide rates, imprisonment.

Yes we have our second elected female Prime Minister, look at the changes she is making - but for a 180 year history is it too little too late?

I am so excited at the prospects Emerging Digital Technologies (EDTs) offer Māori, and what Māori have to offer to EDTs and all the important decision making about their use or otherwise. It's like standing at the summit of a huge mountain, after an incredibly long, winding and treacherous ascent from where we were when we were our authentic selves, pre-colonisation, to where we find ourselves now, where the world is feeling the effects of this new digital technological age.

The fresh wind of hope is blowing, the promise of restored dignities reviving weary spirits. At last maybe our authentic yet adapted selves are wanted in the world, needed, make sense in this time of great uncertainty. The western, patriarchal status quo, with ancient, traditional values, institutions of law, models of business, health and society, has shaken the planet to its core and are being disrupted because they are just not working. A revolution is underway. Digital Technology is hailed as 'the 3rd Industrial Revolution, Artificial Intelligence,(AI) as the 4th.' AI, Blockchain, Robotics, Virtual Realities and other emerging disruptive technologies, are here.⁵ They have crept into our daily lives from automated transport, robots as carers, facial recognition, to what schools should I send my children to, best restaurants for me, predicting over our lives, talking to virtual people, living virtual lives, having crypto currency, banks, hospitals, schools are changing, your smart homes are being held hostage by cyber

⁴ Marsden M, "The Woven Universe: Selected writings of Rev Maori Marsden. 2003(ed) Royal TA, p2

⁵ Schwab K, [The Fourth Industrial Revolution: what it means and how to respond](#), 2016

terrorists, and now there are unintentional biases built in⁶. Some people feel invigorated by it all, others feel powerless, they don't understand, the 'old' ways that they are used to are changing - even language and communication - they feel taken over by it or feel the threat of being taken over. What to do about it is on everyone's minds.

Well, we, Māori, know what that is like. We have had 180 years to think about it, of struggle against, powerlessness, have tried old ways, new ways, have failed, have had some victories, have adopted, then adapted and have continued regardless.

And now, here we stand, on the precipice of a new world, with new horizons, more than ready to harness these new and powerful tools for all of our gain. Of course we do, we have the power to harness the sun in our DNA, thanks to our ancestor Maui who harnessed the sun.⁷ And we have the 3 kete of knowledge,⁸ where what doesn't work has been emptied, filled with what does work from iteration after experimentation after iteration. Talk about lean canvas or human-centred design! We have a treasure trove of experiences, lessons, wisdom, of how to's and how not to's, in this 180-year learning journey of pre, post-colonisation, settlement and now, new horizons. We have much to offer individuals, organisations, corporations, Governments, digital technology itself! It is exciting.

But with excitement comes excitable theories, ideas, fears. There are wild promises and threats of epic proportions regarding EDTs. We swing from utopian promises of autonomous machines and AI freeing our lives from the drudge of laborious jobs, so we can now aim for higher purposes - just as Oscar Wilde predicted about the Industrial Revolution.⁹ We can be more autonomous and in control of our everyday lives thanks to Alexa. Blockchain technology is giving us safer control over money and smart contracts. Or there are the dystopian tales of robots taking our jobs, our data and facial recognition as tools for Orwellian surveillance and control and AI is the next evolution of humanity. Unsurprisingly, one of the big questions that governments and organisations like the World Economic Forum (W.E.F.) are grappling with is, how do we ethically govern, regulate this new, fast-paced technology and the companies involved, within old and unwieldy institutions of the law and commerce? How do we protect people from the discovered unintentional bias, predicted inequalities, cyber security threats on our privacy and data sovereignty without stifling innovation?

What is clear is the impact of EDTs and solutions to the issues of bias, ethics, control, are huge and complex issues. No one has a real handle on any of it. Governments, organisations, businesses, all of us, are needing to find our way through to what is real. All of us, our knowledge, skills, energy, heart, soul, strength, perspectives are needed.

We, as Māori have always argued that, as tangata whenua of Aotearoa and partners with the Crown to Tiriti o Waitangi, we want to be at every level of building the Aotearoahou, a new New Zealand. We want a vision, outcomes, processes, strategy and implementation that we have co-created, that reflect our values and worldview. Then our dignity will be restored and our future will thrive. There is no one Māori way, thought, feeling, we are all different people. That is why we need us all.

Using Literature review, informal conversations and semi structured, structured interviews with a wide range of interviewees, my Master's is a focus on WHAT is a Te Āo Māori, Māori worldview, which is underpinned by what we value? WHY do we need a Māori world view in a digital technological world? HOW can it be translated and practically applied in businesses, government policy, law, organisations?

I will produce a draft Tikanga Framework informed by this information gathering activity and then test it on three different bodies, a Māori digital company and my hapū, a Pākehā company where digital tech

⁶ Tidy J, "Traveler being held to ransom by hackers" BBC 2020 American Institute of American design, "Smart home holds couple hostage demands ransom", 2019.

⁷ There are many, many references to this story. [Tane-te-Wananga](#)

⁸ Marsden M, "The Woven Universe: Selected writings of Rev Maori Marsden. 2003(ed) Royal TA, ps60-62.

⁹ Wilde, O, *The Soul of Man under Socialism*. 1891

informs their business, and the World Economic Forum AI Strategy Group with the aim to show how it can be a useful addition to innovation.

Te Ao Māori and our tikanga offer new eyes to the majority of New Zealand, a homogeneity that is so monocultured you could say it is blind to anyone who is not itself.

I am mindful of the very recent Visionweek NZ¹⁰, where the heads of industry were being asked their vision for New Zealand going forward. There was very little real diversity. This is not good for innovation, for facing the future with all the benefits and concerns of digital technology, and it's not good for the problem of institutional bias, let alone algorithmic bias. But that's a negative. Science says evolution needs diversity to survive, nature shows us, our own bodies show it. We need, now more than ever, diversity of thought, heart, vision, imagination, issue detecting, problem solving. We need us all. Te Ao Māori is the first voice to try and prise open the echo-chamber of the western values of profit and growth at all cost, and let some new voices in.

I wrote the above before Covid-19, before Georg Floyd. It seems more urgent now than ever.

The ISSUE - BIAS

As exciting and revolutionary as EDTS are, the issue that rang the first alarm bell on this Master's journey is the issue of algorithmic, machine BIAS.¹¹ I will explain this further on. This has led to a worldwide Governmental, tech, and business conversation about the conscious and unconscious harm done by algorithmic bias and the need for ethical governance.

BIAS is complex and I am only briefly discussing it here. The basic synonym for bias is prejudice, but even as I read various dictionary meanings they don't explain adequately HOW bias occurs, giving simple examples instead. The Cambridge Dictionary says, 'the action of supporting or opposing a particular person or thing in an unfair way, because of allowing personal opinions to influence your judgment.' Part of their definition offers the solution of bias is impartiality. 'Reporters must be impartial and not show political bias'.

The idea of 'impartial', the 'reasonable, rational man' is a culturally, economically and gender biased concept found liberally in western, legal and economic thinking and theories. Māori govern from the relationship one has with the person, place, object, situation, not from some unrelated, disconnected version of the thing, as if being disconnected makes you neutral which makes you fair which will give you a more 'right' or just outcome. Those are value-based judgements. Ethics and values are not universal. So, the definition of bias is biased.

Institutional Bias

The issue most worrying to me are the outcomes of machine or algorithmic bias on those in our society, Aotearoa, New Zealand, who already suffer under institutional bias. Below are just a few examples of institutional bias in New Zealand. I press the point to really set the scene for the effects that algorithmic, machine bias will have.

DATA - Fact or Fiction.

Not all information is universal, irrefutably true. Data, information, statistics can be biased.

¹⁰ www.visionweeknz.com

¹¹ Pew Research, [Experts on the Pros and Cons of Algorithms](#), 2017, Eisenstat Y, "[The Real Reason Tech Struggles With Algorithmic Bias](#)," 2019, just a list a tiny portion of references for bias..

“Data is the new oil” or ‘all roads lead to data’¹² have been coined many times over the last 10 years. Yet ‘knowledge is power’ has been cited from Francis Bacon’s work, “Meditationes Sacrae and Human Philosophy”, 1597. Hard to know the exact truth as Google only picks up english, written information about this quote, as I write in english. From the beginning of time humans have been collecting knowledge, learning, using marks to tally and record, adapting, inventing and sharing the knowledge. How I perceive the world, who I am ethnically, geographically, culturally, gender, age, life experience will then determine what I want to know, the problems and solutions that mean something to me, how I collect that information, who, what and where the data is gathered from, how I analyse it, how I disseminate it, whom I share it with and how I share it. That is true of groups, organisations, cultures.

Historically there were exclusive groups who gathered and disseminated this knowledge in ritual and legends “to safeguard that knowledge from the general public.”¹³ To give them what the exclusive group believed was necessary for the public.

For Māori, knowledge is tapu, sacred. It lies in our whakapapa, our connection to our gods, (an english word to translate a Māori concept, not that useful), our tūpuna, and Te Ao, our environment. Our mātauranga, knowledge was hidden in the different types of korero, oral delivery, by those initiated into Whare Wananga who disseminated it in appropriate ways to the whānau, hapū, iwi. Data gathering, knowledge finding was at first a spiritually inspired process tested by the tohunga, the scientists and spiritual leaders.

Fast forward to Aotearoa New Zealand, 1840-today. As all traditional Māori systems were dismantled through the European version of the Treaty of Waitangi, all British, western institutions were sown, so too was our system of knowledge gathering, what data to gather, the method of gathering and then the analysis and dissemination.

Western constructs and systems, that being British and European, of what was knowledge, from who would decide what knowledge was needed, what problems were there, what were the questions to ask, who were the subjects, how were they to conduct their inquiry, how their world-view dominated all analysis, disseminated and determined the solutions, dominated, the ‘story’ of Aotearoa. Māori went from being experts and observers to being the passive subject. Our stories,¹⁴ data, information, science, methods, practices and language were colonised, diminished, criminalised by western knowledge models.

They viewed Māori as Attenborough has done the animal world, and then started to tell a story of who Māori were, based on their worldviews, values, beliefs. Motive? Data gathering always has a motive. For many European and British colonials, that being, wealthy men, the motive was simply that they believed they were superior and therefore believed they were entitled to do and take what they wanted. This was ‘proven’ by their spurious scientific ‘data’, collected and disseminated strangely by the same demographic of people. Therefore they thought so, and so it must be. The fabric of Māori society weakened, as the subjects and methods of story-telling changed. The story changed from a Māori-centric, Māori as rangatiratanga, leader, main protagonist, to a Pākehā-centric one where Māori were now the antagonist, and Pākehā the hero. This story has been so immersed into Māori culture that devastatingly some Māori have come to believe that story generation after generation. That’s the crime of believing that data, statistics are THE truth, THE facts.

Sadly many Māori, understanding this fact very well, that data can be biased, haven’t trusted NZ Statistics that does the NZ census. Also called Tatauranga Aotearoa, they are the Government’s data gatherers. The purpose? “As the lead for data, Stats NZ’s role is to facilitate. We’re supporting government agencies to build their capability and manage the data they hold as a valuable strategic asset.” From their website. But what they actually do is tell a story from the data they collect, to answer questions they thought were important, from the people they decided they would collect it from, coming from their own worldviews.

¹² Adesina A, [DATA IS THE NEW OIL](#)-, 2018

¹³ Marsden M, ‘The Woven Universe.’ p62

¹⁴ Brene Brown, Legends, stories and just data with soul. [Data Alone Won't Get You a Standing Ovation](#), 2014

For decades now Māori and International academics have recognised this. “By the 1970s this kind of research abuse was the subject of political protest that ultimately led to a re-examination by some groups of researchers about the nature of research involving marginalised and oppressed communities. From this work, new approaches to research arose, like feminist research, participatory action research, critical theory and critical pedagogy, indigenist research, and Kaupapa Māori research.”¹⁵

Data, from who is determining the research subject, determining the interviewees, creating the questions, determining the method of collection, analysing and disseminating it, is part of institutional bias. It tells a story, as you see below in the examples, a narrative about a group of people by another group. There hasn't much critical analysis or self reflection from the data gatherers themselves though that may be changing.

This is a small example of bias that can have big effects on data analysis. The practice of labeling ethnicities or not, whether in research or the media. It was a real issue when I was at law school, the labelling of the ethnicity of a suspected criminal when they were non-Pākehā. The Pākehā offender remained anonymously unlabeled as an ethnicity and was just labelled by gender, with the assumption that we all knew that meant Pākehā. There is research done about this ethnic invisibility.¹⁶

At the time pressure and protest was applied and it stopped, but it endures in other areas. I have a recent example. I went to the Internet NZ 2019 conference. Ironically, at the Digital Inclusion workshop, a workshop about how to include all people, especially Māori, Pasifika, lower socio-economic groups, those living rurally, older people, disabled people, to the digital space. I was surprised that the experts and researchers' were predominantly non-Māori, non-Pacific Island, fully able-bodied people who lived in cities. But more surprising was that regarding this issue of labelling, the research subjects that were non-white, non-Pākehā ethnicities were labelled, e.g., Samoan, Māori, Taiwanese, while the Pākehā subjects were referenced again, only by their gender. I pointed that out to one of the researchers who seemed genuinely puzzled as to the issue. With further explanation about what it means, and the history as I just said above, she conceded that could be a problem.

This invisibility of one ethnicity over all others is powerful. What that means is that it skews the data. It looks like an over representation of certain cultures and an under-representation of another. That then skews statistics, forecasts, analysis and recommendations. For example, if it was a survey on health, the data would read this many Māori, Samoans, Chinese, etc suffered from a particular form of cancer, but because Pākehā weren't labelled it would read that there were no cases of Pākehā who suffered from this. It would then predict that Samoan etc were more likely to get this cancer as opposed to Pākehā, and then for example, if insurers had access to that information, the Samoan would have to pay more for insurance than the Pākehā based on the faulty prediction, based on a simple biased act as not labelling one ethnicity. Apply that same logic with crime, police policies, social policies are created, or with education, housing and you end up with a totally biased society predicated on the bias of a small few people in charge of the data gathering.

As I said knowledge is power, data the new oil, the story-teller is king. That is why freedom of speech, of the press, is constantly challenged. See more under the heading The Media.

That is why you need all people, all world views, experiences, abilities, methodologies, at all levels of research, to mitigate against this bias, .

¹⁵ Rangahau.co.nz - A Māori led research and academic site.

¹⁶ <https://mq.co.za/opinion/2020-06-14-white-noise-black-people-will-always-struggle-to-breathe-and-be-heard/>, Trechter, Sara, and Mary Bucholtz. “Introduction: White Noise: Bringing Language into Whiteness Studies.” *Journal of Linguistic Anthropology*, vol. 11, no. 1, 2001, pp. 3–21. *JSTOR*, www.jstor.org/stable/43103950. Accessed 15 Sept. 2020., and many article by Helen Moewaka Barnes.

POLICE PROFILING:

"There is ample research which shows that unconscious bias exists, though [for those not negatively affected] it is rarely obvious and easily overlooked," the court stated. "Few who discriminate on the basis of race will admit it. Some will prefer to hide it. Most will be unaware of it and so will find the suggestion they do so insulting." The Court of Appeal 2018.

This was from a case about the police handling of a man who was stopped for no reason whatsoever. He was found to have committed a crime but their lawyers argued the police had no reasonable suspicion of criminal activity except that he was brown.

For Māori and Pasifika people this is nothing new. As the Court said above, there is research but more importantly, there are so many anecdotal examples of people being targeted by the police because of their race. I have personal examples of that but in a reverse way. I am a fairly fair-skinned, Māori woman. I have never been stopped randomly in my car. Yet, at different times in my life, when I have been in the car with my male whānau we do get stopped. When they see me in the car nearly always their response is a surprise, and when I ask them questions like why have they stopped us, no they can't just have a 'quick look in the car', I know, I studied law, they back right down and let us go. Letting us go is their prerogative. Statistics show European/Pākehā offenders were 40% more likely to be 'let go', given a pre-charge warning, compared with just 25% of Māori.¹⁷ Their experiences on their own usually lead to searches, or trips to the station. This begins the process of their name now in the system, making them more likely to be stopped again, if their vehicle has been registered, which leads to anything out of the ordinary, speeding, being recorded, giving them a record, reducing their chances for 'warnings', more likely to be charged, needing to go to court, needing lawyers, and more likely to be punished.

Once charged 18% of Māori are sentenced to prison compared with 11% Pākehā. 1 in every 142 Māori are in prison, compared with 1 in 808 of non-Māori. Sentences are higher for Māori than European. For low level crime, 7.3 % of Māori are sentenced and imprisoned, compared with 2% of Pākehā.¹⁸ It doesn't stop at prison, when released, 2/3rds of Māori are re-convicted compared with just over 50% of Pākehā. Thus is the circularity of institutional bias in the police.

Compare my whānau, and many Māori anecdotes of their experience with the law, to the anecdote of my Pākehā friend who lives in Remuera. When her son was stopped in a drug and alcohol testing station, the police saw a joint in the console of the car. The officer laughed and said, 'Better put that away,' and let him go. ' They all laughed, thinking this was hilarious. No, not racist at all.

And then last year there was touted the possibility of armed-police but only in certain areas. Guess which ones. Remuera? Queenstown? Ponsonby-Grey Lynn 2000's? Can you imagine what would happen once those same police, with their same attitudes are armed?

A solution is another Commission of Inquiry¹⁹. Logically it should not be done by people within the system that is under inquiry. As the Court of Appeal said, "few will admit it, most will likely be offended."

People use statistics, data as evidence, not of the truth but to tell the stories they want to hear. The above statistics tell the police and non-Māori that Māori are just more likely to be criminals. That in itself is a reasonable cause to stop, charge, sentence, sentence more harshly, be less-likely to parole, more likely to reconvict. Like there is an inherent criminality in Māori. When I and other Māori read these statistics the conclusion is the people in charge and the system is racist against Māori. Who is right?

Then there's affordability of lawyers, those in remand, sentences, name suppression, even court reporting in newspapers and television; when I was at law school if the criminal was of 'European, Caucasian,

¹⁷ Hassan M, [Pākehā let off by police twice as often as Māori](#), 2016

¹⁸ Dyers A, Crime and Punishment, 2018, Stuff Interactives.

¹⁹ Tukaka M, from the NZ Māori Council, [Racism within the NZ Police must be addressed](#), Dec 2019

Pākehā' ethnicity it was never cited, as opposed to Māori, Tongan, Chinese etc.²⁰ This bias continues societal prejudice. Someone sees or hears Māori or Pacific Island people are committing crimes, not how many Pākehā people are also committing crime. It lodges in people's minds that Māori and Pacific Island people are more likely to commit crimes. Police target certain people and the wheel goes round.

Institutional Racism or Bias is perpetuated by the implementers of the law.

Justice, fairness, freedom and equality are meant to be at the heart of a democratic society. But as the Orwellian pigs said, 'all animals are equal but some animals are more equal than others.'

THE MEDIA

Media, 'news' bias has made its way into algorithmic bias but its roots were already present. As I said above, the story-teller is king. Freedom of speech, of the press, is held up as a fundamental human right, but it only protects those in power. Look at Trump wanting to pull down Twitter. Youtube pulls down 'terrorist' sites while leaving white supremacist sites.

I am including a personal story for two reasons, one, it is my data collection, analysis and dissemination that reflects my worldview, and secondly to remind that these are not abstract concepts for the privileged to discuss over lunch, these are happening everyday, affecting actual people and this story is just one of so many.

In the 1990's in Aotearoa New Zealand we had more Te Tiriti o Waitangi discourse. The mainstream media's response and coverage was no different to how it has been since 1840. They were targeting and labelling Māori protestors as 'activists' for protesting against stolen land, Pākaitore, about the Foreshore and seabed, the Fiscal Envelope, the TVNZ Broadcasting Station's lack of Māori representation etc. Māori were getting really negative press. At that time I had the privilege to go to the inaugural, annual Taumata Māori celebration of Māori academic success in Aotearoa Square. I couldn't wait to see, finally, a positive story about Māori in the news. There was nothing, absolutely nothing about this fabulous day. I learned then, you can't trust the news to give a full, unbiased account of anything. It was a representation of a particular point of view and the mainstream status quo.

Because the news is owned and watched by the mainstream, people trust 'the news' as correct information, as truth. It influences how the public should see Māori. And if the public at large don't have a relationship with Māori, the public, because of the trust in 'the news' believes what they are told, that Māori are activists, a term with negative connotations, and are wrong for fighting against the Government, and are never shown in the positive. We, as people and our causes are then totally and constantly undermined.

Times that small but powerful example of what people are fed about a group of people by 1000, with the algorithmic, predictive technology in news and you get Cambridge Analytica, a threat to a fundamental western value, democracy, not to mention Youtube, Google as a first source of information. This is just one example of how bias in technology and its application produces not just harm, but exponential harm.

²⁰ Anti-Māori themes in New Zealand journalism—toward alternative practice , A. Moewaka Barnes, B. Borell, K. Taiapa, and T. McCreanor., Whariki Research Centre, Massey University, 2012, see also [White Noise](#) a play by Suzan-Lori Parks 2019

HEALTH

“.. the data is clear. From before birth to the end of life there is inequity in the health sector. Services are not as accessible for Māori, and even after services are accessed, Māori do not experience the same benefits as non-Māori. Bias can have a big role in this.”²¹

The statistics only count as part of the story of the bias, the disparity and inequality of NZ’s health systems. ²² But the real stories come in the anecdotal lived experiences of how Māori are treated, how decisions are made or not made for them, how information is given, not given, how our own knowledge and practices were at best devalued, at worst criminalised. Yet we knew and understood what made us sick and how to make us better. We understood that you don’t treat a symptom you treated the whole person.

Amongst many terrible health statistics, one of our most saddest is that Māori still sit at the highest for youth suicide in the developed world, as well as high poverty, prison rates etc. ²³When your future has lost hope with their present, we are really in trouble.

Figure 1 ²⁴- highlights the reality of life for Māori when life, how it should run, what and who is valued, what success looks like, doesn’t look like, is framed then measured by non-Māori and we, Māori are not part of the decision making process. Māori are still under-represented in the top three tiers of the public service and also at the lower levels of management. In fact, Māori presently comprise only 16% of all

²¹ Stolarek, Dr, “Undoctored, Who Me Biased?” 2019

²² Health Quality and Safety Commission, NZ, “HE MATAPIHI KI TE KOUNGA O NGĀ MANAAKITANGA Ā-HAUORA O AOTEAROA” 2019

²³ LLoyd, T, Article 9, “He oranga He Oranga mo Aotearoa,: Māori well-being for All” Deloitte, 2018

²⁴ Lloyd, T, Deloitte’s “He Oranga He Oranga mo Aotearoa,: Māori well-being for All” 2018

public sector positions.

 Infant mortality (per 1000 live births)	1986	Māori 19.0 vs. non-Māori 11.0
	2014	Māori 7.2 vs. non-Māori 4.6
 Life expectancy (years lower than non-Māori)	1986	Male: 6.98 years Female: 8.46 years
	2013	Male: 7.3 years Female: 6.8 years
 Home ownership	1986	Own 45% Rent 50%
	2013	Own 35% Rent 88%
 Unemployment (% of population)	1986	Māori 14% non-Māori 3.7%
	2018	Māori 9.4% non-Māori 3.6%
 Prison admissions (% of total admissions)	1986	50%
	2018	31%

WEALTH

Wealth, in the western world, is measured by accumulation of assets owned. Its distribution reflects the power base. In NZ in 2016, 10% of the NZ's population owned 60% of NZ's wealth, with Europeans being the wealthiest. "Across ethnic groups, New Zealanders of European descent were the wealthiest, with an individual median net worth of \$114,000. For Asian New Zealanders, that figure was \$33,000, for Māori \$23,000, and for Pacific people \$12,000."²⁵

You have to ask why is it that Pākehā/Europeans occupy all the high stats of society, living longer, the most wealth, better education and employment outcomes? It's not enough to keep denying there is bias in the system by saying some people are just lazy or stupid, or say sorry, it's unintentional.

We are all biased, we all have our own unconscious/unaware, and conscious/known prejudices. It starts in the personal, the individual, and is enlarged and informed generally at first by our upbringing and our surroundings, our whānau, family, education, community, the media, to business, to whole societal systems being biased. Bias becomes apparent by the decisions we make and those made for us. See Appendix 1 for some examples of biases and how it can affect your decisions.

²⁵ Lloyd, T, Deloitte's "He Oranga He Oranga mo Aotearoa.: Māori well-being for All" 2018

On a societal level it starts with the lawmakers and is encoded in the law. In Aotearoa, New Zealand there has only been one group of people holding that power since 1840, European/Pākehā, wealthy men.

We do have Tiriti o Waitangi that is the perfect framework to address and correct these issues but it is willfully disregarded, as it has been from 1840. It's not ok any longer that for 180 years Māori have been saying that the answer lies in Te Tiriti o Waitangi, and are ignored. Nor that we have to prove our point in the very system that has denied our, and Te Tiriti o Waitangi's place in Aotearoa.

The LAW the precursor to algorithms

The law is a precursor to algorithms. It makes assumptions based on the values and worldviews embedded by the law makers, therefore it is biased. The idea or ideal that everyone is equal before the law, or there is one law for all is a legal fiction. I point to two recent examples here and in Britain. The first is when Health Minister David Clarke broke his own Covid rules. There was no punishment. Second was Britain's, Dominic Cummings, who did the same thing more than once. No punishment. The law said X, they did Y, and there were no consequences.²⁶ Compare that with those individuals who did break Covid laws and were punished.

There are many more examples.

Those who commit benefit fraud are one example, and the way the law seeks them out, processes them then penalises them v white collar criminals.

The American Constitution holds freedom of speech as sacred until you piss off Donald Trump and he wants to shut your whole media company down eg, Twitter. Or Islamists on Youtube are shut down for fear of terrorism but not the hateful white supremacists. See also my personal story, or the legal media reporting of who and what gets in the news and how it is reported.

Another legal fiction is equal pay, but the facts show women are paid less.

The list goes on to support the fact that there are one set of laws for some and another for the rest.

So the issue of algorithmic bias took me straight back to law school where we were taught just how the law was used as the colonising tool against Māori. The law was, is, encoded with the values of the law makers.²⁷ Pre-1840 Aotearoa, New Zealand Māori were the law-makers, embedding into Te Ao Māori our worldviews, values, Tikanga, regulations, Kawa, beliefs, Wairuatanga, expertise, tohutanga, Post 1840 this changed to wealthy, european males who made the laws based on what they valued, they then created the institutions to uphold, protect and implement their own values, their ideas of right and wrong. The new colonial law, of the INDIVIDUAL has the RIGHT to OWN land and people, coupled with the rapacious expansionism, 'right now', mindset was at at the very least, at odds with Te Ao Māori, Māori Law, WE (are connected to) therefore are RESPONSIBLE for PROTECTING, nurturing, growing our relationship with The Ātua, the environment, each other, including the future.

In fact, the law criminalised being Māori, making us poor and wrong at every turn, by eviction from land, forbidding the Māori language, criminalising our beliefs and values,²⁸ our health and educational practises, our identity, and ultimately taking our dignity, with tragic and enduring social outcomes.

My theory in law school was that laws, rules, ethics only reflect those who had the power to make them and they would, could only promote and protect their position, their values, their beliefs. No matter how

²⁶ Manch and Cooke, "Health-minister-drives-to-local-park-to-ride-his-mountain-bike-amid-coronavirus-lockdown," 2020, RNZ, [Dominic Cummings rejects calls to quit as Boris Johnson's chief adviser](#), 2020

²⁷ Chambliss, William J., and Robert B. Seidman. *Law, order, and power*. Reading, MA: Addison-Wesley, 1971.

²⁸ Māori became displaced physically, mentally, emotionally and spiritually by the law, from the NZ Constitution Act 1852, The Native Land Act and Court 1867, The Native Schools Act 1867, The Tohunga Suppression Act 1903 and many, many more.

worthy their ideals, they would always only be their ideals. That theory is confirmed and well established.²⁹

Again, back then I thought the logical solution, the antidote for bias in society then, is to ensure all perspectives, all values are part of the creation, implementation and decision making of any legal system, organisation, business, government etc. After all, Rousseau argued, “that laws are binding only when they are supported by the general will of the people.”

The correlation between the unconscious and conscious bias in the law and its unforeseen effects, outcomes reflected in social statistics is well evidenced.³⁰

In the late 1970's, Pa Māori Marsden, writing a paper about the Resource Management Law reform said that Rogernomics radically altered the fabric of New Zealand. He linked the wellbeing of the people directly to the well being of the environment, and that both are directly related to the 'mono-cultured' systems and values embedded in the British law, “...by that process...the creation of the Settler Government by the Crown by the Constitution Act 1852... the resources once owned totally by Māori have been appropriated...has resulted in ‘the massive development of underdevelopment of Māori.’ This has caused a lack of dignity, identity for present and future Māori, leading to psychological, spiritual, mental and physical health issues demonstrated by the ‘over-involvement of the negative areas’ of society.³¹

Those that created the system of making laws, the law itself, and their inherent bias are to me a precursor to, or an analogy of the issue with algorithmic bias. The law is like internet cables that lay the foundation for society, they are embedded with data, values, systems that are decided upon by a particular group of people, in a language unfamiliar to the subjects they are meant to represent, in a manner that is not very transparent or accessible to the general public, that are then transmitted and administered by people they choose as suitable, for the ‘good’ of the whole. In Aotearoa, New Zealand, look how that ‘good’ turned out for Māori. Look around the globe and see who makes the laws and who the law serves.

If you are in doubt that it is the lawmakers that have the power, that the lawmakers protect their own, you need only see what happens when there are radical changes of power and lawmakers, see pre-Mao China, -post-Mao China, pre-Mandela South Africa, post-Mandela South Africa. Or for the more subtle, all those countries colonised by Britain and Europe, what are the statistics, the outcomes of that change in power for the Indigenous people today. The U.S.A, Canada, South America, Australia, New Zealand for example.

Nga Tūtohu Aotearoa, Stats NZ say this: “For the government to represent the population, it’s important that people from different groups – including both men and women – participate. Representative governments engage diverse communities, draw on the skills of the broadest group of people and provide checks on the use of political power.”

I have laboured on about the law as this is at the heart of institutional racism and bias - because the lawmakers, through the law, set the tone, determine the values and then create societal institutions, health, education, justice, economy, etc to protect those values. This is a whole other subject that is well researched. But the harm and the lessons to learn here provide very good food for thought as the issue of algorithmic, machine bias comes to light in the digital era.

So, as the law and society’s institutions are embedded with the values of the law-makers, now too the code embedded into algorithms, into programs of what and how data is collected, distributed analysed, even the technology itself, what it is made of, sourced, and used for, reflects the values, the perspectives,

²⁹ Chambliss, William J., and Robert B. Seidman. *Law, order, and power*. Reading, MA: Addison-Wesley, 1971.

³⁰ Anaru N, [A Critical Analysis of the Impact of Colonisation on the Māori Language through an Examination of Political Theory](#), 2011
Marriott and Sim, “[Indicators of Inequality for Māori and Pacific People](#)” 2014
Dow and Gardiner-Garden, “[Indigenous Affairs in Australia, New Zealand, Canada, United States of America, Norway and Sweden](#),” 1998

³¹ Marsden, M, *The Woven Universe*, ps24-25

the unconscious bias of those who are making these decisions. "Human data encodes human biases by default"³²

Law, society, is not biased if at first the human, the creator and designer of the law and society is not biased. The law is simply a tool that can either maintain order and the 'common' values or is oppress, suppress, hurt, kill people, whether intentionally or not. Much like the saying guns don't kill people, people kill people...but they use their guns to kill people. Those that get to have the power to make decisions and laws get to embed their values and perspectives into those decisions and laws, which then create the legal, institutional and societal bias. I acknowledge that the law hasn't just been biased against Māori. The lawmakers from 1840's have been predominantly British, wealthy, heterosexual men, therefore the law and the institutions set up by the law, have also been biased against women³³, class, (dis)ability,³⁴ sexual and gender orientation³⁵, and other ethnicities.³⁶ This has caused outcomes that have devastated Māori and other colonised and marginalised people. This Master's cannot look at all of these examples, it is from a Māori perspective.

When you look at the power of algorithms, AI, machine learning, the bias that has occurred, is and can occur, the seen and unforeseen harm that is predicted to be exponentially worse, not just for the same marginalised people, but others as well, it is vital to look at WHO is involved, from creation of the tech to the data gatherers, owners, disseminators, to ensure that that power is the hands of the many. It is also vital that law creators match that same process, to ensure any decisions made about what technology is made, and how it will be used will be made by all sectors of society also, to mitigate bias in algorithms and the law itself.

All of the colonised and marginalised people I listed above, apart from a few concessions, have been kept out of the power structure of decision making. How will they be represented in this 3rd and 4th industrial revolution, of digital technology and Artificial Intelligence? Basically if the law has this effect, what of AI?

I want to ensure that the same devastation doesn't occur.

Algorithms - AI - Data - Bias

Algorithms, put very simply, are code, 'sets of instructions executed when it encounters a trigger'.³⁷ It is now widely accepted that, whether intentional or not, built into these algorithms are the perspectives and values of the creators, developers,³⁸ creating unintentional bias all through the algorithmic process, from creation to use.

Artificial Intelligence - A.I., very broadly is a group of algorithms that can modify its algorithms and create new algorithms in response to learned inputs and data as opposed to relying solely on the inputs it was designed to recognize as triggers. This ability to change, adapt and grow based on new data, is described as "intelligence." Bias here is so dangerous, because if the original data is biased, the new algorithms created will continue the error exponentially.³⁹

³² Googleblog, "[Text-embedding-models-contain-bias](#).", 2018

³³ NZ Law Society, [Unconscious Bias](#), Geneva Centre for Security Sector Governance, [Gender Bias and the Law: Legal Frameworks and Practice from Bosnia & Herzegovina and Beyond](#), 2017

³⁴ Johnston K, "[The gap between the rich and poor at university in New Zealand](#)", 2018,

³⁵ NZ Law Commission, Gender Bias, Report 82-17. Though since 1993 Humans Rights Act, you are now not allowed to be discriminated against under gender, race, sexual orientation.

³⁶ Jones N, "[Racial bias and birth: 'We're looking through the lens of Pākehā'](#).", 2018

³⁷ Ismail K, "[AI vs. Algorithms: What's the Difference?](#)", 2018

³⁸ Snow J, "[We're in a diversity crisis': cofounder of Black in AI on what's poisoning algorithms in our lives](#)", 2018

GoogleBlog, "[Text-embedding-models-contain-bias](#)". 2018

³⁹ COMPAS - predictor tool of recidivists, [Twitter taught Microsoft's friendly AI chatbot to be a racist asshole in less than a day](#), the rogue Twitter account that became sexist and racist

HOW?

In an algorithmic system, there are three main sources of bias that could lead to biased or discriminatory outcomes: input, training and programming. Input bias could occur when the source data itself is biased because it lacks certain types of information, is not representative, for example, does not include data from minority groups or reflects historical biases.

Training bias could appear in either the categorization of the baseline data or the assessment of whether the output matches the desired result. Which in itself suggests there is a biased outcome wanted. Programming bias could occur in the original design or when a smart algorithm is allowed to learn and modify itself through successive contacts with human users, the assimilation of existing data, or the introduction of new data.⁴⁰

What does that mean?

Just to reiterate, for Māori, as said above, colonial law, institutional bias has had devastating effects for 180 years. No matter how well meaning the lawmakers were, they were at odds with Māori, who lived by their own sets of values, beliefs, systems of law and society. No matter how long and hard Māori have fought against institutional racism,⁴¹ the values of European, economically advantaged men contained in the institutions that created the society we have today, have prevailed.

The other worrying aspect of AI is that so much occurs in a way that is not transparent, auditable, explainable because of how complex it is and because of companies' proprietary rights over the algorithms, named BlackBox AI⁴².

Data - "Everything begins with data. What goes in affects what comes out. If the collected data is biased any analysis or output will reflect that bias. The AI models and technologies at the moment are data-hungry. Without reliable, high quality data at scale, it's really hard to use these AI technologies and AI models... it's important to get the foundational data technologies in place: data collection, data ingestion, storage and management, data preparation, cleaning and repair, data governance, data lineage - then, after that, maybe you can start using the data that you've collected to do basic things, like analytics or business intelligence. Then you start layering on machine learning and AI on top of that. It's important for companies to understand that AI is not magical."⁴³ The examples above show what happens when data is skewed, not truly representative, not understood. Data is vital. Data feeds the algorithms, the technology, how it is gathered, who gathers it, how it is stored, what it will be used for, who will have access to it, the security around it, are extremely important considerations to understand for a business, Governments, citizens. Which begs the question, who does understand this? Who is making all these hundreds of decisions?

In Māori there is a whakatauki, Ka Mua, Ka Muri, We move into our future with our eyes on the past. Craig Hilton, scientist said, "that's similar to algorithms. "AI uses old data to predict, go forward - however, if the old data is collected in a biased way and only from the majority (e.g. from Pākehā) then those not easily predictable will be disadvantaged. From a simple example of what is stocked at different supermarkets, depending on where you live to more serious examples. Genome Wide Association Studies, GWAS, use algorithmic processes to predict health, disease and behaviour. Ethnic minorities around the world are less well represented in the data (some of this is because indigenous and colonised groups are resistant to donating their genetic data to research - and rightly so)".⁴⁴ Therefore the results and outcomes become skewed, not representing the full picture, which can lead to poorer health detection and benefits to these people.

⁴⁰ White and Case, [Algorithms and bias: What lenders need to know](#), 2017

⁴¹ Moana Maniapoto, [The racism that too few of the privileged can see](#), 2016,

⁴² [AI transparency: What is it and why do we need it? By: David Petersson](#), 2020, a really good explanation

⁴³ [Mouncer B. "AI's Pathway to Trust."- Issue 12 - January 2020 - Digital Bulletin. issuu](#)

⁴⁴ Comments on my draft.

Diversity - It is recognised there is a serious lack of diversity in creators, researchers and developers, which leads them to a whole long line of data that will be inferior, even wrong, because of the data's lack of diversity. That lack means there is a lack of understanding in potential problems, issues, experiences of a whole society that need to be researched, which then leads to lack of relevant research subject matter, leading to inferior data and analysis and it goes on and on.⁴⁵

This issue for diversity and inclusion is being raised in many sectors.⁴⁶ The World Economic Forum (WEF) put a big case for diversity being good for business.⁴⁷

But the issue of diversity is inherently other thinking and can lend itself to bias. Example, Māori are not diverse people to other Māori, non-Māori are. Women are not a diverse group to other women, men are the diversity, and so on. When a company, an organisation says Diversity and Inclusion, they have already singled themselves out as 'mainstream' therefore invisible, and everyone else they want to 'include' is 'other.' That in itself needs to change. I invite people to read Peggy McIntosh's *White Privilege: Unpacking the Invisible Knapsack*, 1989.

It is the unconscious 'us and them' syndrome, as opposed to We. Māori understood that each of us have our own unique being, heritage, skillset, but we are firmly connected, so we are always WE. Mauri is the force, energy that weaves our 'diversity' together into a united organism. Western thinking, and the way it creates institutions, Government, organisations can be dissected, classified, siloed, and the whole can be lost in the departmentalised sections.

Organisms, like our environment, our bodies, have different jobs but work cohesively. Māori saw society like that. Businesses, countries could benefit from that kind of holistic thinking. There are a growing number of bias reports in technology. Facial recognition tools have shown gender and ethnic biases. The Washington Post reported on a Federal report on Facial Recognition systems that found that, "Asian and African American people were up to 100 times more likely to be mis-identified than white men, depending on the particular algorithm and type of search. Native Americans had the highest false-positive rate of all ethnicities, according to the study, which found that systems varied widely in their accuracy. The faces of African American women were falsely identified more often in the kinds of searches used by police investigators, where an image is compared to thousands or millions of others in hopes of identifying a suspect."⁴⁸

A Google engineer gives an account to watchdog group *Project Veritas*, about bias in search engines and the political agenda of Google that began in the Trump elections. He and behavioural psychologist Robert Epstein talk about how dangerous it is for big tech companies to have an agenda, to use their biases on their platforms to possibly manipulate people, to wield that kind of power.⁴⁹ It's dangerous because if they have been seen to be neutral, that their facts are reliable, people will trust them and therefore be swayed by these companies 'facts'.

⁴⁵ Snow J, "[We're in a diversity crisis": cofounder of Black in AI on what's poisoning algorithms in our lives](#)

⁴⁶ Peppiatt O, "[Diversity and digital technologies: what can we learn from the next generation?](#)" 2019

- Kalyanpur, Maya, and Mubina H. Kirmani. "Diversity and technology: Classroom implications of the digital divide." *Journal of Special Education Technology* 20.4 (2005): 9-18.,

- Richard, Gabriela T., and Yasmin B. Kafai. "Blind spots in youth DIY programming: Examining diversity in creators, content, and comments within the scratch online community." *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*. 2016.

⁴⁷ Eswaran V, "[The business case for diversity is now overwhelming. Here's why](#)" 2019

⁴⁸ Harwell D, "[Facial-recognition systems misidentified people of color more often than white people, according to a federal study](#)" - 2019,

⁴⁹ O'Leary D, "Google-engineer-reveals-search-engine-bias." 2019

There are many more examples,⁵⁰ for example, classifiers trained to detect rude, disrespectful, or unreasonable comments may be more likely to flag the sentence "I am gay" than "I am straight"⁵¹; speech transcription may have higher error rates for African Americans than White Americans⁵².

Worse are the predicting algorithms that judge over people's lives. AI is used for banking and credit assessments and predictors. It has been used for quite a long time now, in different iterations as technology develops. One of the issues is that Big Data analytics has prompted many lenders to consider non-traditional types of data that are less obviously related to creditworthiness. Not only that, but new, 'smart algorithms' are capable of functioning autonomously and how they select and analyze variables from within large pools of data is not always clear, even to a program's developers. This lack of algorithmic transparency makes determining where and how bias enters the system difficult and difficult to explain to customers why they have been denied something that is their legal right. The bias is likely to get worse with growing use of AI.

COMPAS, an acronym for Correctional Offender Management Profiling for Alternative Sanctions, is a case management and decision predictive, support tool, used by U.S. courts to assess the likelihood of a defendant becoming a recidivist. The scores appeared to favor white defendants over black defendants by under-predicting recidivism for white and over predicting recidivism for black defendants."⁵³

Being "white" meant you were invisible when it came to the negative aspects of society, crime, domestic violence, poverty, low education, suicide rates, homelessness, early deaths and poor health statistics. But you were the only one visible in the positive aspects of society, high job positions, representation in professions, home ownerships, second homes, assets, wealth, tertiary education, health. See my comments above about the invisibility and anonymity of a certain group in data.

That is BIAS, the forerunner to Machine or Algorithmic Bias. As COMPAS revealed, if you don't have diversity in all aspects of society, it skews data and data analyses and 'predictors', perpetuating institutional bias or in this case, racism, with incredibly unjust, you could argue, criminal outcomes for certain people. In fact the case I cited in Police Profiling proved just that. The man who had committed a crime was let off because the police officer and procedure was carried out on a racial basis not reasonable suspicion.

COMPAS and other predicting tools, for access to healthcare, for school enrolments, for jobs, for housing, for insurance, for credit ratings, for driving standards, makes the number crunching power of AI more dangerous and makes finding anyone to take responsibility much harder.

What then will be the impact of AI, of machine bias, where digital technology is essentially made by 'white and asian men, often of privilege containing their world-views and unconscious bias'?⁵⁴ ⁵⁵ Not only is it made by them, but you have to ask for whom is it made, us the punters and why? What are their motives? We talk about unconscious bias, but what of the conscious bias determined by their why, their motives whether at the beginning, the creation of their business, or now, when it has immense power, like

⁵⁰ Noble, Safiya Umoja (2018). [Algorithms of oppression: How search engines reinforce racism](#). New York: New York University Press,

⁵¹ Dixon, L., Li, J., Sorensen, J., Thain, M. and Vasserman, L., 2018. [Measuring and Mitigating Unintended Bias in Text Classification](#). AIES

⁵² Tatman, R. and Kasten, C. 2017. [Effects of Talker Dialect, Gender & Race on Accuracy of Bing Speech and YouTube Automatic Captions](#). INTERSPEECH

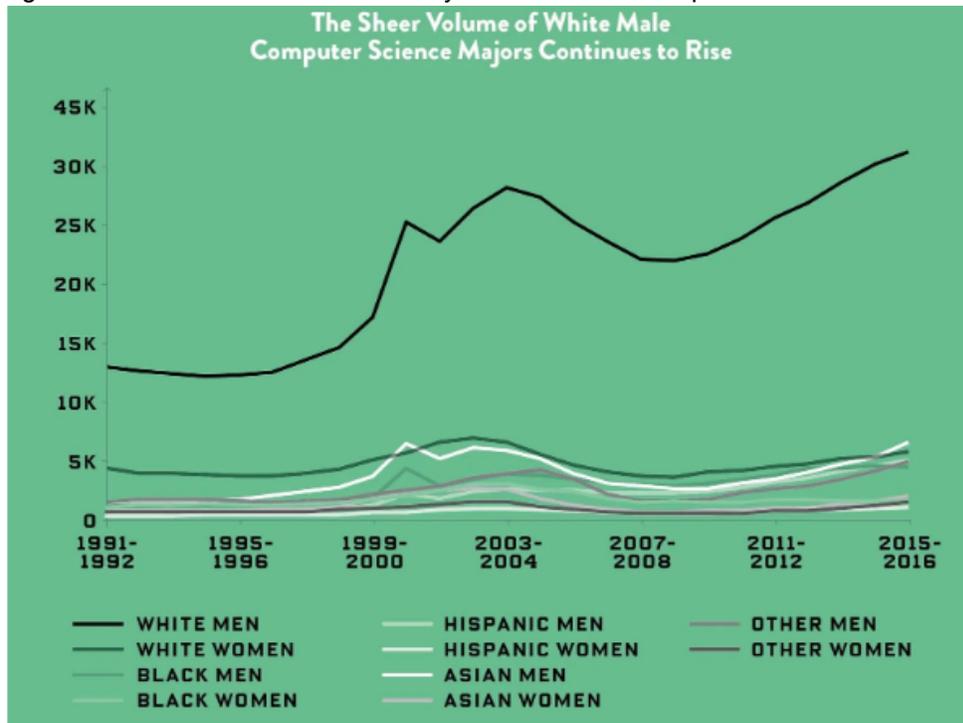
⁵³ Dressel and Farid, [The accuracy, fairness, and limits of predicting recidivism](#), 2018

⁵⁴ PewsResearch, ["pros-and-cons-of-the-algorithm-age"](#), 2017

⁵⁵ GoogleBlog, ["Text-embedding-models-contain-bias."](#) 2018

FaceBook. Power to allow user profiling to get people to buy your product and services, or to get people to buy your ideals, your 'news', to affect democracy, elections, your freedom of choice, your freedom of thoughts.

Figure 2 - An article about the Diversity of Students in Computer Sciences⁵⁶



This was as a result of research of colleges in the U.S.A and the percentages of women and minorities doing Computer Science Degrees and how biased the tech industry still is. In fact it said for women, there was more gender parity back in the first computing revolution with IBM having its first female VP in 1943.

The Wire's Sarah Harrison reports that not much has changed, though Asian males in the workforce have grown. Five years ago Apple, Google, FaceBook pledged Diversity and Inclusion, especially for Black and Hispanic workers. Female hire and workforce was up, especially in Google.⁵⁷ But they all responded that 5 years on more needs to be done, with CEO Tim Cook, wrote Apple employees a letter promising the company would be "as innovative in advancing diversity as we are in developing products."

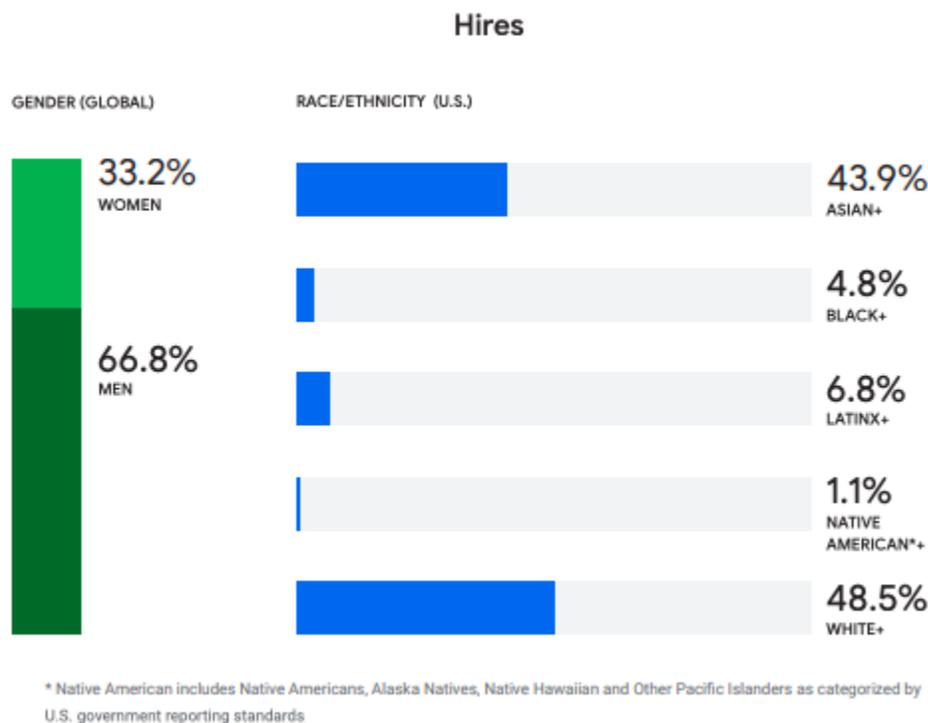
The numbers are particularly stark among technical workers—the coders, engineers, and data scientists who make these companies hum. At Google and Microsoft, the share of US technical employees who are black or Latinx rose by less than a percentage point since 2014. The share of black technical workers at Apple is unchanged at 6 percent, less than half blacks' 13 percent share of the US population.

Freeda Kapor Klein, a founding partner at venture capital firm Kapor Capital and a longtime advocate for diversity in tech, says, "Despite all the words, despite all the money, despite all the platitudes and initiatives, it's hard to say that the companies are really taking it seriously."

⁵⁶ Myers B, [Women and Minorities in Tech. By the Numbers](#), 2018,

⁵⁷ Harrison S, "[Five Years of Tech Diversity Reports—and Little Progress](#)", 2019

Figure 3. For example - GOOGLE - 2019



This is in spite of organisations like Deloitte and the WEF showing research that shows there is a direct correlation between high-skilled immigration and an increase in the level of innovation and economic performance in cities and regions.⁵⁸ Diversity is good for business.

But what does that all mean then for Māori? In 2016, Māori made up 1% of students training in the tech sector and 2.5% of the tech workforce in New Zealand.⁵⁹ This was confirmed by Kaye Maree Dunn of Āhau, as 1.6%.⁶⁰ What kind of harm will be done to Māori when 98.4% of digital technology platforms, services, programmes, data do not represent them.

Not only is there the issue of Māori in digital technology employment, but simple access to the internet is a type of digital bias and colonisation. The dept of Internal Affairs latest report said, “We find that Māori, Pasifika, those living in social housing, unemployed people, those not actively seeking work, disabled individuals, those living in larger country towns and older members of society are less likely to have internet access.” As they say, access to the internet is fundamental to the digitalisation of NZ. If these people are not included in accessing the internet, nor the tech workforce, how will they be represented through data, who will be represented?

Not only that, how will these people live in the future. Throughout Covid, unless you had internet banking, a debit/credit card, you could not pay your bills nor pay for your essentials. One of my family has mental health issues and she had extreme initial anxiety that her bills may go unpaid. If I wasn't there to sort that out for her, i.e. use my internet banking, debit card, things we take for granted, she would have started to accrue interest on bills and payments and her anxiety would have increased.

⁵⁸ Eswaran E, [The business case for diversity is now overwhelming. Here's why](#), 2019

⁵⁹ Forbes M, [Hui aims to get more Māori working in tech](#), 2016

⁶⁰ In Vision Week NZ webinar, June 2020,

As to my own bias, I acknowledge that my Master's is close to my heart and therefore I will have bias. I am a woman. I will have gender bias. My father was born to deaf parents therefore they were very poor due to not being employed for similar reasons to Māori and women and so I probably have a race, gender, disability and class bias. Where does that leave me?! Later on I talk about Tika, Pono and Aroha, that I do things the right way, in a respectful, honest way and I am empathetic - that is recognising many other positions and perspectives. I have tried to research broadly because I am more interested in understanding fully, than proving my pet theories right. Having a curious mind, being truly scientific, in the true sense of the word, searching and re-searching, is something I value; not to think I know already but to understand what is and to look for what could be. I want to reiterate that bias is in humans and humans embed their bias into systems, law, algorithms.

Ethics

Algorithmic bias is a global worry. As the world greedily laps the possibilities of AI and huge amounts of our data, greater minds than mine are trying to mitigate this issue. Ethics in digital technology is becoming more and more imperative as part of a real solution. Not just ethics, but ethicists in this field. Kay Firth-Butterfield, Head A.I. Strategist for W.E.F. believes ethics are so important that a Chief Ethical Advisor should be hired for your business.⁶¹ One of the methods they are looking at is through ethical regulation.

But my question is, whose ethics? Maui Hudson says that other Indigenous and post-colonial science scholars note that Western scientific knowledge 'is *not* the 'sum of all knowledge''⁶² Do they know that?

I have mentioned several times now that New Zealand's legal system and society from 1840 to the present are the inherited embedded values, ethics, worldviews of European/British, privileged men, and they have dominated the western world. These ethics have colonised because they come from the colonisers. Values are not universal! The mainstream of New Zealand, as part of the western world, is so homogenised and has been dominated by these values and ethics for so long, they assume there is no other way to view the world, it is THE world's view. There seems to be a fundamental lack of enlightenment originally talked about by well known Western philosopher Immanuel Kant. He said people who are unenlightened are dependent, unfree, lack the courage and maturity to engage their own intellect, reason, wisdom without the guidance of another.⁶³

It is also ironic that the dominance of the 'progressive', western world, so full of enlightened, superior culture, worldliness, knowledge, spirituality and science, have become the people who think their way is the only way, their world is the only world. They have gone full circle back to 16thC pre- Enlightenment which emerged as a response to an absolute monarchy and the fixed dogmas of the Catholic Church. Now it is the absolute western world views and the dogma of colonial values that prevails, i.e, the right of the individual to own and amass profit at all cost. But it is they now that are in need of great enlightenment!

This ethno-gender centric thinking, essentially colonisation, is dangerous because it doesn't just discount all other thought, values, and worldviews, it has tried to eradicate them. It is being challenged today, as it was just before the revolutions of the 18 and 19th centuries, with the history of protest against the colonising, European, men of privilege, by Māori, women, LGBTQ, other Indigenous, anti-apartheid, environmental protests, culminating in Black Lives Matter.

Those that have risen up out of the pits and sorrow of the degradation of having our thoughts and beliefs, values and ethics trampled upon, colonised, are armed with much knowledge and experience of this bias. We, Māori know that life can change dramatically. We know how to adopt and adapt. We are unafraid of

⁶¹ WEF, [five-ways-companies-can-adopt-ethical-ai/#27d973ac3cef](#), 2020

WEF, 2020, [Shaping the Future of Technology Governance: Artificial Intelligence and Machine Learning](#)

⁶²Hudson et al, [Recognising and valuing Māori innovation in the high-tech sector: a capacity approach](#), 2019

⁶³ Kant I "Answering the question; What is enlightenment? 1784 in the *Berlinische Monatsschrift*

new, of different, of change. We know how to weave a bigger world, take on many views and values, to make us wiser, more empathetic, worldly, critical thinkers, to start to see the real problems and possible solutions.

In light of this homogeneous and heterogeneous western thinking, who are the enlightened now? As Kant said, Dare to be wise!⁶⁴

What are these ethics and where did they begin? When you begin this research, the first searches are about western european history, bias in the search engine? Google searches seem very skewed to a European historical context. What of Chinese, Iranian, Tongan, Maldivian?

And apparently Socrates, The Greek philosopher, is the Father of Ethics. What of Hinenuitepō, Confucius, Avicenna, etc? Socrates' theory was basically that people would do what was 'right' if they knew what was 'right'.⁶⁵

Western ethics or moral philosophy are essentially a system of values to govern conduct. There are 3 major strands of ethics.⁶⁶

1. Meta-ethics - concerning the theoretical meaning and reference of moral propositions and how their truth values (if any) can be determined
2. Normative ethics, concerning the practical means of determining a moral course of action
3. Applied ethics, concerning what a person is obligated (or permitted) to do in a specific situation or a particular domain of action.

Naturally, there is modern literature regarding ethics. Modern, I found out does not mean new or original thinkers. I found the readings so patronising, with the same gender and ethno-centric bias as ever, whether it was Peter Singer saying that values are objective rather than subjective and then goes on to make such a subjective judgement I don't how he is afforded credibility. He talks about why he believes overweight air travelers should pay more than lighter passengers, the way we have to pay more for extra baggage.⁶⁷ As if every ethnicity has a standard weight. It's the same as in New Zealand where Plunkett used to say babies were over or underweight, rather than notice that some ethnicities weigh more than others, Tongan versus Indian babies. Or his take on our relationships with animals, not all cultures think the same. Think Hindu relationships to their cows, and the western world's historic relationship with cows. Another modern author on the subject, Stefan Skrimshire said, in regards to an environmental apocalypse, "The mainstream Academy...(needs) to bridge ...the sciences with the humanities, Aristotle to Plato, so as to recover a richness we have neglected."⁶⁸ Why is this not seen as madness? Get the same people who started the problem to think the same things, with the same mindset, believing they alone can fix the problem!

I wanted to scream, Who are you?! And did you ask what other cultures say, have said for millenia, about any of these issues. As if the concept of ethics only came to Europe, and the only philosophers were Greek, German, French, English and American. As if other cultures are not steeped in deep thought, philosophy, experience, or worse. The ethnocentric arrogance is galling. For them to speak of science and ethics without thorough investigation into other cultures' ideologies is anathema to the true "Latin word scientia" which meant knowledge, a knowing, expertness, or experience. By the late 14th century, science meant, in English, collective knowledge. It has consistently carried the meaning of being a

⁶⁴ Kant I "Answering the question; What is enlightenment? 1784 in the *Berlinische Monatsschrift*

⁶⁵ Liddel and Scott, *An Intermediate Greek-English Lexicon*. 1889.

⁶⁶ [Ethics](#)

⁶⁷ Singer, P, "Ethics in the real World." psxiii, 45-70, 130, 2016

⁶⁸ Ed Skrimshire, S, "Future Ethics-Climate Change and Apocalyptic Imagination." 2010, pxi

socially embedded activity: people seeking, systematising and sharing knowledge.⁶⁹ The reality is it is individuals making these decisions, without a lot of accountability or explanation.

Craig Hilton, scientist, lead academic Director at Tech Futures Lab believes the dominance of European ethics, in modern Aotearoa, New Zealand needs disrupting. What is its relevance and what of Māori ethics? Even evolution requires diversity to ensure survival of a species”, of an ecosystem, of a planet or even the human body.

Of ethics and values Pā Māori Marsden said, ‘Science and Technology give you the Know-How but values/ethics give you the Know-WHY...education alone cannot help us to choose between different options. Values are more than mere dogma and formulae. They are instruments by which we view/interpret/experience and make sense of the world.’⁷⁰

As a scientist, Craig pointed to the CRISPR Gene drive and the fact that though, under the *Environmental Protection Agency* processes have to take into consideration a Māori perspective, he believed it one of the first times scientists have engaged directly with Māori in this space. He thought it very necessary “explore the range of ways cultural values might be used to analyse the risks and benefits of gene editing in the Aotearoa, New Zealand context, .”⁷¹

He argues that modern ethics is now either ‘just something to cover your own arse,’ and continuing on from that, that ethicists seem only to focus on ‘do no harm not do good.

Again a difference of values is shown at this point. Māori think in terms of future proofing and we ask what are our responsibilities to ensure survival? Western ethics seem to be how can I hold onto what is mine and get more? In the recent design lingo term, the former is seen as having a growth mindset, the latter as deficit thinking. Maybe as I say below about western economic thinking, people are too profit driven to take risks or it is as Kant believed that people have become too afraid to think for themselves. This is how looking outside a dominant perspective can lead to new thoughts, new ideas, innovations.

But the real difference in values and worldviews becomes apparent in outcomes. One example is the basic difference of worldview on the environment. Essentially a western or Pākehā world view sees the environment as an asset, a commodity to be owned, managed, profited from, based on objective tests, asking what would a reasonable ‘man’ do, think? As opposed to a Māori worldview of whakapapa and kaitiakitanga, we have a relationship with Papatūānuku, and we are responsible to care for her wellbeing and survival, for the thriving of our future. Māori would put the environment before profit. This has led to thousands of decisions from local council to Government that have hurt the environment because what is reasonable to me may not be to you. For example, even only a few years ago, to fish wherever you liked, whenever you liked, as much as you liked, seemed reasonable to certain people. It was seen as totally unsustainable to other people, who had lived by seasonal fishing for centuries and had the expertise, the collective and experienced knowledge of what happens when you over fish. Look where the world is with the destruction of many fish species, nevermind the quality of the ocean, but no, the Western, economic, consumption model knew best and that was deemed ‘reasonable’. Fracking is another example, mining and intensive farming.

Related to this is the differences of cost and value in the western economy. In a western model of growth at all costs, the shareholder is king. Their financial investment, therefore their profit return is the only consideration, no matter the cost to the stakeholders, for example the effect of the product, investment, service on the local community, on the environment. This has led to a huge divide of the haves and the have-nots and to a sick environment. A Māori economic perspective values the relationships of the whānau, the Nation, the economy, the environment, their investment socially, recognising not all people’s contributions can be measured financially. The health and prosperity of people, planet, first, profit is a byproduct. This mindset still makes a profit. See Ruatopaki and Kono.

⁶⁹ Ketchell, [The weighty history and meaning behind the word 'science'](#), 2015

⁷⁰ P28, [The Woven Universe](#).

⁷¹ Te Pareake Mead A, et al, [“Indigenous Perspectives and Gene Editing in Aotearoa New Zealand”](#), 2019

My point is there seems to be an accepted lack of reference to other worldviews, especially Māori, Pacific Island, First Nations' peoples perspectives who do have an intricate system of values, beliefs, ethics, if you like. I elaborate further under Te Āo Māori. I also refer to the various Māori, ethical frameworks already in existence, under "This is not new." This lack of acknowledgement, understanding, acceptance of is costing society and the environment gravely. This must not be allowed to continue with digital technology.

I have mentioned briefly a couple of examples of Te Ao Māori, a Māori worldview firstly to remind people there are so many other worldviews in the world, than the western world's perspective and to demonstrate what can happen when you add another set of eyes, heart, thinking to any situation. You will get a different result from the same, same, but same bias.

Recap of the Issue

To re-cap, what is THE issue? Is the real issue bias in the law, in algorithms, in data? Is it a lack of diversity in power, in ethics, values, a lack of diversity, inclusion in the algorithm creators, designers, regulators, rule-makers, researchers, subjects, given a lack of diversity produces deficient data, producing the unintended bias harms? Is it a type of new, digital colonisation?

In researching and thinking about bias and ethics and all the other whirlpools I've ever gone down in this 25 year thinking journey since law school, when you unpack it, I feel the issue is and always has been one thing; WHO is in control? Who is making the decisions, the laws, the rules? And now who are the creators, the designers of this digital technology, the data coders and analysts, researchers, owners of the data? Whose values and ethics are being embedded?

Why do I ask this now, after 25 years? Because the consequences of machine learned biased data is potentially going to be exponentially worse than anything before. And when places like Stanford, Harvard, the World Economic Forum, Deloitte, are also worried and saying an inclusive environment is needed, diversity is essential in tackling issues like algorithmic bias, it feels like it's the right time to re-ask this question and look at solutions.

The issue is then that we have bias in our society, institutions, laws, and now the technology, algorithms, a result of one group of people's values, beliefs, methods, knowledge, analysis. That group is predominantly white, privileged men. They have had the unshared power for centuries. If you are not that, you do not thrive in society. You do not have access to the decision making places that will determine how you want to, let alone the means to thrive, socially, in health, in education, financially, because it is not a system, or values that reflect you. Algorithmic bias, digital colonisation is said to be exponentially more harmful for marginalised people already. This has to stop.

The Broad Solution

My response from law school has not changed regarding the issue of who is in control, to the issue now of mitigating bias. It needs to be different from the 'who' that has always been in control, that being white, privileged or wealthy males who bring their (biased) values, thinking and perspectives. There needs to be diversity of values and ethics, of thinking, of vision, of skills, and now, especially as society becomes more beholden to digital technology, there needs the participation of all voices in every area of society to harness and the immense power that is digital technology.

COVID-19 seemed to push that view. Aotearoa, New Zealand's slogan 'We're all in this together' suggests the collective community is really important. As if it has never been. Around the world the 'business as usual' stance is being resisted. On April 28 2020, Day L3 of Covid-19, I saw Frances Valentine on QnA with Jack Tame. She said that "who is at the decision making table has got to be different from those that were there." It's the values, the vision, the beliefs of the decision makers that are embedded into society. We need new voices, new decision makers.

In Aotearoa, New Zealand, specifically, the first voice that needs to be heard is Māori, as tangata whenua, the Indigenous people, co-leader with the ever heard and seen Crown, under Te Tiriti o Waitangi of Aotearoa, New Zealand. Not only will it add to the healing of this historic injury that an ethno-centric values system has caused Māori, it will also lead a way forward for others who have been marginalised and silenced from life.

Even though Māori have always maintained an influence in Aotearoa, New Zealand, not much is actually known or understood by the general population of the value of Te Ao Māori perspectives and culture. Further on I list just some of the ways Māori have changed western thinking and systems in New Zealand, and added human and economic value. But at the very least, Government and business need to realise that it is Māori thinking, Māori culture that is of interest internationally, is their unique selling proposition in the world.

Now is the time to start new design processes, with a better understanding of Māori values and processes that can guide new vision and outcomes and new strategies to achieve them. I want to see a Te Ao Māori co-led, co-created approach understood and involved, from the very beginning of every decision affecting Aotearoa, New Zealand. Not just for Māori stakeholders, but for the prosperity of everyone.

Research Question

My hypothesis is that in Aotearoa, New Zealand, Tikanga Māori, Māori values and worldview, that has at its core, the well-being of spirit, people, and planet, is needed to disrupt the foundational and dominating western values and ethics that have protected the individual right to own and consume, to keep certain groups of society out, almost at all cost.

Regarding digital technology my 2nd hypothesis is that Māori, our experiences, knowledge, values are now needed at the helm to lead us through to our digital future.

Initially I asked, **“How can Tikanga Māori be practically embedded and applied to inform a new set of ethics, values, for a new, post-COVID Aotearoa-New Zealand, world; from citizen, to whanau, to hapū/community, to iwi, business, Government?”**

Below I asked and answered these Sub-Questions:

- Can Te Ao Māori have a single set of tikanga-ethics-guidelines for all things, including for ALL digital technology, because there are already different Te Ao Māori frameworks in different spaces, eg Te Ara Tika, Rangahau, for research, Te Whare Tapa Wha, for Health, Te Mana Raraunga’s model for Māori Data Sovereignty?

To answer this question I researched many tikanga experts and found there are some inherent tikanga that do not change. I have listed those in the basic draft tikanga. How they are applied changes according to the subject matter evidenced by the many Tikanga Frameworks that already exist. Tikanga is living, agile and adaptable for context and time. In terms of Digital Technology, Taiuru says different uses, different parties require different tikanga and approaches. So a one size fits all, template approach, won't be useful.⁷²

I also like the idea of a framework to be collaborative with the users, so that the outcome is unique to the users.

- If feasible, under Te Tiriti o Waitangi how could these be part of the Government’s ethics governing digital technology, to become part of a National Standard, or some Nationally Applied Guidelines, enforceable by law?

⁷² Taiuru, K. 2020. Treaty of Waitangi/Te Tiriti and Māori Ethics Guidelines for: AI, Algorithms, Data and IOT., p 24

To answer this I interviewed people in Government, from a minister, to policy-makers, to Māori leaders. There needs to be Māori unity and will for tikanga to be used in this way, there is not much faith given the place of te Tiriti o Waitangi, though there is recognition that times are changing. There needs to be a political will, and given the DIA's folding of the WEF AI strategy working group, that looks tenuous. Possibly it needs a push from business to Government that a National Standard is good for business.

Taiuru has made some recommendations in his work, T.O.W and Māori Ethics, which came out in April 2020.⁷³

How could technology be adapted by tikanga as well as the other way around?

The research and interviews reveal much more information is needed to answer this. The little information there is, we need more Māori with tikanga knowledge creating the technology and it's uses and educating non-Māori creators of technology on Te Ao Māori. .

The above question became more refined.

“How can the above idea be tested by developing a draft Tikanga Matatika/ Tikanga Māori framework for a Māori Businesses, two Pākehā businesses, and my hapū, Ngāti Hine.”

To answer this question I developed a Matatika, Framework to test with companies and organisations, but due to Covid, testing became interviews for the bare proof of concept that a Tikanga Māori Framework is wanted, can be of use as another lens for decision making.

Aims/Objectives: My WHY

I had hoped the findings from this inquiry would inform a living, working, practical Tikanga Matatika/ Maori Charter/Framework/Guidelines that can be adapted and applied to any situation, group, Government, company, as a collaborative tool to give a different lens, a Māori set of values, to aid innovation, development, implementation, decision making. The bigger aspiration is to start to change systems, processes, the faces of people in power in Aotearoa that reflect Māori, to undo some of the harms of exclusive, colonial bias and restore dignity.

I believe Māori, with our profound historic faith, long held values, beliefs, stories, knowledge, traditions, coupled with the long experience of loss, struggle, change, adaptation, iteration upon iteration that the anvil of colonisation has sharpened and honed in us, means we have something very valuable to offer right now as we, the world, faces some of the greatest challenges we have ever faced.

⁷³ Taiuru, K. 2020. Treaty of Waitangi/Te Tiriti and Māori Ethics Guidelines for: AI, Algorithms, Data and IOT.

But the aim, the objective, most dearest to my heart, is that the 180 year struggle that Māori have endured will have been worth it, as our mana, the dignity of all those who died with a broken heart will be restored, and the dignity of our future to come will be waiting for them to receive, by the contribution we make today, to the world as we share our timeless and valuable knowledge, beliefs, perspectives of our interconnectedness of spirit, humanity, time and beloved planet, ensuring all four flourish as we move forward together.

My biggest stakeholders are my mother, Mairehau Tui, and my kui, Ihapera Henare. This will be a solid beginning to fulfilling that most personal of aspirations, to restore the mana of these two women who could never fully be their authentic, brilliant, sharp, wise AHAU-selves, because the society they were born into cared nothing for Māori, let alone Māori women. Hopefully that will never happen again to another person. Now that would be an output! I wrote that before the George Floyd story and recent riots. I reiterate, diversity, disruption to this monocultural system, values, worldview in our digital future is vital.

Another objective is to raise cultural awareness, understanding and proficiency of Te Ao Māori in non Māori organisations. One good thing about the ethnocentric, western perspective is because it's been so homogenised into society, we, in New Zealand and other 'western' countries have all been fully immersed in it. You never lose your own worldview, even if it appears diluted, it's not, so I am very lucky to have the privilege of knowing two world views quite intimately. But now I want a Te Ao Māori perspective known and I want to test it out in the world.

Te Ao Māori

I can't talk about Tikanga Māori without a very brief overview of Te Ao Māori. This is very basic and a very shallow explanation. More care and explanation is needed but I believe that can only happen in specific circumstances. It is not suitable for this Master's. There is much literature, and there are wananga, learning opportunities available to those who want to know more.⁷⁴ I also reiterate that my references are my kaumātua who have gone before, there is not one Māori worldview..

Tikanga is process. Te Ao Māori is what the process lives in and it all starts with Io. As said from the outset, my words come from Pā Māori Marsden. Nga mihi ki a koe, koro.

“Kia whakatōmuri te haere whakamua:” ‘I walk backwards into the future with my eyes fixed on my past.’

This whakataukī or 'proverb' speaks to Māori perspectives of time, where the past, the present and the future are viewed as intertwined, and life as a continuous cosmic process. Within this continuous cosmic movement, time, place, people, has no restrictions – it is both past and present. The past is central to and shapes both present and future identity. From this perspective, the individual carries their past into the future. The strength of carrying one's past into the future is that ancestors are ever present, existing both within the spiritual realm and in the physical, alongside the living as well as within the living. With this is meant to carry much comfort and responsibility, the comfort of never being alone, always with those gone, those here, those to come, and the love from and for them to take responsibility for one's individual actions.

Māori “perceive ultimate reality as wairua, (spirit), the universe as a process, Io Taketake as first cause, the genesis of the cosmic process, comprising of inter-connected realms, separated by aeons of time, where eventually emerging was the natural world. The cosmic process is unified and bound together by

⁷⁴ Marsden, M, The Woven Universe, Barlow, C, 'Tikanga Whakaaro, 1991, Durie, M, Many books, Shirres, M " Te Tangata" 1997, The Waitangi Tribunal has many taonga of Mātauranga Māori by Iwi. Just to name a few people and places.

spirit.”⁷⁵ “Spirit is ubiquitous, imminent in upholding/sustaining/replenishing/regenerating all things by hau/mauri - breath of life principle. The ALL is ONE and interlocked together...is HOLISTIC.”⁷⁶

The Māori and Pākehā worldviews then created systems that reflected their beliefs. Māori have Tikanga, traditional knowledge, kawa, protocols, and institutions, for example whare wananga, a place of learning steeped in practical and spiritual knowledge or the marae, a meeting place, where all important events and discussions take place.

Because of the holistic approach, Māori avoid disjunction between Me and You, secular, scientific and spiritual, compartmentalisation and isolation of one institution from another, one part of the body to another, and the symptom treating, piecemeal approach to conflict resolution, to health, to education etc. Māori Marsden saw this division and classification of all things, the universe, the body, society, the treating symptoms and not causes, as the major weakness of the enlightenment, of the European perspective of life.⁷⁷

According to Māori, everything, whether animate or inanimate or unseen, whether human, environment, society, politics, technology, time etc is seen as an organism not an organisation, to be seen as a whole, though made of individual parts and the greatest ‘job’ was to balance the needs of the individual with the needs of the whole and vice versa, to achieve the above, upholding, sustaining, replenishing, regenerating.

We came from the earth, and beyond, therefore we belong to her, not the other way around. This notion of relationship, connection is in direct opposition to the view that everything is a commodity, to do with what the human wants for profit. If the earth, the sea, the air, nature, trees are my relations, where without them I will die, their value is personal to me, to the past and to future generations. If ‘it’ is a commodity whose value is a price in the marketplace, and I am separate from it entirely, it’s mine to own, to buy and sell, then it is not difficult to see how different the outcomes will be from those two different perspectives.

Even Deloitte’s talks about the need for Governments to adopt a ‘holistic’ approach to ‘crafting an AI strategy... Maximizing its value will require an integrated series of decisions and actions.’⁷⁸

The 2 very basic differences between a western european worldview and set of values and the Māori, and other indigenous culture is this;

Māori think “WE” are part of, connected, therefore we all have a RESPONSIBILITY to CARE FOR. The Western view is ‘I’ am separate from “YOU”, and ‘I’ have the ‘RIGHT’ to ‘OWN’ anything, the earth, the sea, Nature, knowledge etc, and once upon a time, anyone, women, children, certain races for example.

It will be interesting the real value, importance that Governments, organisations, businesses place on AI and digital technology. Will it be a human-centric value first, or will it be seen as a commodity with enormous economic return? That answer will determine the outcomes for humanity and for the planet.

Related to this point is another difference between the 2 worldviews that Rev Māori Marsden spoke about. He said that Western education and technology teach us the ‘KNOW HOW’ but not the KNOW WHY...”unless metaphysics is part of the education system, education cannot help us to choose between different options and pick through life. Values are more than mere formulae and dogma. They are instruments by which we view, interpret, experience, and make sense of the world.”⁷⁹ If you don’t know why you are doing something or going somewhere you won’t achieve anything and you’ll get lost.

⁷⁵ Māori Marsden, p31, “The Woven Universe

⁷⁶ p33

⁷⁷ The Woven Universe, p33

⁷⁸ Eggers, Keshnani, Mendelson, Chew, Deloitte’s Insights, “Crafting an AI Strategy for Leaders,” 2019.

⁷⁹ Māori Marsden, p28, “The Woven Universe

Power/Hierarchy/Democracy

There was a hierarchy in society. Te Ariki was the paramount chief, decided upon by either birth or those deemed to have the mana, the spiritual, physical, mental and emotional power and authority. They, and other rangatira, leaders, were spiritually selected by the kuia, kaumātua (the elders), the tohunga, the spiritual advisors and then the whanau, hapū iwi at large, in fact everyone had a place. Decisions were made collectively on a semi consensus basis. Each had a valid right to have a real voice and all were encouraged to engage in robust discussion and if need be, to challenge.

Pākehā has systems of hierarchy. Power was given depending on birth, land and money. They became the values setters and lawmakers of New Zealand. The laws embedded their values that create systems and institutions to carry these out, run by selected people deemed appropriate by the decision makers. As we know there has been a system of 'democracy.' But of course this was not true democracy. In New Zealand, as it was for all the countries the British colonised, only landed or wealthy men who could write, to sign their name, who owned land on an individual title to land system, a British system of land division and ownership, could be in Parliament, could run for Government, could be the decision makers in a society.

In New Zealand that meant Māori, women, the poor, the illiterate, the majority of New Zealand society, were kept out of the creation of Post Aotearoa, Post Treaty of Waitangi 1840, New Zealand. In 1868, after much agitation from Māori, there was a token nod to democracy. Parliament allowed there to be four Māori seats, after dividing New Zealand into four Māori areas. Some in the Government thought there should be open representation but many feared the numbers of Māori would outweigh that of Pākehā, therefore they would lose their power over.⁸⁰

Unsurprisingly New Zealand became a country that would only be prosperous for those that understood the new game. Although there were the Māori four seats, they have always been bound first by the small number within Parliament to have much effect, but more, they always had to play a game, with rules foreign to their mindset and world perspective, therefore they were never going to have the real teeth needed to make serious inroads for Māori. And of course, women, men of certain class and ability were also not part of the decision making process by not being employed at top levels of any area, until women got the vote in 1893.

Why Māori?

I had tried to avoid talking about Te Tiriti o Waitangi as the reason Māori need to be included fully, considered as part of leadership teams, part of the visionary helm in New Zealand's emerging digital world. I don't like that semi-threatening tone of you must, you better. Instead I wanted, I had hoped 20+ years after law school, non-Māori were all becoming enlightened as to why they would actually want Māori on their team, why Māori need to be at all decision making aspects, especially in a post-Covid world, that being because of what coursed through our veins in terms of future and holistic thinking, whakapapa, connection to one another and the planet, manaakitanga, kaitiakitanga, care for one another, the planet, our future. I was excited with this thought.

As the Interviews went on with Pākehā in tech businesses, Governments departments and agencies, the more I realised that the history and the facts of Te Tiriti o Waitangi, Maori culture in general, are facts many New Zealanders need reminding of, and for many it was a total education. There was discomfort and awkwardness (by them) about that perceived lack of knowledge, understanding and engagement with Māori. There was genuine desire to engage but awkwardness. I do talk about this further in the analysis and findings of my interviews.

⁸⁰ NZ History, [Māori MPs - Parliament's people](#)

As I presented and was part of multicultural and 'minority' groups, webinars, zuis and zoom meetings, for example Women in Tech groups, rural or older communities, all competing with needs for Inclusion and Diversity in the world, let alone with digital technology, the issue of bi rather than multiculturalism was raised. Again there was an awkwardness, a bristling, and sometimes plain misunderstanding, thinking bicultural Aotearoa, New Zealand, meant a Māori and Pākehā New Zealand, excluding other groups. It is not that but it all rather sorrowfully and disappointingly told me there is still a lot more teaching, learning and understanding of Te Tiriti o Waitangi and the place of Māori in Aotearoa, New Zealand needed. That Aotearoa is a Māori led, Māori invitation, through Te Tiriti o Waitangi, with all other- non-Māori, to be a partnership, with the Crown as the non-Māori representative. We are a bi-cultural nation, multi-cultural society.

Te Tiriti o Waitangi/ The Treaty of Waitangi 1840

Te Tiriti o Waitangi 1840 is the legal document of Aotearoa, New Zealand, post 1840. It legitimises the Crown and all non-Māori that have come into Aotearoa, New Zealand under Te Tiriti o Waitangi. It does not legitimise Māori. They were already the legitimate citizens of Aotearoa, as the tangata whenua who had already been here 800+ years. For Māori there is one valid Te Tiriti o Waitangi, the Māori version, as opposed to the Treaty Of Waitangi, the English version, which became the legally recognised Treaty.⁸¹ Te Tiriti o Waitangi was the only one Māori signed. There was no english version at that time, how could there be, in Aotearoa Māori only spoke te reo Māori. The translation was done through the use of Biblical english, as missionaries had been there for a while. Anyway, Te Tiriti o Waitangi shared power, allowing the British to 'govern' over their own, whilst Māori had tino rangatiratanga, complete sovereignty. The English version says Māori gave their sovereignty to the British, but were allowed to govern themselves.

After having been dismissed as a 'nullity' in 1877 by common law,⁸² The Treaty was reinstated into our legal system under the Treaty of Waitangi Act 1975 (The english version, The Treaty of Waitangi). The principles of The Treaty of Waitangi were spelt out in common law cases.⁸³ This meant if your business, policy etc was governed by particular statutes you were legally bound to take into consideration the principles of the Treaty. The Government, therefore the citizens of Aotearoa, New Zealand also have moral obligations under The United Nations Declaration on the Rights of Indigenous Peoples GA Res 61/295 (2007), which New Zealand officially endorsed in 2010.

It is not Aotearoa's founding document, nor is it the document Māori need to point to for their rights here in Aotearoa, or their rangatiratanga/sovereignty. In our mind we have never lost it nor should there be a need to ask for it. Māori are the tangata whenua, the people from and of this land, literally. We have a vested interest, a deep understanding, always have had, in the present, past and future of Aotearoa, New Zealand, the well-being of all our people, the environment and we have had a system for ensuring the survival of our future since the beginning of time.

Rather, Te Tiriti o Waitangi, is the document that gave British Europeans and now other citizens their legitimacy to be here. It was a 'partnership', a contract between two separate entities, Māori, who were the rightful 'Chiefs', the power-base of Aotearoa, and the Crown, who were allowed some control over their own people and then under whom all other non-Māori who seek to live here are legitimized. Therefore it is bi-cultural, bi-contractual. Aotearoa, New Zealand is a bi-cultural, as opposed to a multicultural country.

Partnership principles of the Treaty of Waitangi was a term articulated by Justice Cooke in a the State Owned Enterprises Cases⁸⁴ but for Māori our definition of partnership is spelled out in the original version, Te Tiriti o Waitangi.

⁸¹ See Appendix 3.

⁸² *WI Parata v Bishop of Wellington* 1877

⁸³ *The New Zealand Māori Council vs the Attorney General* 1987 with Justice Cook, and see appendix 4, the 'Principles'

⁸⁴ *The New Zealand Māori Council vs the Attorney General* 1987 with Justice Cook, and see appendix 4, the 'Principles'

Below the important article is below, first in te reo Māori, then in English, then a note by Professor Hugh Kawharu. See also Appendix four.

Ko te tuarua - Ko te Kuini o Ingarani ka wakarite ka wakaae ki nga Rangatira ki nga hapu - ki nga tangata katoa o Nu Tirani te tino rangatiratanga o o ratou wenua o ratou kainga me o ratou taonga katoa.

Article 2 - The Queen of England agrees to protect the Chiefs, the subtribes and all the people of New Zealand in the unqualified exercise of their chieftainship over their lands, villages and all their treasures.

Prof Hugh Kawharu⁸⁵ - "Unqualified exercise" of the chieftainship - would emphasise to a chief the Queen's intention to give them complete control according to their customs. "Tino" has the connotation of "quintessential". (8) "Treasures": "taonga". As submissions to the Waitangi Tribunal concerning the Maori language have made clear, "taonga" refers to all dimensions of a tribal group's estate, material and non-material heirlooms and wahi tapu (sacred places), ancestral lore and whakapapa (genealogies), etc. (9) Maori "hokonga", literally "sale and purchase". Hoko means to buy or sell.

The term Rangatiratanga, is that we were to continue to be Māori, the way we had always been Māori, practising the same rituals, living the way we had done so for 800+ years. The British were British and would look after their own. Together we would live alongside, sharing knowledge, resources.

New Zealand is seen by some Māori as a bicultural country and a multicultural society. It is bicultural because of the contract, Te Tiriti o Waitangi, between Māori and the Crown. Though Pā Maori Marsden said, in the 1970's, that Māori should go beyond bicultural development and partnership but press on for the Te Tiriti o Waitangi rights of rangatiratanga, self-determination, Māori define who and how we want to be.⁸⁶ Let's ensure the restored dignity and identity of Māori, repair the relationship with Māori and the Crown, before we leap in to include others.

There is an oft-quoted kōrero "Let's work together," said the shark to the kahawai. Great," said the kahawai with a trusting smile. 'Fool' thought the shark as it opened its mouth and swallowed the kahawai. "That's partnership," said the politician. "That's integration," said the bureaucrat. "That's assimilation," said the Māori.⁸⁷

It is for that reason that Te Tiriti o Waitangi is THE document we all need to understand as the beginning governing document to lead us forward in the spirit of connect, consult, collaborate. It is a true partnership model, an AND/AND offer. The English version was characteristic of their worldview which promoted an us against them, either/or, my way/highway adversarial, deficit mindset.

Where this was a Master's of the importance of Tikanga Māori, Māori values, based on our collective, connected, people, planet wellbeing world view, incorporated into emerging digital technology, it has become a story of how much work, education, understanding is still needed to explain the fundamental place of Māori as tangata whenua, the people of, from this land, and the place of Te Tiriti o Waitangi/The Treaty of Waitangi 1840, to everyone that wants to call this place home.

Before we get too excited about the machinery, the 'intelligent' technology, it comes down to the 'intelligence' of the humans first. We have measured Intelligence Quotient, now we have Emotional Quotient, the AQ-Adaptable Quotient, and the CQ-the Cultural Quotient. In Aotearoa, New Zealand, Te Ao

⁸⁵ Kawharu H, [TE TIRITIO WAITANGI THE TREATY OF WAITANGI](#)

⁸⁶ Marsden, M "The Woven Universe", p25

⁸⁷ Tamaira A.T. thesis, Making Myth, Making Nation. Māori symbols and the construction of bicultural identity in Aotearoa, New Zealand. 2009

Māori and Te Tiriti o Waitangi education, understanding is vital in the humans that are going to create and collaborate with the digital technology, the products and services, the data that will be gathered, analysed, owned and used. Then maybe we will have safe, useful Augmented Intelligence.

Committing to the worldview of Māori, which is very basically the connection and well-being of spirit, planet, people, and this ideal of a true collaboration of power, energy, innovation, ideas, knowledge, hope, vision of two people through Te Tiriti o Waitangi, would make us world leaders, trail blazers, truly pioneering in a way people haven't seen, since perhaps Kupe left Hawai'iiki or Columbus and Cook left their respective countries for the first time, without maps, just under the drive that something more was out there. A country with a collaborative power-base is the new discovery, the missing taonga/treasure. We could be the example of what true collaboration, diversity, inclusion looks like.

Aotearoa, New Zealand could metaphorically set sail, under the flag of Te Tiriti o Waitangi to find, instead of new lands, re-find lost taonga, treasure, that being the lost or discarded values, tikanga, ethics of connection to, relationship with spirit, planet, people, to create the well-being that is much needed in a Post Covid world. In 2020 it is shameful that greed and profit is the dominant value in western, if not all societies and that injustice, poverty, ill-health, slavery, inequality, racism, sexism, hate, religious or spiritual intolerance, illiteracy, innumeracy still exists. We are not ready to harness the digital technological world if we are not ready to overcome the worst of our humanity to harness our best.

The real question is can two completely different worldviews create a new New Zealand that has the shared values, vision, knowledge and power between Māori and the Crown - does anybody really want this?

More Positively

But there are some positive reasons why going forward into such an unknown future as we have now, especially post-Covid, Māori should be involved from the vision and co-creation, all the way through the implementation process of a 'new New Zealand', to quote Robett Hollis, or an Aotearoa-hou. The new lingo calls this growth versus deficit mind-set.

The 'spirit' of Te Tiriti o Waitangi, the document signed by some iwi, tribes, from a Māori perspective, was the ultimate recognition of two authentic selves, Māori and Pākehā, of partnership, shared power, sharing resources, you look after yours and we will look after ours, in response to lawless mariners and other people buying and selling and staking their name to land, causing more conflict in Aotearoa and between tribes. Just one of the guarantees of the contract, Te Tiriti o Waitangi, under article 2, rangatiratanga, We respect you, you respect us.

It has **Connect, Consult, Collaborate** at heart.

In fact this 'CO', Collaboration, CO-Ownership, Consensus, Decentralising, Autonomous, Authentic, Open, Transparent - language is turning up as the lexicon of smart, lean, agile designed business. These are 'new', (but not to indigenous and other cultures) and growing concepts being adopted around the world changing practice and behaviour. Look at the new work office spaces. Apple and other tech companies realised you were more likely to be innovative, to reach new solutions, were brighter, had more energy when working together, than in individual, protective, silo-thinking and work habits. There is hope for a merging of the old, traditional Māori thinking and living and the new, to take us into the future.

Māori are ready, have been ready for nearly 200 years, not just to participate, but to take leads in certain aspects of societal problems including this complex and huge phenomenon that are EDT's. It's a good news story for us, and to take to the world stage. After all, this is the age of innovation, of 'out of the box' thinking, so who better to find possible solutions but a people who have never been part of, have been actively kept of that box and will see some things from a fresh, new, way.



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The whakatauki also means to learn from your mistakes. Craig Hilton, Lead Academic Director at Tech Futures Lab said “interesting - this is exactly what AI, through amendments of its algorithms does. It uses old data to predict/go forward.” Māori have inherently understood and done what this new technology does, but the technology hasn’t learned how to pivot or change if the old data doesn’t apply, was faulty, needs changing.

It is no surprise to us then that our kōrero, mātauranga, knowledge, our history, and the stories of our tupuna, ancestors, are as relevant then, as they are in digital technology, or in a Post Covid world.

I don’t need to validate the value of stories as valuable knowledge, but for a Māori context read Jennie Lee’s Rangahau Research Pedagogy,⁸⁹ and I came across an American researcher, Brene Brown who said stories, ‘myths and legends’ are data with soul.⁹⁰

At a Tech Futures Lab presentation about what a Post Covid world would look like, I shared five stories in our culture that were so on point to the world that is unfolding.⁹¹ see Appendix 4.

I will share just this one. Māui was an ancestor who saw a problem, a big one; the Sun was zooming around the earth too quickly (I realise that this is not scientifically correct but it does not diminish from the insights to be gained) so that people couldn’t function. He then came up with a solution. He harnessed the power of the community, by sharing his bold and possibly dangerous plan and then got them to work together using their unique and diverse skills and strengths to harness the energy of the sun to make it work for them. In this and all of our stories are complex and multi layers of belief, thought, knowledge, value constructs; but the simple message works at the heart of Māori belief, because of our connection to spirit, to past, present and future, we have access to all knowledge, insight, energy, and together, united, we are more, know more, have more, can do more. This was written pre-Covid 19, before the political rhetoric of together we are more.

All five stories also point to a really important lesson that Pa Māori Marsden said was a major difference between Māori thinking and technology. Science and technology knows how, we know how and why!

Navigating great oceans, finding new lands, tackling huge fish, surviving the huge tsunami of colonisation, adapting, iterating, failing fast, being agile and lean, courses through our veins. Who better to lead these somewhat uncharted waters, navigate the tsunami of EDTs, and now a Post Covid world, than the people, where harnessing great power is in their DNA! In fact, before the Treaty of Waitangi and then the Land Wars, Pākehā and Māori worked well in some areas, developing businesses for produce that was in demand. But the Government in Britain, then the one started here, didn’t like the success and the

⁸⁸ From the NZ women’s suffrage march, 2018.

⁸⁹ Lee, J, [Māori cultural regeneration: Pūrākau as pedagogy](#), 2008

⁹⁰ https://www.ted.com/talks/brene_brown_the_power_of_vulnerability, 2010

⁹¹ See Appendices 4.

independence - it was seen as a threat. We were born traders, innovators, adaptors to change and seized opportunities.

Māori influence in Aotearoa, New Zealand

Māori influence is rarely realised or measured in terms of economic, environmental and social value to our society. It is like Nature, it is ever present, and irrepressible. Here are just some examples of our contribution to Aotearoa.

Labour's Well-Being policy isn't the brain child of Labour, looking at a whole society instead of the siloed parts, measuring the wealth and health of our Nation in terms of all people being well, having their dignity, a place in society, and the present and future wellbeing of the planet, it is a fundamental Māori worldview, are Māori values, of whakapapa, kaitiakitanga, manaakitanga, always there, have never gone, not a Government policy lasting the term of their election.

Cultural economist Atawhai Tibble has developed an economic model, Ngā Rawa e Ono (the Six Tribal Capitals Model). The model is broadly based around five core capitals – tribal or people capital, relationship capital, cultural capital, kaitiaki capital and political capital – bound together by a sixth capital described as the requirement to make mokopuna-centric decisions that are focussed on intergenerational longevity. This is what storytelling expert Joe Harawira describes as “Mokonomics”, i.e. “what world are we leaving our mokopuna?”⁹²

This notion of intergenerational wellbeing is common across all Māori tribes. For example, Tunohopu of Te Arawa said “*He aha au i mate noa ake ai ka tupu aku pakarito.*” “I will not perish for my descendants will live and prosper.”

Health/Hospitals - A special corridor for the tupāpakū, dead was made at the behest of Māori, stating what a tapu time it was, and just plain giving their dead and the whanau privacy and dignity. Before, the dead were merely wheeled along the public corridor, while anyone was around and the whanau just had to cope. We are allowed more whanau now, they understand people get better when they are with their whanau, instead of the sterile 1 or 2 visitors at any one time. No patient to be spoken to without a whanau member. They are getting how we all need support and that drs don't just have the authority to treat a patient like an object. Having been in British and french hospitals New Zealand should feel very proud of our care for the patient and the whanau.

Death - more non-Māori families are wanting tangi. Not that long ago, 10, 20 years ago the precious dead of Pākehā were at an undertakers for days all by themselves, followed by the one day, closed coffin funerals. That is of course still an option but now more Pākehā and others are grieving their loved ones by bringing them home, sharing with family and friends. The work place has recognised this and offers more bereavement leave than they used to.

The Casketees is a show that highlight our practises and how they adapt for other cultures. Internationally people are just so attracted to the Māori love and ceremony we show our dead.

Justice Mick Brown, first Māori Judge, revolutionised our criminal justice system in 1989 when he introduced restorative justice, changing the purpose of the CJS away from just punishment. It was based upon marae justice where all parties heard each other face to face, giving the victims and their families the chance to address the accused kano ki te kano, face to face, and vice versa. Imagine the sterile court system we had, where victims and families were ignored, and the accused didn't have to face their victims at all. This practise was not for punishment but for a chance for all parties to actually heal, change and really change society. Revolutionary. We have the youth court, drug and alcohol court, as a result. It is held up internationally as leading, still, in 2020.

⁹²Lloyd, T, Article 9, “He oranga He Oranga mo Aotearoa.: Māori well-being for All” Deloitte, 2018

The economy. Māori economic theory is becoming of interest internationally, as Post-Covid exposes where the value of western profit and growth at all cost, as the most important thing in a society, has gotten many businesses, governments, individuals. Te Taumata, Māori economic lobbyists and advisors to the Government recently shared their theory before Labour's budget announcement, insisting on NO to 'Business as Usual. "Over the past 40 years, global business has centred on shareholder primacy – a commercial ideology that focuses on investors and shareholder returns to the exclusion of all other stakeholders...In recent years, international governance developments have been revisiting shareholder primacy, and there is now a well-developed recognition of stakeholder primacy. This is evident in EU Directives, in the 2020 Davos statement of corporate purpose, and in the August 2019 USA Business Roundtable reframing of corporate purpose." ⁹³

Before Post Covid there have been many other circumstances which have threatened this western model, the Depression, the Wars, financial crises. But still the western world has held on, hoping above hope they won't have to change. The inequalities and waste have accelerated over the years, though the foundations have been weakening for decades, and now the time could be now for new economic and societal models to emerge.

Oxford economist, Kate Raworth's Doughnut Economics is making waves around the world with what she considers to be a revolutionary new model. It was adopted by the city of Amsterdam to inform its social policies. She agrees that the constant growth economic model with its exclusive beneficiaries is unsustainable and belongs to the last century. Going forward, she credits Māori and other Indigenous people's collective, holistic models of society for the inspiration of her theory, and as a good foundation for new economic theories.⁹⁴

Recently there has also been an Indigenous View on the Doughnut theory⁹⁵.

See also real Māori businesses succeeding with the principles of people and planet wellbeing, Tuaropaki, Kono.

The Environment. Of course there are our environmental policies contained but not exclusively in the form of the Te Ture Whenua Māori Act 1993. Governing from our sustainable principles of kaitiakitangi, custodians versus owner, responsibility vs rights, whakapapa, connection to, relationship with our environment has led to reinstating some future protecting policies regarding fisheries, forestry, river, lakes and sea care, to try and bring our country back to some semblance of the clean and green it once was. The 100% that NZ tourism promotes.

The revolutionary case being the Te Awa Tupua Act, giving Whanganui river personhood status as the distinct relationship of the Whanganui iwi and the river emerges from tikanga Māori (Māori law), which positions humans and nature as intrinsically interconnected and interdependent, manifest in their tribal idiom, "I am the river, and the river is me." The river will be represented by nominated legal guardians, who will speak and act in (and if necessary, fight for) the river's best interests.⁹⁶

Lastly I want to talk about the peaceful protests Māori have engaged in over the last 100 years. The dignity with which they have maintained their demands to be treated as partners that their Te Tiriti o Waitangi gave to the British, to have back what was stolen or wrongfully taken, has been commended by Nelson Mandela, Mahatma Ghandi and the Martin Luther King Foundation.⁹⁷ Nelson Mandela said, "We feel truly welcome and among our own brothers and sisters," he said. To be a guest of Maori was a great honour. "As a people who have known deprivation, we do appreciate your efforts to redeem a past of dispossession and social dislocation that colonialism has wrought on your community."⁹⁸

⁹³Letter to Govt from Te Taumata, a Māori Economic Group. April 2020

⁹⁴Raworth, K, [Doughnut](#)

⁹⁵Teina Boasa-Dean, Juhi, [An Indigenous View on Doughnut Economics from New Zealand](#)

⁹⁶Macpherson, O'Donnell, Ospina, [Meet the river people: who speaks for the rivers?](#), 2018

⁹⁷Caritas, Parihaka Y1-13, School Resource.

⁹⁸Daly and Kenny, [Nelson Mandela's New Zealand legacy](#), 2013

How does a society, the NZ Statistics Dept count let alone measure that data, measure our contribution to Aotearoa as a whole?

Don't take my word for it.

I'm not alone in thinking this. There seems to be a growing will, internationally and nationally for new and different voices to be heard, new ways to do things. Inclusivity and diversity are the themes of conferences. See the Nethui 2019 conference or the NZ Film Commission's Inclusivity Summit 2019. There is real interest, nationally and internationally, to include Māori, Indigenous and other 'minority' perspectives. See also the World Economic Forum, the I.E.E.E. just to name a few global organisations who recognise the power of digital technology, especially A.I. and M.L. and the need for all voices, perspectives, contributions to mitigate the powerful harm bias will cause.

Before and now, post Covid-19, here in New Zealand and Internationally, there is a feeling that the western/British/European, 'business as usual' model is not working. The individual, profit and mass consumption at all cost, economic growth with no end, right now, as the number one, two, three societal values are not serving everybody nor our beautiful planet. Where is the connection of the individual to anyone, to the planet, to the future? And who are the individuals making all the profit. Look at the Forbes top 100 list. Many women, children, old, infirmed, men of certain ethnicities, people of fluid gender and sexuality, even people who have different ideas, are living in danger, in abject poverty and in the worst social statistics. The planet has been heaving under the weight of our mass consumerism. Only while people have been in Rāhui/Lock Down has the planet shown us just what an impact we have, and thankfully it's indomitable replenishing powers.

There is a fundamental lack of diverse values, thought and voice at the legal, business decision making tables. Māori and other indigenous cultures knew this, knew how to look after the whole, knew our place in Nature, kaitiaki, guardians, not for the planet's sake, but because without her there is no survival, without the We there is no survival of the I. This insistent western model has persisted with a tremendous lack of foresight and an almost delusional denial to just keep going, keep doing the same thing, the same way, by the same people.

Covid has shown up what others, like Māori have always known, the above values are at best inequitable, and at worst are destructive. They do not serve nor are representative of the whole. Our New Zealand societal statistics alone, of who owns what, who thrives, who is dying, who is educated, who is in jail, who is committing suicide, who lives on or below the poverty line, confirm that story. It's not good enough to still say it's a level playing field, we are all the same, we are all equal under the law, we all have the same chances, some people are just bad, lazy, uneducated.

So Māori want to say, we are still very much here, after nearly losing everything. We have been through many iterations, adapted, are adapting still, and because we have our eyes on the past, we know how to deal with our future. We know it is who we are and what we do today, that will take us there.

The IEEE and the World Economic Forum are two examples of International organisations that are interested in engaging with Indigenous people specifically, as national and corporate AI strategies are being created and implemented. In fact John Havens, the E.D. of I.E.E.E. said to me that whenever he talks to others about my project and any that include Indigenous knowledge, they "lean in, as if being offered a clean, cool glass of water, it's something they know they instinctively need and want."⁹⁹

Again I reiterate, Te Tiriti o Waitangi is not an either/or, 'My Way' or the highway approach. It was an And/And offer. Know our way, try our way and see what new values, fresh eyes can bring to the table, can add to the accepted mainstream values and ways. See also what new systems, innovations, society, future can be created.

⁹⁹ Interview, John Havens, Executive Director, I.E.E.E., Oct 2019

It's not new

It is not a new idea that a Te Āo Māori, Māori perspective be incorporated into New Zealand society. Māori have always participated and agitated for authentic expression throughout these 180 years of colonial rule through the Pākehā version of the Treaty of Waitangi 1840, through war, through seeking to be part of the political system,¹⁰⁰ then by Statute and Common Law,¹⁰¹ and decision-making and Institutional practices,¹⁰² and of course, throughout Aotearoa, New Zealand's protest history.

We already have some Māori ethical frameworks in various aspects of NZ's society, for example Mason Durie's Te Whare Tapa Wha¹⁰³, Rose Pere's, Te Wheke,¹⁰⁴ both health and well-being models, Te Ara Tika¹⁰⁵, and Rangahau,¹⁰⁶ a Māori ethics committee relating to research and researchers. Hirini Moko Mead has developed a framework using Tikanga Maori and Matauranga Maori to assess contentious issues to find a Maori position on these issues¹⁰⁷. There is great work by He Whetu Mārama in the Environmental Protection Agency, The 5 Safes Framework and He Arotahi Tatauranga, in the Statistics department. We now have Te Mana Raraunga who have established a Māori view of Data and Data Sovereignty.¹⁰⁸ The Ministry of Social Development has PHRAE, under the a "Privacy, Human Rights and Ethics" Framework, another tool to aid the use of Data. It is good but lacks a Māori perspective.

And, just today, as I am writing, I see in Linked In, He Ara Waiora, The Treasury Māori Decision-making Framework is launched, 25 Feb.2020.

And there is GOOD NEWS, Māori Tech business is on the rise,¹⁰⁹ with start-ups, like Āhau, Piki Tech, to Māori corporations like Tuaropaki who have been just getting on with technology for decades, or iwi like Ngati Whātua, using digital technology so positively. They have "developed what they've called the "Iwi Algorithm". This aims to embed New Zealand's unique cultural values at the heart of AI decision making.¹¹⁰

So what am I doing? I am just continuing this conversation into another realm, that of emerging disruptive technology(EDTs). I don't want our tikanga to fall into the trap of being siloed, compartmentalised, or stuck in policy that never gets applied. I want to see if I can develop a draft set of guiding tikanga that can then be adapted to different iwi, hapū, organisations, Governments, Nations, and different aspects of digital technology.

I explain in my Stakeholder and Barriers section that being able to connect with Āhau and Ngati Hine has been difficult. As with many Māori, if you are doing one thing you are doing a million things, everyone wants you and often to work for nothing. And my hapū is, as other iwi and hapū are involved in Treaty claims. That is a very taxing responsibility. So another reason I have wanted to come up with a set of guiding tikanga, a platform, for a Government, or organisation or business in the area of EDTs is to help that issue. If there are some broad tikanga that can be easily adapted and are easily available and understandable to Māori or non-Māori, it could save having to draw on the same individuals, because of their knowledge and skills, on a one-on-one basis, who may be overstretched and underpaid. We need to

¹⁰⁰ Resulting in the Māori representation Act 1867

¹⁰¹ The Treaty of Waitangi Act 1975, The State Owned Enterprises Cases 1980's, Te Ture Whenua Māori Act 1993, The recent Te Awa Tupua Act 2017, just to name a very few.

¹⁰² The development of restorative justice and youth courts based on marae justice systems, karakia, prayer before all number of events by the local hapū, to how a tupapaku, dead body, is treated in hospitals, to how our natural resources are treated etc.

¹⁰³ Ministry of Health, [Māori health models – Te Whare Tapa Whā](#)

¹⁰⁴ Hauora, Health Forum, [Te Wheke: Rose Pere – Health Promotion Forum of New Zealand](#)

¹⁰⁵ National Ethics Advisory Committee (NEAC), [Te Ara Tika](#)

¹⁰⁶ Smith and Cram, <http://www.rangahau.co.nz/ethics/166/>, 2001

¹⁰⁷ Mead H, [Tikanga Maori Model](#), 2003

¹⁰⁸ Te Mana Raraunga, [Our Charter](#)

¹⁰⁹ Armstrong A, [The rise and rise of Māori tech businesses](#), 2018

¹¹⁰ Sharman A, [Culturally diverse AI could enrich children's learning](#), 2019,

seed and grow this capability but in the meantime ensure that Te Ao Māori is known, understood and part of every policy, business, organisation

Barriers

There has been a big barrier in this Master's, the fact this is so meaningful to me. It's no small feat to be part of restoring the mana, the dignity of my mother, my grandmother, a whole people, and if I get it wrong or don't do it right, I may miss the only opportunity I have.

When you speak of writing a draft tikanga to adapt to another cultural or professional context, it sounds so easy, but the reality of 'putting it out there' is another emotional issue, not just to me but to many Māori. I have talked about it with some of them. The worry of getting the tikanga wrong, of not understanding it, of missing something vital. The fear of being rejected or condemned by my own. Or the worry of seeing where some Māori ways may not work, could be wrong, is very real. I have such a need and desire to protect something that has already been so derided, forced into submission, or lost. I feel protective about it, to not put it out there. I recognise that. As my advisor pointed out, 'If it's in my head it can't be wrong'. And another advisor said, 'Science is Conjecture and Refutation. Whatever I say has to be held up for interrogation, for refutation, for scrutiny.' And I ask but who will judge? Whose ideals, knowledge, values, perspective? Will they have the qualifications to even know and understand what I am talking about? Plus, there is no one set of tikanga. I didn't want to offend other iwi. There is not one Māori perspective; I didn't want to seem like I was talking on behalf of all, or many, or even anyone else.

Knowing tikanga is one thing, putting it on paper is far more dangerous, as I pin my colours to the mast, as some say. Some of how I felt was validated when I read Pā Māori Marsden writings. As I said earlier, his writings are my text-book for the tikanga I use. He too was careful to acknowledge tikanga from other iwi. But about tikanga he said, "tikanga, taonga, principles or values were alive. They moved, adapted, shifted into needed space, season, experience, and was used with wisdom and caution depending on the audience. But once written, they became at best limited, clunky or useless, or at worst, dead. The clever, adaptable, fluid wairua, the vast spirit of the meaning was lost to the captured then imprisoned, literal word."¹¹¹

I have been emboldened by the new thinking of 'Fail Fast', of being open and transparent to learn and test quickly, what may work or not under the swift pace of lean or agile thinking and design, which encourages a faster pace due to the nature and pace of technology.

Another concern was that tikanga would be misappropriated, misunderstood, diluted, trivialised, used by non-Māori, for the many agendas people have. I acknowledge the majority of those I have interviewed who have good and genuine intentions.

My last barrier was my own feelings regarding the tone of my message. I speak further on about a WEF representative saying anger will not get the message across, and my own response of anger that we have been peaceful and law abiding in our protests, with Ihu Mātao being one the more recent large examples but there has been Parihaka, Bastion Point, The Foreshore and Seabed, all the environmental protests, and the one a week or two ago, in South Auckland against the arming of police in South Auckland, where 30 attended, compared with the Black Lives Matter in town this weekend. When will the systems change? The sorrow turns to anger, anger turns to rage if the same things keep being done by the same people. Having wrestled with my own conscience I have chosen the way of my own tupuna to use my wit. This Master's is my protest. I want to be a bridge builder, to be peaceful and as inclusive and empathetic as I can, leaving other types of protest to others.

¹¹¹ Marsden, M p47, "The Woven Universe

Stakeholders

I had chosen 4 groups as stakeholders to test the draft Tikanga Principles on.

WHO	WHY
Āhau/Ngati Hine	Āhau are a Māori platform/service and my hapū, Ngati Hine is the user - perfect for looking at Tikanga Māori. Āhau want a Tikanga Charter specifically for their Āhau business
Telluriq	A Pākehā business who would like to see how a Māori perspective could be introduced and/or applied to their business
Centrapay	Are not as happy with the idea of 'Guidelines' but are interested in what I am doing
World Economic Forum, Dept of Internal Affairs, The Institute of Electrical and Electronic Engineers	As part of a working group for a National AI Strategy workshop, WEF in particular are very keen to see a Māori perspective in an AI space. I.E.E.E. are interested for the same reasons as WEF.

But they changed as a result of Covid and other circumstances. My Master's is to include non-Māori Corporates, Government and organisations, explained further on under Phase 1 to Master's completion.

The next section introduces Tikanga Māori, Māori methods and values that provide the content for the Tikanga Matatika, Framework.

TIKANGA

Māori Marsden says, "Tikanga means method, plan, reason, custom, the right way of doing things."¹¹² It is the 'Know Why arm of the Know How. He also said that without values an individual has no centre, they will follow any current trend, any prevailing wind. Values or know why give you direction and process.

¹¹² Māori Marsden, p66, "The Woven Universe

Right, is, in terms of what hapū and iwi deem right and appropriate. I want to say here that we don't have all the answers either, we have only another point of view. In my conclusion, I mention the tacit knowledge we all have, the knowledge we don't know we have or don't know why something seems 'right' to us. We've all got our 'rights' and 'of courses', our common sense'.

Sadly and unsurprisingly a Te Āo Māori view is hardly known to many New Zealanders, let alone, the world. It is from other perspectives that we can get that shard of new, that oh!! That is true innovation.

At first glance Tikanga Māori worldview and values frameworks all seem to use similar or the same concepts of whakapapa, tapu, kotahitanga etc. I mention that in *It's Not New*. But on the face of it, in this context of EDTs, whakapapa, connection, kaitiakitanga, guardianship/sustainability, futureproofing, kotahitanga, collaboration seem totally aligned with the new values of this emerging digital era of collaborative, participatory design, appreciative inquiry, open-source information, transparency, inclusion, diversity, decentralising power, gaining more autonomy, sustainability.

Whakapapa/Whanaungatanga - Belonging, connection

Pā Māori Marsden says, values may be divided into three categories, primacy of values in descending order is accorded respectively to the spiritual, psychological and biological.¹¹³ Māori know who they are by where and to whom they belong, present, past and future.

Through genealogical relationships we are related to the spiritual world, our gods, IO the first cause, people, places, eg a mountain, a river, now also recognised in New Zealand law¹¹⁴, we are related to and from things, and also through action. We whakapapa to knowledge, ideas, purpose.

I recently had conversations with other Māori about why Pākehā, western science, business, Government either don't know, or are just coming to the idea that we may be connected to the planet, that our actions have direct impacts on the world around us, that our future needs protecting, that we can work collaboratively, that collective knowledge makes us more intelligent, and so on. One mate, a professor at Law said this: 'Western Culture/Science has almost prized this notion that I came into this world alone, I will die alone, as if they were born to no-one, belonged no-where and were going no-where, therefore everything is new to them each generation. The knowledge they gather is the knowledge they gather in their lifetime, not realising there is a corpus of knowledge available to them through the wisdom of the ages and to them specifically. That is, they think they are inventing, when they are really re-inventing what's always been there. But of course, innovation means, we can make it work in the time and context we find ourselves in. Just a thought.

Marsden said regarding whakapapa, whanaungatanga, "*The greatest ETHICAL ACTION... then is the FOSTERING of relationships/whānaungatanga*"¹¹⁵

Below is HOW we foster those relationships.

Aroha, Manaakitanga, Taūtutu - Love, empathy, welcome, respect, nurture and reciprocity are core values inherent in all tikanga¹¹⁶.

Rangatiratanga -

Within the WHOLE Is respect for the INDIVIDUAL, for the 'expression of the authentic self'¹¹⁷, for autonomy, for self-determination. All are autonomous unless it adversely affects the whole. Part of this is

¹¹³ Māori Marsden, p39, "The Woven Universe

¹¹⁴ Te Awa Tupua Settlement

¹¹⁵ The words of Te Ahukaramū Royal, editor "The woven Universe", pxiv.

¹¹⁶ <http://www.rangahau.co.nz/ethics/166/>, smith and cram 2001

¹¹⁷ Māori Marsden, p1 "The Woven Universe."

Wairuatanga - Recognising the essence, the spirit of who you are, who you are with, where you are, what you are doing.

Mauri - Hau - Kotahitanga

Are the concepts/elements/the processes that bind all the diverse elements to create unity.

Tika, Pono, Mana

What we do and how we do it is needed, respectful, right and that we have the power and the authority to do so.

Tapu/Noa

are elements of this. It is to know the significance of something and act accordingly, whether it is your culture or someone else's.

Tohungatanga

Having the expertise, competency and the authority

Kaitiakitanga

Because we are connected, related to all people, places and things we DO NOT OWN as a right. We TEND, CARE FOR, PROTECT including the past, the present and future.

Kanohi ki te Kanohi

The personal is important, eye to eye, face to face.

A well-known whakatauki, Māori adage is, "He aha te mea nui i te ao, he tangata, he tangata, he tangata."

What is the most important thing in the world, it is people, it is people, it is people.

To speak of a world of digital technology, artificial intelligence, robots, one one may think what do humans have to do with it? Well, these are merely tools created by humans, therefore humanity still lies at the heart of it, as the creators, the maintainers, the users, the beneficiaries. The translation of 'People' in Māori includes the relationships we have with nature, with animals, the stars, the tools we create, essentially all of life. There is no separation. Ensuring human and environment-flourishing comes first is vital. It's about a common-wealth/well-being.

Profit margins, economic gain happens as a result of putting well-being first, not the other way around. I think the crises in the world, environmental, economic, social, is evidence enough.

Translating Tikanga Māori into the world of EDTs?

Since I wrote this, Karaitiana has put out, "Treaty of Waitangi/Te Tiriti and Māori Ethics Guidelines for: AI, Algorithms, Data and IOT." It is mainly a literature review of what other Māori are doing in the digital technology space, but he also extrapolates terminology, technical and Māori, and relates what is appropriate tikanga to technology, what are important considerations.

In the process of my research, I received feedback from Pākehā and non-Māori, from many occupations that they wanted to learn more but didn't know how to engage with Māori, or what and how do Māori concepts actually relate to business, organisation, Department?

It was this one common question that led to me to realise it's not just a Tikanga Framework that is needed. As I said above there are already many tikanga guidelines. What was needed was a Tikanga Framework that could be interpreted uniquely to individual businesses or organisations and their specific contexts, a draft tikanga that could actually be relevant and practically applied. Equally as important is the process.

As Māori Marsden says, Tikanga is about method and process imbued with values. This will not be a one size fits all Tikanga template to be imposed over a business or policy or organisation's framework, rather it is a collaborative tool to be offered as more data into the mix, a different way of looking at a problem, a different way of solutionising, and providing different outcomes that become apparent. I mention Marsden again, talking about Tikanga being alive, not imprisoned. This is the only way a Tikanga Māori framework is tika, right, is if the Tikanga is allowed to move, to work with, be used in actual contexts.

The first 3 Tikanga are the underpinning values, therefore when you think about emerging technologies, specifically in my Master's i have been looking at mitigating bias, you have to look at two of the most important aspects here, there are, Data.

Draft Tikanga in contexts

Whakapapa-whakawhanaungatanga

Te Āo Māori and the world of virtual, augmented realities, algorithms, digital connection, artificial intelligence and blockchain are strangely or surprisingly not a million miles apart from each other. Whenever you google AI or digital technologies the images are quite similar to the way Māori saw our relationships with the unseen world, to the environment, to each other; it's all about connection.

Nilofer, a social media influencer said, as early as 2012, "If the INDUSTRIAL ERA was about building Stuff, the SOCIAL ERA is about connecting things, people, ideas...relationships are more important than ever. Transactional relationships will be disintermediated(reduce or eliminate intermediaries) by technology."¹¹⁸

Belonging-Connection/Connectivity, Flourishing; as said above people, the environment, the spiritual-unseen world are connected. Business even speaks of being part of an ecosystem. Whakapapa is also about connecting to needs, ideas, to knowledge, to consequences, to purpose, to outcomes, to stakeholders. This value should then be your number one guide when making any decision, from what is the purpose, the vision I have for my product, service, what is my connection in that space. For example, I want to start an online ethical framework for businesses, I ask about whakapapa, is my product, service, platform, research, necessary, who else is in that space, is it needed, is it wanted, who am I targeting, will be connected to, who will I need to connect to to make happen, what do I need in terms of technology, where is the technology from, how is it made, can I support the ethics of this or that as I am going to be connected to it, then whakapapa, connections and relationships includes who you employ, where do they come from, what are their values, to what technology to use, to how are you gathering data, to where and how that is stored, who owns it, how it is disseminated, who are your users, clients etc.

Every connection you make immediately carries with it responsibilities. Businesses, Governments need to ask, is what we do or want to do necessary, connected to an actual need that has been validated, is it connected to the values of the organisation, are the outcomes what they want to be connected to. Is the data to be collected, from the questions to the people or things who you are collecting data from, relevant and connected to the purpose. Then continuous reviews of the methods, process, objectives, data is necessary. Without whakapapa there is no legitimacy.

Once you have established the 'right' whakapapa, connections, relationships, below are how you protect, nurture and grow them.

¹¹⁸ Nilofer Merchant, "11 Rules for Creating Social Values in the Social ERA", 2012

Aroha, Manaakitangai and Taūtutu

Empathy, respect, the awareness of reciprocity, that what you do has consequences, impacts others, will govern your decisions.

From what you are creating, whether platform, service, thing, to how you structure your business, implement any policy, strategy, to how to hire and treat staff, clients, your own welfare, to what technology you build, choose to use, and from where you source the products, if it's not nurturing, sustaining, growing your relationships within your company, the environment, your clients etc, think again.

You could ask, for example:

- a) Is your product, service going to foster relationships, connections? I.e. is it needed, will it add to people, (yourself, your team, your users, is it good for the planet - ethically sourced and sustainable services and products and investors?)
- b) Do you, the leaders/owners, your work environment, your employment practices, methods, guidelines foster relationships? I.e. do you foster a sense of belonging at work or siloed isolation, trust or suspicion, inclusive and diverse or same-same, is well-being a key priority or is it quantity outputs and economic gain?

Rangatiratanga.

"The achievement of Authentic being"¹¹⁹, self-autonomy. Being your authentic self is also one of the 21st Century catch cries. Diversity, Innovation, 'thinking outside the box', unique thinking, personality, has been what has created the phenomena of emerging, disruptive technology. It is the ultimate 'User-Individual-Client-centric' value.

Traditional Māori worldview saw life like that too. Everyone, everything has a unique essence built in, their wairua, mauri. They have their place, have their own contribution to make in the whole organism of life. It recognises, respects and treats that uniqueness with dignity.

Authentic self sounds almost contrary to holistic, to 'all for one'.

The important lesson here is in providing an environment, work-culture, product, service, nation that recognises, celebrates individuality, the freedom of 'authentic' expression whilst never losing sight of the whole and where the whole is going, what the whole is doing, is key to integrity, to dignity. Autonomy, authentic selves pre-disposes itself to self responsibility and the sense of responsibility to the whole, rather than rights. Whether in a society, coming to work, going to school, difference as well as same, will bring flourishing energy and enthusiasm, new ideas, happier and more interesting society and business.

When facing big challenges, for example AI Bias, recognising Rangatiratanga becomes crucial. BIAS can be fatal. Diversity, respect, empathy, inclusion becomes key in mitigating bias¹²⁰. You need diversity in the creators and developers, in any law-policy makers, all decision-makers, implementers, in data gatherers, researchers, from whom you gather data, the analysts, to the users of the data. This is especially important with predictive data-sets, like COMPAS, a tool predicting re-offending and found it predicted more non-white people were more likely to reoffend than their white counterparts¹²¹. This was due to an almost homogenous set of data gatherers and data subjects, resulting in deficient data sets. Or facial recognition tools that only recognise one set of people.¹²²

Governments and Organisations, like the World Economic Forum, or the I.E.E.E. are also recognising the need for diverse views, backgrounds and experiences in their digital strategies. Māori would say here though, strategise as a whole Government and Nation, not piecemeal, in the old 'each institution working in a silo way' to create different strategies. I saw this exact phenomena at the NetHui conference.

¹¹⁹ Māori Marsden, xiv, "The Woven Universe." from a paper he wrote called, "Māori Health - A Case for Reform.

¹²⁰ Snow J, "[We're in a diversity crisis](#)": cofounder of Black in AI on what's poisoning algorithms in our lives, feb 2018

¹²¹ [Machine learning and bias](#) Jan 2019

¹²² Lohr, S [Facial Recognition Is Accurate, if You're a White Guy](#), 2018

The digital technological revolution is so great we need to be united. They need to work in an open and transparent forum to include as many perspectives, culture, thought, ways of doing things, in an inclusive, cohesive way. Where they have some people standing back to see the whole picture, who communicate with those who are working close up, so they look at causes and effects, not symptoms, to come up with long lasting, meaningful, adaptable, scalable solutions.

Creating a business, a nation, an organisation that promotes the inclusion of diverse citizens, stakeholders, users, could create the innovation it is needing, create the laws, regs, ethics, trust and adoption that is key for a success. It is starting to be recognised as bringing in an economic return.

Ultimately, at the level of decision making, the protection of the individual usually has the proviso that unless to do so would harm the whole. It's about responsibilities and rights.

4 - 7 are how you go about following the values of maintaining and growing relationships.

Mauri, Hau, to produce Kotahitanga

This describes the mechanism, the system of the device that operates the diversity and unity in the whole. It can easily translate to the digital world of satellites, algorithms, networks, servers, platforms, devices, all the things that connect us up. It could also be seen as the code, the algorithms, the technology, the data you are collecting, analysing, storing, or the culture you are creating in your work environment, or the policies, the strategies, the systems of decision-making in a company or a country that seek to empower diversity in unity. Silos, forced homogeneity, pitting one against another. Fearing difference is legacy thinking from an era that never belonged in Aotearoa, and doesn't belong in the world today.

Tika, Pono, Mana

I have the power and authority to do whatever it is that I'm doing. Are you acting inline with your employment expectations? What happens if someone acts outside their work brief, or people who have the power have done something and lost the respect, therefore the authority to be in that position. You have to go back to the initial whakapapa, whanaungatanga guidelines of sustaining, nurturing, growing connections, relationships.

Kaitiakitanga

This concept is crucial in today's climate, pardon the pun. To know "we" are responsible, for caring, guarding, protecting, nurturing is the opposite of the "I" that must own, that amasses, accumulates, consumes no matter the cost; it is the antidote for the environmental issues and will have social and economic benefits. That perspective of being a guardian is like being part of a relay team, I am responsible for the baton I have been handed. For me this means I am responsible for my health, my body, my personal choices, like this Masters, to shed light on the baton of knowledge and experience that has been passed on to me, I am responsible for doing by best, running and finishing the race, to hand the baton on, in tact, to the next baton bearer who will have their race to run, and so on, and so forth. We, Māori, know that TIME contains more than just NOW. We will face our past and future and all we need to say is we tried our very best to take care of the time and place we found ourselves in, from our own personal choices to those as a hapū, iwi, community, nation, world. This is an incredibly helpful tool when making decisions that will have short-term and long-term consequences.

Kanohi ki te Kanohi

Face to face is an interesting concept in a digital world. Remote connection has become really important during Covid, but there were still issues to be discussed that people decided an actual face to face was better, because of the energy remote learning lacks. Another area where this will be interesting is with virtual assistants as a service provider, like Mia from Soul Machines, home robotics, or Virtual and Augmented Reality teachers, marae, worlds, virtual businesses. It will be important for organisations, businesses, governments will need to know when this principle is more important than technology, or how to develop the technology with this in mind.

We've had swings and roundabouts with digital technology and this value of face to face. Kanohi ki te kanohi is a value reminding us that everyone and everything has an essence that is to be respected, whether you like them or agree, respect is key. Face to face makes it harder to say and do things than if you are anonymous.

On the one hand social media platforms connect us to more people, businesses, ideas, knowledge. We can leave comments and reviews, post 'news', 'facts'. Face to Face in a business sense has led to platforms using technology to be more direct and cut out the middleman. It has created a more customer to product/ service, like Amazon's online direct purchasing, or Uber and Air BnB allowing for you to become the business or service. You could say the peer to peer, B2B have encouraged rangatiratanga, more self autonomy. It may even lead to the cutting out of the social policy analyst and the politician as law makers as we see legal systems change to keep up with regulating digital technology, to form a citizen to citizen nation. That's another story.

We can be connected in ways we never have been, challenging and changing traditions. For example, Māori have pretty clear traditions and protocol around Tangi, dying, death and funerals. A few years ago a family member living abroad asked if she could be skyped in for the tangi of a loved one. There was controversy about that, about showing the dead person in that way. It is becoming a more acceptable norm of communication.

On the other hand we have anonymous digital technology. For security and business IP we have unexplainable, or untraceable aspects of it like who and what is behind and in algorithms, artificial intelligence, and most importantly WHO is responsible? We have virtual worlds, even plain social media, where trolls hide in anonymity. There is remote cyber hacking, remote hostage takers, the fake news makers, or the data miners

It has and can cause real harm like bias in predicting machines keeping people out of wealth, homes, healthcare, causing suicide, and mental illness. Face to face can enhance humanity, empathy, where 'behind people's back', is for the cowardly.

Kanohi ki te kanohi, face to face, needs to be adopted as a policy in new technology to recognise the inherent value that any communication has a sender and a receiver, and someone is accountable. With digital technology, trust is still key. To know there is an actual someone you can contact when things go wrong has never stopped being very important.

The above was written before Covid. (BC) But remote digital connecting platforms like Messenger and Zoom certainly came out as one of the heroes in Covid. People who were new to, or even against these platforms, certainly became quick adopters. That need to connect was so important during isolation.

See also Appendix 8 for a part of my contribution to the World Economic Forum's NZ AI strategy whitepaper.

Comparing TIKANGA MĀORI with 5 big Business Values

Below are some known, global companies to compare some of their core whys and values with Tikanga. Unsurprisingly there are similarities.

COMPANY	PURPOSE/Hei Aha/YOUR WHY	VALUES	TIKANGA
MICROSOFT		trustworthy computing, diversity and inclusion, corporate social responsibility, and environment	Rangatiratanga, Kaitiakitanga, Whakapapa
SQUARE SPACE	Giving voice to your ideas	Empower individuals Be your own customer	Whakamana, Wairuatanga
HAGGERTY	To protect physical connections to moments	Collaborating, Respectful	Whakapapa/Whanaungatanga Kotahitanga, Whakamana
APPLE	Bring best user experience through innovative hardware, software, and services	Improve lives of people, Empower of public, top quality products	Aroha, Manākitanga, Whakamana
FACEBOOK	Give people the power to share and make the world more open and connected	Be bold, focus on being open; and build social value impact; move fast;	Whakapapa/Whanaungatanga

Testing the Draft Tikanga Matatika/ Tikanga Framework

I learned in my Tech Future's Lab Presentation, April, 2020 on a Māori Lens on a post Covid-19 world, that before I can talk about tikanga some pre-education is actually necessary. This was not a testing of the Tikanga Matatika situation but it did help me refine it further. I had feared overwhelming people with too much information and may leave them feeling like a Matatika, Framework was a rigid template that I was imposing, rather than another decision making tool to give new insights. So I pared the draft tikanga right back. It was even leaner than below in the spirit of tikanga being alive and a collaborative tool, rather than a spoon feeding exercise. The feedback from Linda Sturgess from the BNZ was that 'loose is good but you do need some structure, some signposts along the way, a bare boned framework, otherwise too much collaboration with no real guide could lead to people getting lost.'

Fig 4. The Draft Tikanga barely tested before COVID-19 was this:

4 Tikanga Māori Concepts

Whakapapa - Whanaungatanga - Our connection to people and the planet - past, present, future, means we take the **LONG VIEW** in our decisions. **SUSTAINABILITY** in all aspects of life is **KEY +**

Rangatiratanga - Kotahitanga - Create **UNITY** whilst respecting the **DIVERSITY**, the uniqueness of the Individual, skill, role **+**

Kaitiakitanga - Manaakitanga - We have collective and individual **RESPONSIBILITIES** to protect, **NURTURE, GROW,, =**

MANA - Power and Authority - the **GREENLIGHT** to **ACT**

The action plan. **V.I.V.A.**

Values - Tikanga means values - What are yours?

Inventory - What is the impact of who you are as a person and professionally, and your business?

Vision - What is your Vision is it sustainable

Action - Values + Vision drive 'right' Action

The testing for Proof of Concept became a bare Proof of Concept, an aspiration during and post Covid-19. I used semi and structured interviews with people in those businesses instead and I included more individuals who represented different sectors (see appendix 10 for interview structure/ questions). The Framework has basic tikanga. The process of understanding, interpretation is an organic mix of me teaching the tikanga concepts and the recipients sharing what that means to them personally and in their actual profession. This is tikanga's method, living instruction. They work better when a person or business has an actual issue or purpose to achieve as opposed to a dry and abstract explanation.

For Māori with tikanga, it offered them insight into a Pākehā mindset and the problems they find around practically translating tikanga Māori into their business, department etc. It is one thing to have a literal translation of Māori concepts and another to have a practical translation, based on real life scenarios, to give more information, a different perspective on the scenario, to aid decision-making, the unintended outcomes without the tikanga, and then how to act on the tikanga if chosen.

It enlightened some Māori to understand why Māori concepts are not followed or engaged with, reminding us to be 'user' centric, respecting their, that is non-Māori, rangatiratanga, i.e. their unique and diverse place, role and that means speaking to your users in a way that they will understand.

Personally, and I found other Māori felt similarly, I found this rangatiratanga, autonomous, 'user-centric' principle, difficult to swallow in this context. Some feel, and I have agreed at times, that there has been a lot of one-way traffic over the cultural bridge, as Andrew Little talked about in his Waitangi Day speech. Māori ask, why do NZ Pākehā not know these things by now, why is there this need to talk to them at their level and create safe spaces for them when Māori were never given that 'safe' space to adapt to their new world and Pākehā life is still mainly lived on their grounds. For example, the WEF, DIA and Māori AI working group were, without question, all asked to travel to Wellington, to an office, and have a 'quick' pōwhiri because time was of the essence. That is Māori having to come all the way across a bridge. When it was asked for the next hui to be at a Mārae, there was so much to-ing and fro-ing, and in the end

it was abandoned as too hard and too costly, though we, the non-Wellington-based Māori, were asked to take that time and cost as a valuable opportunity for us.

I have interviewed a couple of Māori with little or no tikanga knowledge, and their insights from my practising the framework were completely unexpected for me. It gave them two-way insight and language to articulate how they feel but have not had the confidence to ask Māori 'experts' about their Pākehā organisations, and not understood about the Institution or organisation itself. A brilliant quote came from Kathy H, working at a tertiary institution, She is Māori but unconfident about her tikanga. She said having looked at my developing tikanga framework, *"Oh, now I know I am validated in how I felt about X. (a certain situation that was playing out) Your framework has given me a language to articulate how I feel and now I understand their (the organisation involved) perspective."*¹²³ As she didn't have a strong connection with her own tikanga she felt too shy to ask the the organisation's runanga, Māori arm of the organisation for what process they have, if any, to deal with cultural complaints. It also gave her an insight into the root of the problem, Pākehā organisations have their own mindset and values, whether articulated or not, as she does.

This organisation is another example of an Institution having policy about abiding by or honouring the Treaty principles of partnership, but this Dept has had a complete failure to know practically what that means and how to implement them. The problem may not be that they have a different mindset and values base, but the Treaty principles are not understood, communicated or implemented from the 'top' to all departments. A solution may be to have something like my framework to begin conversation of HOW they might bridge the gap between policy and practical implementation for all; employees, contractors, students, the whole of university life.

I believe any NZ organisation, especially Government, who acknowledges Te Tiriti o Waitangi in their Constitution must show what those principles are, how it implements them, what is the Vision and the outcomes for that policy and how do they measure success? Do they have a cultural auditing process?

What of businesses? ¹²⁴ Most businesses are in the 'private' sphere therefore not entirely controlled by the same policies as the Government and their agencies and institutions. In New Zealand, Te Tiriti or The Treaty of Waitangi is only enforceable if what the business/organisation is doing is governed by a law requiring Te Tiriti, and /or its 'principles' to be 'considered'.

But, as above, for Governments, there is a strong economic case being made that the old order of Business as Usual is not working, the old economic model is not fit for purpose.¹²⁵ Kate Raworth spoke to New Zealand last year and credited Māori and other Indigenous world views as playing a big part in informing her Doughnut theory.¹²⁶

Māori have been lobbying the Government for years that the economic model is destructive and a Māori economic model should be considered. This is never just for the good of Māori but for the good of all. As late as April this year, Te Taumata, a Māori economic, Governmental advisory body, made up of Māori from different sectors and iwi, boldly set out why, what that was and how to implement it.¹²⁷ The Budget that was announced had listened to some of it's recommendations but not nearly as much as Te Taumata felt was necessary. I believe there needs to be more than an either/or.

¹²³ See Appendix 10 Kath Heraud p98

¹²⁴ <https://www.weforum.org/agenda/2019/04/business-case-for-diversity-in-the-workplace/>

¹²⁵ See Kate Raworths, Doughnut economics.

¹²⁶ <http://www.writersfestival.co.nz/look-and-listen/videos/Page1/doughnut-economics-kate-raworth-2019/>

¹²⁷ <http://createsend.com/t/t-42894E4486D968732540EF23F30FEDED>, April 2020

Phase 1 - Phase 2



I ended Phase 1 saying the how and why tikanga Māori or Te Āo Māori is necessary, can be a useful lens, and an aid in decision making and insights for business, organisations, a nation, in this EDT space and that it is all theory until tested. The next phase was to be testing and more testing. Below was who and what I was going to test.

WHO	WHAT/HOW I will test	WHY that Method
Māori Tech Business/ a Hapū	The Tikanga Framework will be developed and tested in our collaboration process, through karakia, hui, governed by our shared and different tikanga of aroha, wairuatanga, whakapapa, whanaungatanga, whakamanatanga, kotahitanga	Because we all have our own tikanga it is tika, pono, to be respectful of the mana of each party.
Non-Māori disaster-relief tech company	2 x GAMES One that the Ministry of Education called Te Kete Ipurangi, it's a Tikanga game for children to adapt for Telluriq and the other groups. "4 corners" is another game.	I think as Participatory design and gaming is part of their kaupapa, it is right to try some Games
Non-Māori business in on-line payment systems	Te Kete Ipurangi	CEO is not keen on 'Guidelines' or other 'checkbox' 'suggestions'. A teaching game of tikanga can lighten the process, could also stop it being just cognitive, to

		include the physical and instinct
WEF, DIA, Dept of Internal Affairs.	Relay information in a more formal way, like a presentation, Q n A but also Te Kete Ipurangi	As these people are more 'institutionalised' I'm starting with information but will include the game, for the reasons above

Methodology

In all my communications with people I am governed by these tikanga:

Rangatiratanga - Kaitiakitanga: People are autonomous over their knowledge and therefore have the right to tell me what is an appropriate way to treat their data, as I am a guardian of the knowledge. Once permission and understanding is given then I have rangatiratanga over my work.

Tika-Pono-Mana - I have tried to do things the right way in terms of my own tikanga expectations thereby maintaining the mana of everyone involved.

Manaakitanga - Respect, empathy, generosity, safety is how I hope to have treated people and situations.

Tuakana - Teina - Tauira - Taūtūtu. I found I had to adopt these four principles as a strategy at times. In Māori the tuakana-teina principle is that if you have knowledge, are older, have something to teach, it is your responsibility to share what you have with those coming up after you. Tauira is the principle of being an example and the student, and Tāuutu is reminding me it's a two way street. I'm there to teach and to learn. This is a strategy as well as method and process, which I had to adopt at times, as I realised people don't like the discomfort of not knowing things, but felt better if they were there to help you also. It protected me from others, but also protected others from me!

Interestingly the notion of tikanga Māori, even the broad notion of values in general, have brought up some real emotion. I have had some conversations where people felt the general idea of introducing 'values' into their business made them feel awkward. There was a feeling that they would be seen as 'imposing' values on their staff. The topic could get heated but I found tikanga, passed down from my whanau, hapū, iwi was really useful in containing these conversations, and, I hope, have developed good learning opportunities for those of us who participated.

Findings

The concept of the Tikanga Matatika was to offer a new lens, a Māori lens to inform and collaborate with non-Māori in Aotearoa, New Zealand, especially in digital technology innovation. This was to help mitigate against bias.

The simple finding is that Māori, Pākehā, non-Māori, are not ready for a Tikanga Matatika, framework. It is too many steps ahead. Algorithmic Bias is the tip of the iceberg. The iceberg itself, the real issue is that there is still a deep and historic chasm between Māori and European Pākehā in Aotearoa.

In general Māori do not trust to share their knowledge with Pākehā and non-Māori. Pākehā and non-Māori, while recognising they should with Māori and our values, worldview, feel nervous and awkward about that relationship. They recognise they don't know as much as they could or should about Te Ao Māori and Te Tiriti o Waitangi, and therefore the thought of actually adopting Tikanga Māori, Māori values makes them uncomfortable.

The simple answer is this, before a Tikanga Matatika, there first needs to be honest and open conversations about this elephant in the room, this faultline that lies beneath Aotearoa, New Zealand society, the broken relationship between Māori and European Pākehā first then the non-Māori living in Aotearoa, New Zealand. We need a Tikanga Matatika Korero, a framework to govern those conversations. Te Tiriti o Waitangi is not understood. How can it be, it's not taught from pre-school, primary-university as a compulsory topic, even though it was, and could be still our template for the partnership between Māori and European Pākehā going forward.

This section below is a discussion of that process, important because in discussing the difficulties it uprooted the real issue.

Māori Rōpu/WEF/DIA

The WEF/DIA/Māori working group was disbanded for two reasons. Firstly, there was an incredulous lack of foresight and understanding of DIA to value the importance of participating in creating an AI strategy, digital rights, especially in light of what the DIA do, wanting our identity stored digitally.

There were also problems with ground rules for engagement between Māori and WEF and DIA to be established. The where, when and how hui should be held was an issue. The organisers of the hui/workshop never considered having a meeting, for example, in any other place and way, than in Wellington, in an office, with whiteboards, or pens and papers or computers. When a marae hui was suggested, suddenly the budget for that was hard to come by. It exposed their individual, ethno-centric mindsets. The D.I.A couldn't even understand the importance of having a relationship with WEF on this important project, an AI Strategy for New Zealand, let alone with Māori.

The DIA do have a policy clearly spelling out a commitment to the Treaty of Waitangi as to why they need to have a relationship, partnership with Māori, but they fail to understand the value that Māori bring, our knowledge and processes and systems. Nor does there seem to be a clear practical strategy of how to bring that policy into life. A serious commitment to uphold Te Tiriti o Waitangi, that is the level relationship between Maori and the Crown, would have understood the importance of including having a hui in our environment, our way. It exposed their individual, ethno-centric mindsets.

At that level of Government, their lack of will, education, or understanding regarding the value of Māori relationships in practice and the urgency of having digital technology strategies, tells a frightening story. If they had a working understanding of Tikanga, the relationship partnership with Māori, they would have jumped on that opportunity with Māori and WEF, and been part of history making. They lack vision and understanding of the Department's position and their reason to be, which, according to their website is: "Building a safe, prosperous and respected nation." It's unsurprising, but it does make you wonder!

There was meant to be another face to face hui with WEF but Covid hit. It would have been a real opportunity to test the framework and principles internationally.

There hasn't been a lot of contact with WEF but I have still been able to contribute to conversations and material around their whitepaper.

I emailed the Minister Chris Fa'aoi to ask why such an important agency did not commit to the AI Strategy working group. I asked what was NZ's position to an AI strategy, or digital rights given identity is a huge trust, cyber security issues. I got no response except to say due to COVID, unless important you may not have a response. I fear that excuse will be used many times for not communicating. There is though a new Digital Council, a possible Māori digital group, the WEF are making recommendations for other Centres or Bodies. I just fear more of the same systems, centres, bodies, with no teeth, who make recommendations but nothing happens, and the silo effect where the right hand won't know what the left hand is doing will prevail, unless there is shared, open, transparent knowledge.

The second issue was about us as Māori. I deal with that below.

The other Stakeholders

The Māori tech company, the hapū, the 2 non-Maori tech businesses; Covid posed the obvious problem of not being able to test the framework with them, kano ki te kano, face to face. I wondered how it would go on Zoom. Personally I felt more self conscious to test in this way. I think for me, because Tikanga Māori is new to some of the non-Māori participants I wanted to be right there, to really sense or read their reactions. I was nervous of misunderstandings and not properly being able to deal with it on the remote technology. With boxes of faces staring at you, I felt less freedom to be organic with a participatory process and more QnA

As it happened getting people together was hard for them. A lot of people had strange responses in Covid.

As the point of the Framework is to test it out on businesses and organisations together, not as individuals, I had to change tack. In the end I interviewed the co-founders from the companies. What I got out of that, coupled with the DIA experience, was not what I was expecting. This was not just another new design model. There seemed a hint that perhaps people were not ready for a real exploration of Tikanga Māori and their values. Both Pākehā and Māori. I needed to explore this further.

I think the semi-structured interviews and conversations led to a much richer data gathering than if I had embarked straight into testing. People on their own revealed more than they possibly would have had they been in front of their colleagues.

The Māori Tech Business

This developing business is a community management and digital identity platform. The point of working with them was to work with a Māori tech business who were working with Māori, to get their feedback and see if we couldn't develop a tikanga framework specifically for the technology of blockchain and for them as a business. Just as Te Mana Raraunga deal with data, his would be an original Māori perspective on blockchain. For the reasons below the testing and developing of tikanga will be after this research paper is due.

Because of Covid, the co-founder was pulled away to help support and instruct a large iwi on technically getting through. The business development was paused during Covid. But even before Covid, working in a linear way is not often possible with Māori, individuals and organisations. Covid or not, there is a really big Māori dilemma, lack of human resources. If one person is capable and willing to do something in Te Ao Māori, they are often called on to tend to many, many other whanau, hapū, iwi, Māori and Pākehā events, activities, often without or little pay, beyond personal capacity and sustainability.

I hear often how 'difficult it is to engage with Māori.' There are a few reasons for that, but this issue of lack of human resources is definitely one of them. Māori are too busy.

Trust in technology has been slow for many hapū, iwi Māori and communities. 'Fail fast' is not always a wise principle to promote when talking to a people that have paid too greatly for the last major fail fast

project, that being Te Titriti o Waitangi. So the cogs have turned slowly with caution, as kuia and kaumātua, our leaders, take their time to fully understand the opportunities and concerns for the whānau, hapū and iwi, especially when I'm talking about tikanga to take to 'others.' I understand therefore that this collaboration between the Māori tech business, a hapū and myself will take the time it takes, if I want to be led by tikanga.

Covid though has done for technology what it couldn't do for itself, well not in such a quick time, that is to show how essential it is, even just for connecting with whānau. Where there was connectivity and devices, another problem for Māori, it made remote participation possible. Māori were quick to adopt technology like zoom to connect with their whanau, to aid in getting help where help was needed, to understand about how Covid was affecting other iwi and what action they were taking, what was working, what wasn't.

A Hapū

This arm of the hapū, a Forestry Trust, were willing to work with the Māori tech platform and learn more about putting our data onto a digital platform. Necessarily this is treated with caution as our mātauranga is sacred to us and we just don't trust the Government to do right with our data. Working with a Māori digital provider has been more welcomed but as said, with caution.

Just like the tech business, the hapū were already pretty difficult to engage with, for the above reasons, they are really stretched in what they provide for the hapū plus they are in Treaty negotiations, which is a huge drain on all resources, including emotional and spiritual resources. Covid stretched them further. Many workers were doing Covid related things to help contain our rohe, areas, up North from any Covid outbreaks. With many kuia and kaumatua living rurally, hapū and iwi had the fear of the Spanish flu very much in their memories, from losing grandparents. Whānau have been manning patrols, helping the Health Trust get to remote whanau etc with medicines, and pulling together educational resources for kids with poor connectivity or no devices.

This is what my Framework, and later a digital tool, could help with, the ability for it to act like there were Māori in the room, sharing their wisdom and knowledge, until we have that capacity in actual numbers and expertise. This is not to take away jobs that people already have, there is no substitute for kanohi ki te kanohi, face to face mahi/work. It is an aid for the fact that there are so few people to do the work. I haven't yet found out how Māori can financially benefit from our tikanga. My bigger picture was sow the seeds of tikanga, build up people's understanding of Māori with the tikanga, let them see how tikanga can benefit their organisation, get them to start hiring Māori, not just for their skill sets, but for their perspectives, their mātauranga Māori. They will already need this, and need more practitioners.

Disaster-relief Tech Business

This digital tech company wants to help those in natural disaster get the reinsurance they need quickly and effectively. It is one of a few businesses they run. They approached me and were interested in testing a Māori framework of values with them, given they were about ethical business in 'shark infested waters.' They thought there would be alignment, and had worked with Māori before, even though they themselves confessed to being 'pale, stale male.'

The initial conversations led them to realising that all their companies hadn't come together before to openly talk about the initial values of the company. The assumption was they were on the same page without needing to talk about it. This led me to begin conversations with the Parent Company founders, with as many of the different teams as they could gather together, given time differences. That's a coup for Tikanga, just mentioning Māori values led to a conversation about what are the values of their whole company.

I have had two opportunities to work with them. It has been difficult for them to organise as a team given different time frames. I also had quite a few conversations with one of the co-founders. The co-founders meeting led to one of them needing to tell me how much he knew about Māori culture, though he hadn't lived in NZ for most of his adult life, and that though 'I had something 'special, I mustn't get a big head because we are all special.' This weird patronising is not new to me. Resistance was setting in.

As we spoke further the commitment to engage them all, to test my framework, became more difficult. When I drilled down there was a concern that the team would feel he was 'imposing' something on them. He said it wasn't personal to a Māori tikanga, he said he would feel that way about any framework, especially one about values. When I reminded him I was only wanting to test my delivery and the framework itself, to offer it as another way of looking at their business he felt assured. My advisor had suggested I come at it from a 'Learner' position, to reassure them I am learning from them also, so as to keep people from feeling threatened. I could feel the gall rise within me, I'm not always wanting to be humble. This is also the Tuakana-Teina and Taurira-Taūtūtu tikanga, this is the idea in Māori that the one who has knowledge is responsible to teach it by the 'learn by doing' methodology. It's a strategy as well as method and process, to protect me from others, but also to protect others from me, apparently!

Who I am, what I am offering is diversity and inclusion in action, yet when it came down to it, it reveals to me the fear around the reality of inclusion of 'others', new ideas and different ways of doing things, even in the really open of us. This was to come out in different ways over and over.

The other N.Z. Pākehā/non-Māori business uses tech to provide a service that offers better ways for businesses and consumers to engage, connect and pay. The co-founder was really open that guidelines or frameworks for values wouldn't work for him for two reasons. First, they are a hindrance, a barrier to smooth workflow, having to check and recheck these requirements, like tick-boxing exercises that are really fruitless. Secondly, because he felt he had inherent values so could intuitively spot those in others. He too felt there was no real need to explicitly mention values or have a values framework. He operated on a gut sense at all levels, especially with whom he employed.

He felt my Framework could work though with companies who had gotten bigger than say 40. He felt then the founder can lose touch with what everyone is doing. Having clear expectations in the form of say a Framework or Guidelines of what the company stood for, where it was going, who was doing what, was more necessary at that level.

I did ask what he felt the place of Māori was and the Treaty of Waitangi and their principles in a New Zealand company. He was just stumped with that. He literally didn't answer, saying he knew Māori, "I was at school with some. We're all the same."

This led me to think that that was a good question to ask.

Interviews¹²⁸

As I couldn't test this in a group in a kanohi ki te kanohi, face to face way (impacted by Covid-19), it meant I interviewed and talked to people on an individual basis, in iwi and hapū, founders and C.E.Os of tech businesses, policy analysts in government departments. This led to the opportunity to have more personal conversations which revealed a lot more than I think testing in groups would have. Essentially there were just two groups, Māori and Non-Māori, but under that were a few variants. For Māori there were just two groups, Māori in Tech or non-Tech Māori. In these interviews the issue of being iwi affiliated, or disconnected from their iwi didn't seem to matter to them in terms of how they felt about a Tikanga Matatika.

Pasifika - I have differentiated Pasifika from other non-Māori groups as there is a long history, connection with our differing Pasifika whānau.

The non-Māori are broken up into International visitors who do not live in New Zealand, recent immigrants to Aotearoa, non-Māori that have been here for 1+ generation, or european Pākehā whose families have been here for 3+ generations.

Below are just some of the people and contents of those interviews. See appendix 9 for the full list of people and their takeaway points.

¹²⁸ See Appendix 10, p 85 for the list and insights of all my interviewees.

The following headings describe the interview participants of this part of the study

Non-Māori Participants

In the interviews and conversations there is a great deal of will to engage with Māori. There seems to be an understanding that engaging is important.

Pasifika

I have differentiated Pasifika from other non-Māori groups as there is a long history, connection with our differing Pasifika whānau. I do make a point here though, Māori do have a different place here in Aotearoa, being that we are the tangata whenua, this is our only home. Māori and Pasifika are often lumped together as a group, but this is wrong for the aforementioned reason. We have different places here in Aotearoa New Zealand, different values and vision, different problems, different solutions, and different outcomes. Some are of course aligned and we stand together. It is just a point about the place of Māori.

As with all communities, there is not one homogenous voice or opinion. I belong to the Pacific Islands Chapter of the Internet Society, PICISOC. I asked them what they thought of a Tikanga Māori Framework to disperse monoculture in the digital world. The five people I spoke with all had similar beliefs. They felt encouraged that if a Tikanga Framework was accepted into the digital world, maybe their different cultural values would be valued. They felt it was appropriate in Aotearoa New Zealand.

Non-Māori in Aotearoa, New Zealand under 2 years.

I attended different New Zealand conferences, webinars and presentations where many ethnicities were present. At one presentation for women in tech, the presenter, Māori, said really, before we fix the gender problem in Aotearoa, we should be fixing the place of Māori in tech, we should fix the bicultural issue. There were bristles at that with one breakout room member, a new immigrant, saying she felt excluded by that remark. She thought New Zealand was multicultural. Of course when I explained she totally got it. There is no explanation, education about our history and expectations of that cultural relationship for new citizens. One woman said when she arrived she wished there was a marae visit, some education about kaupapa Māori because she was super interested to learn but felt it was not easily available for her as a new person. She said in other countries there is real pride and clarity of their identity where cultural expectations are well prescribed and sometimes imposed.

Non-Māori NZers who have been here 2+ years

One man was keen to incorporate tikanga principles into his business because he was offering a non-tech 'spirit lab' as part of a solution to innovation in a digital world. He saw an alignment of his work and a Te Ao Māori relationship with being 'earthed'. One person in a senior position in a telco business, knew Māori had a place because of the Treaty of Waitangi, because there was a little training in his place of work. He knew Māori 'ideas' should be respected, and had good environmental policies, but didn't really know how that practically worked out as it becomes less 'in your face' in everyday business life. Another person didn't really think about it as it wasn't really anything to do with what they did, or there was a lack of real understanding of the place of Māori compared with all other minorities.

European Pākehā in Aotearoa, 3+ generations

Unless they are totally connected with a Māori whanau, hapū or iwi, there is a general awkwardness about their lack of connection to Māori and Māori culture beyond a 'I went to school with Māori.' Like the non-Māori participants, generally there is a genuine desire to connect but they say, 'we don't know how, or Māori are so hard to engage, or we don't want to offend.' There is a desire for diversity and inclusion but time after time when I suggested testing my framework as a good place to start, there was acknowledgement that it's a good idea, but when pressed for time or dates, nothing eventuated. I

understand it was Covid. People's lives had changed. But when I pressed, because this was not testing in front of others, rather, conversations with individuals were surprisingly open.

There seemed a great deal of awkwardness about the lack of connection Pākehā had with Māori, hapū, iwi. There was a lot of apologising from different people in different organisations, for being 'dumb' or 'ignorant' of things Māori, that they should feel ashamed of themselves for not knowing more. Some were scared to offend by asking 'stupid' questions. One Government worker, when I asked to test my framework with his department, said 'please be kind.' I found this quite extraordinary. The dominant culture who has imposed their values, culture, mindset and language, who has just expected Māori and other non-kiwis to cross that cultural and language divide all the time, no matter how that makes them feel, resist when it's their turn, they don't like being vulnerable, won't do it, want for kindness to be shown where they have offered little and are afraid of everything they themselves have done. Andrew Little on Waitangi Day, in the reo, spoke that it was time for the Pākehā culture to come over the cultural bridge much more often. "The bridge between the Māori world and the Pākehā world is too often one-way traffic, the Prime Minister said earlier this week, with Māori forced into Pākehā paradigms."¹²⁹

As I say, this came from CEO's, Chairs of groups, founders, as well as Government Department workers. The Government departments and Institutes, like Universities, have the English version of Te Tiriti o Waitangi as policies they must respect, but there seems to be no connection between the policy, it's practical daily application and the workers themselves. There is no working 'how to' or measures that they have actually done this successfully.

As much as people want diversity, inclusion and engagement with Māori, and are open to it, it became clear that people just aren't ready for tikanga. Tikanga is a few steps ahead. Tikanga is not something that exists in abstract. They are living values that belong to Māori. I felt there was a fundamental lack of understanding about their, the non-Māori's place in Aotearoa, given to them by Māori through Te Tiriti o Waitangi, and because of that was the lack of the understanding of the real place and value of Māori in Aotearoa.

International Visitors

Not surprisingly people from and living overseas, like the W.E.F. team, or the executive director of I.E.E.E. believe that a Māori worldview, our contribution is essential. The E.D. of I.E.E.E. was the first to say he felt embarrassed at the ignorance he has of the indigenous people of his area, New York. "When I tell anyone about the work being done in NZ, 'well-being' and the holistic worldview of Māori, people lean in, like I offered them the first clean glass of water they've ever had."¹³⁰

There was a general belief that Māori had a lot of status, that we contributed in New Zealand in significant ways, such as our race relations governed by a Treaty enshrined in law and environmentally. They did not know the reality of this. One of the WEF team of the A.I. working group is Congolese-French. He said he understood colonisation, the french colonised the present day Republic of Congo, and that's why he wanted Māori to co-create a strategy. A member from the AI Forum, NZ, said "One of my International interviewees, in the AI space said that that issue, though she understood why, would ultimately halt progress. The world will march on. It felt like a warning to us in Aotearoa.

She wondered if digital technology could be the issue to draw a line in the sand, for Māori and Pākehā. She felt this global lack of real understanding about AI is a great leveler. NZ has no AI strategy yet, Māori opinion is desperately wanted from the international people, like WEF, the IEEE. ¹³¹She wondered if Māori could unite as one important power, while the Government and many others are on the same learning journey, and get on board at this creation and strategising stage of something that will significantly impact our lives.

it is Māori that makes New Zealand unique, otherwise it would be just another European country."

¹²⁹ Stuff Newspaper, [Andrew Little's journey on the bridge to te ao Māori](#), 6 Feb 2020

¹³⁰

¹³¹ Institute of Ethical Electrical Engineers.

They were very open to learn from a Tikanga Framework but, as said, Covid hit and everyone became very busy. The opportunity to do a design QnA with the WEF AI strategy team didn't happen. There is an opportunity with them, with a new 'home' outside the DIA, later on in the year if the borders open. Remote and online is good but there are some things that need to be done kanohi ki te kanohi, face to face.

MĀORI Participants

The basic difference between those in Tech or not, was those that were in Tech were open to the possibilities of digital technology for Māori and understood actual concerns. The non-Tech Māori were more cautious about using and adopting Tech, though after Covid, there was rapid adoption of some tech, as the need for connection outweighed fear, and as they saw the health intelligence used for tracing, aided greatly the safety of their rohe, area.

But generally the themes below came from both groups. I interviewed many Māori from different backgrounds, personally and professionally. A few issues arose.

Firstly, the unavailability of Māori to engage in things. This is two-fold.

- a) Māori resources, human, economic, mental and spiritual, are stretched
- b) Trust, or lack thereof, of non-Māori agencies, departments, businesses and organisations.

a) Māori are very busy, stretched. A lot Maori that do anything feel a tremendous responsibility to give back to their ow or other Māori and are relied on by Pākehā organisations to 'teach'. They end up doing so much more work, yet a lot of it is unpaid. This makes them more difficult to engage with, even their own people. I spoke about that above.

There is a korero about having to put the burden on Māori not just to teach this to non-Māori but be vulnerable to ignorance or unkindness. They believe Pākehā should teach this as Pākehā will talk openly to Pākehā. I see that but my whakaaro, thoughts is Pākehā would still be in control of mātauranga Māori, and getting paid when Māori could. Unless possibly Māori write the programme. I believe Māori should remember the marae-ātea where all discourse happens, even very robust korero, that we can handle what comes, we have so far. It's about the delivery and accepting only some will understand, want to understand and that's ok.

There is still Treaty Settlement fire-fighting happening with certain iwi, like one of mine. We have not settled yet, so we are stretched financially and with resources. The psychology of Treaty Settlement is very deep. Māori are in different stages, even after settlement. It is like grief. Sorrow, anger, rage, despair, surviving, resolve, peace, freedom, thriving. The last four only come if there is true settlement, that being acknowledgement and remorse by the Crown and non-Māori generally, for harm done, and proper restitution.

A few people questioned why I was wanting to put tikanga out there. For one it was simply that she felt there was no point. She works in AI analytics. She said it's too hard to teach non Māori companies our ways, 'they just won't get it.' And if you couldn't prove how it would either save them money or make money it would probably be put to the backburners. Others thought new start-ups are a good place to start and/or younger people in management who may be more open to different people doing things differently. Many thought it would just become a tikanga tick-box, so they can say they are Māori-centred to gain more funding, more interest overseas, tax breaks.

One Māori economist, lobbying a Māori economic model and an advisor to the Government said unless you're agitating at this top end, where the real power is, "there is no point going one business, organisation at a time. It's too slow." I believe there is a place for all people at all levels, top, middle, grass roots, internally, externally. Many said go back home (for Māori that means back to your whanau, hapū, iwi) , concentrate on our own and grow digital awareness and competency.

Protecting IP - A big concern for Māori is 'how do we translate our ways to Pākehā safely, own the product, service, concept, so misappropriation, misunderstanding does not occur and that we receive an actual benefit?' I understand this point. I have wondered when I meet Pākehā 'thinkers' or business consultants, designers who incorporate tikanga into their strategies, earning money from it, now you are taking mātauranga Maori, because a Māori perspective has become popular, and are making money from

it, when do Māori ever get a financial benefit. I know I should be glad tikanga is getting out there, it's what I am trying to do, but could Māori please earn money from it. Could these business consultants leave it to Māori to teach, or incorporate an actual Māori person into their consultancy? Māori IP is very difficult to protect and a real issue.

But the big issue is one that I spoke about in my PH1 conclusion and mentioned above. It has become much clearer in the research and interviews of this phase.

b) TRUST - or MisTrust. No respect-no trust. Simply put Māori have not been respected, therefore why would we trust.

It is part of the Grievance, grieving stages, of the ultimate betrayal by those British representatives of the Queen and successive Governments resulting in the loss of our identity and dignity back in 1840. Anger is another stage. The example of our Māori rōpu, working group with the Dept of Internal Affairs(DIA) and World Economic Forum(WEF), working on NZ's AI Strategy confirms suspicions that Pākehā, especially at the level of Government, are not really willing to give the inch of power, their forebears took and ran with. Is that why Pākehā inherently fear new, they fear others are like them and it will be imposed upon them?

Basically the working group fell apart quite quickly for many reasons as I stated above. The DIA was hard to engage with, there was no real consideration for points we had made to start a proper Māori conversation, no real will to share the power and make a process Māori centred and so the habitual and understandable mistrust of Māori for the Government was quick to surface.

Plus we had our own internal issues. There was a divisive, combative streak, between Māori as well as toward non-Māori. It is partly a legacy of colonisation, divide and conquer. Being thrown scarce resources makes hungry people fight each other. We, Māori need to really look at that. We need to get out of that deficit thinking and really build ourselves and each other up. Some iwi are doing really well, but we all need to be. Going forward we, Māori, need to realise, like our tupuna Moehanga, first Māori to go to Britain in 1806. He realised that a great wave was coming. He knew then we needed to put down our grievances, hostilities, and harness our kotahitanga, our unifying mauri, to meet and match the force that was coming. History tells us we didn't and we have paid. Now we have an opportunity to change our past and therefore change our present for future.

The Real Issue

The real problem, the real elephant in the room is that there is a fundamental crack, actually it is a chasm, in Aotearoa, New Zealand society, that is the relationship between Māori and European Pākehā. It is a faultline, like our tectonic plates, which has had explosions in the 180 year history, since Te Tiriti o Waitangi and the Treaty of Waitangi debacle, and is constantly rumbling, moving, but is never properly addressed.

For Pākehā, there seems to be a great awkwardness, a shame in their ignorance of, and relationship, or lack thereof, with Māori, with Te Tiriti o Waitangi, and NZ's real history. There is denial from some Pākehā that there is a problem. I realised I was back at Law school.

With Māori, there is just a deep mistrust and a slow willingness to trust.

From both sides, whether there is some colonial denial or guilt and for Māori, ancient resentment and lack of fundamental trust, tells me I was still too far ahead of myself. I was wrong to think people were ready to share or embrace Tikanga Māori into their departments, institutions, businesses, organisations.

Before Tikanga Frameworks, before or alongside emerging digital technology, the fears and opportunities, what seems to be desperately needed in Aotearoa is a way to bridge this fractured relationship between Māori and the European Pākehā who have been here for generations. The awkwardness and the mistrust, the conversation needs to be had. I talk about how in the section, new solutions - going forward.

One of my International interviewees, in the AI space said that the issue of a type of stalemate between Māori and Pākehā, though she understood why, would ultimately halt progress. The world will march on. It felt like a warning to us in Aotearoa.

She wondered if digital technology could be the issue to draw a line in the sand, for Māori and Pākehā. She felt this global lack of real understanding about AI is a great leveler. NZ has no AI strategy yet, Māori opinion is desperately wanted from the international people, like WEF, the IEEE.¹³² She wondered if Māori could unite as one important power, while the Government and many others are on the same learning journey, and get on board at this creation and strategising stage of something that will significantly impact our lives.

The above WEF AI person said he was surprised but understood the anger, but to be heard Māori have to present a way out, or a way through for governments, businesses and organisations to make them realise that things have to change. He thought anger would not make them change.

He didn't know that we have had many peaceful, walking demonstrations at the total injustice of New Zealand's racism, embedded in the law, and the fact that we have been disconnected from our land, language, law and loves, and our dignity has been stripped in the process. So I understand the anger but not violence as a message. I too hate being preached at or given ultimatums, but I understand that when people have been peaceful, law abiding and unheard, the volume needs to be turned up so the deaf can hear. There is a place for those people, those voices. But my practice, my Master's, my tikanga framework, my bias tool that I am developing is one of inclusivity and peace. I come from whakapapa, that we are all connected, rangatiratanga and mana, I will respect you being you, you respect me being me, with kotahitanga through mauri, to coheso diversity. There is a boundary to temper destructive behaviour, that is aroha, be you unless that would injure yourself, others, the whole. It is an AND, AND, WIN, WIN point of view.

New Solutions - Going Forward

I will test and continue to develop my draft Tikanga Framework with key stakeholders and experts to investigate critically relevant knowledge in regard to emerging and disrupting technologies, hoping to result in new knowledge and direction for practice. It is a bare Proof of Concept that Te Ao Māori, Tikanga Māori is essential to business, Government and organisations going forward in this digital age.

Restoring dignity has always been my why, first to my mother and grandmother, then Māori, then, where I can, anyone else. As said above, people are not yet ready for a Tikanga Matatika, Tikanga Framework. I want to be part of building that bridge to heal the relationship which began 180 years ago, by bringing knowledge and understanding to non-Māori about the place and value of Māori as Rangatira, Leaders of Aotearoa, New Zealand and Te Tiriti o Waitangi and our country's full history.

With my non-Māori stakeholders I will continue working with them, first to introduce Māori cultural training, then perhaps the tikanga framework.

I am going to continue working with Āhau and my hapū to develop tikanga based on the blockchain that is used. I would like to become more proficient in that technology and write about it from a Māori perspective.

¹³² Institute of Ethical Electrical Engineers.

In a study looking at what it takes to develop a common language and shared sense of purpose between Māori and the high-tech science sector, they found that intermediaries are needed. People who could interpret the languages of science, business and Māori.¹³³ That is what I would like to be, somebody that can interpret both sides to the other, with respect.

As I said, my first responsibility is to Māori. After speaking to some of my hapū I am going to create a simple info-site to start growing awareness for Māori of the opportunities and concerns of digital technology, and how it relates to them. Being part of the vision of themselves and our nation, going forward, begins the healing of the effects of colonisation and grows pride, which restores and grows identity and dignity. The site will also be a general place of information sharing and connection.

This history of Aotearoa, NZ and TeTiriti/Treaty of Waitangi from a Māori perspective should be in all levels of Schools, as new immigrant training, all businesses and organisations. Given my law degree and my personal background I want to be involved in teaching that, in a way that is truth telling with kindness. Safety and Inclusion are what I appreciate, that is how I want to deliver it.

If countries like South Africa, in Mandela's time, and Germany can openly discuss their painful pasts, have the colonials and nazis own up to their actions, and have some of the Black and Jewish communities forgiveness, and include it in their school curriculums, with the sole aim of healing, learning and never repeating the hatefulness in their past, for the future's sake, then I think we, Aotearoa, New Zealand can do that, need to do that.

Along the vein of South Africa under Mandela and Bishop Tutu's leadership of the Truth and Reconciliation hearings, we could use the The Waitangi Tribunal in a much broader and more powerful way. They should be given a wider scope than mere recommendatory powers about past land, language, cultural loss for Māori. They should be allowed to look into all areas. What about the racist police profiling that was done and continues, leading to so many Māori in jail, leaving whanau without their parents, parents without their children, whanau without whanau and generations basically consigned to the same future; what of that? It's not just the criminal justice system. What about the truths about all our institutions, economic, health stats, education stats, that these institutions were created by another culture's individualistic, beliefs, values, perspectives, that not only did not understand a Māori collective whole whanau, hapū well-being understanding and worldview, they actively sought to silence that knowledge by criminalising BEING Māori, creating the emotional, mental, spiritual, physical illness and poverty that that kind of oppression causes?

The tribunal, ministry, needs to have teeth, in that they should make binding recommendations. It should be a two way process. It should never have been that Māori have had to PROVE the harm done, like the victim in rape cases still have to, that is wrong. It should always have been for the Crown and other New Zealanders to proactively own up to, admit to the racism, systemic, individual, open, covert, brutal, friendly, casual. wrongs done, to honestly say sorry. That's what we teach our kids to do when they've done wrong. And there needs to be amends beyond the financial. We need systemic changes, education, employment, health, environmental, language, european, NZ cultural changes.

Should it all be taken out of the law and lawyers solely and put into the hands of us all, Māori and Pākehā, but Māori led, kaupapa Māori, from all walks of society to carefully and respectfully manage this? It could be called Te Kāhui Aroha, the Ministry of Empathy. It will consult to but lie outside traditional Business, Government and the 'legal' Iwi structures.

Part of the problem of the Waitangi Tribunal is that it has not taken all New Zealanders on the journey of hearing the pain of Māori and hearing the resolutions of the Crown, on behalf of non-Māori New Zealanders, so ignorance prevails. The general public has been allowed to not be part of the process to fully comprehend what their non-Māori and Māori history is, which could lead to greater understanding.

¹³³Hudson et al, [Recognising and valuing Māori innovation in the high-tech sector: a capacity approach](#) - Intermediaries, they agree there needs interpreters

It has also kept out of important knowledge, Māori who don't know their iwi affiliations so miss out on any history and any reparations, financial, social, personal, so grief continues.

Māori have some tough decisions to make about forgiveness, moving on, working together as Māori to harness our unique wairua, energy, so we can set our future free from grievance, into a thriving future. That was a sentiment of Bob Mahuta regarding the Waikato Settlement, the first iwi to settle. He knew continued grievance meant an embattled and embittered future, which would limit their precious tamariki, mokopuna and all the uri to come.¹³⁴ He didn't want to leave that legacy. If Nelson Mandela could rally his people AND the white south Africans to commit to the truth and reconciliation hui, surely we can? What's the alternative for us as Māori? A still divided South Africa that is, according to the World Bank, the MOST unequal country in the world.¹³⁵

If there can be a Team NZ AGAINST COVID, a rallying together for that, surely there can be an Aotearoa IWI, Tribe FOR something like true well being and dignity for all of us.

Broader Solutions against Bias for Aotearoa New Zealand:

PHRaE¹³⁶- This is a tool the Privacy and Human Rights Agency has developed, so the data they hold, use, is incredibly important and powerful.

On the face of it this tool provides various advantages. "First, it encourages project teams to actively consider the potential risks and benefits associated with their new services and what assumptions would need to be true to deliver the perceived added value. Second, it enables them to exclude unnecessarily harmful projects and introduce risk mitigation strategies when needed. Third, it leads to the creation of a repository of the services envisioned, those that got rejected and the ones that got through. Over time and multiple projects, the Ministry builds strong organizational capability in the responsible use of personal information. My critique, where is Māori involvement?"

The subject of Bias even led me to the idea of a Biasscope, a tool to check for your bias. It can scan your business, research documents, policy, film scripts for unintended bias. It can then lay another perspective on your policy, document, for example Te Ao Māori, to show alignments and differences, with a predictive tool to tell you what the different outcomes of either of those would be, so you measure the unintended consequences. The idea is a digital Swiss Army-type of tool, that may have many functions and/or lenses, like a magnifying glass.

¹³⁴ As told by Denese Henare, ex lawyer to Waikato.

¹³⁵ <https://www.theguardian.com/world/2019/may/05/south-africa-reaches-new-crossroads-25-years-after-free-elections>

¹³⁶ <https://www.msd.govt.nz/documents/about-msd-and-our-work/work-programmes/initiatives/phrae/phrae-on-a-page.pdf>, 2018, See also appendix 6.

THE BIASSCOPE©

- 1) BIASSCOPE - Know your BIAS
- 2) MĀORI-LENS - See your company through another lens



- 3) PREDICTOR based on other Values - Society + Environmental Well-Being,

That way someone has the choice to use which one or many were useful to the task at hand. It could be an A.I. driven tool, or something like AR/VR/ Mixed/Cross Reality, which you could put over your document, even your ideas, and it will give you other perspectives of questions to ask, if you are starting out, or it will show you your document in other lights, giving you more information. Dr Roy Davies gave a very simple example of the AR that could be put over a cup and it could tell you whether it was clean or re-usable. I liked his point he made that A.I or any 'helping tool' be subtle, because no-one wants to be told what to do. It is a tool after all, and it is us making our decisions.¹³⁷

I like the idea of using AR/VR. As Pā Marsden says, the written word at best imprisons, captures the spirit or wairua of tikanga, of principles. As you see, our tikanga hasn't really changed over time or with use. AR/VR could aid the idea of one set of 'Matatika/Guidelines', that will continue to be a 'living' document, to be adaptable, flexible, for multi use, over time.

I pitched it to Momentum services. They gave great feedback. I have spoken with an older Māori entrepreneur who has been very successful and innovative in his time. He asked me great and challenging questions which have given me more work to do. Hard he said, almost impossible, but not totally. I only need a hint of possibility to keep going, but a lot more thinking and research is needed.

Internationally

Algorithmic Bias is a challenge that Governments, organisations like the European Parliament, WEF, IEEE, Universities like Harvard, Oxford, M.I.T, businesses like IBM, Google, Microsoft, are all engaged in trying tools, methods to mitigate it, from a partnership between Human and Machine to gain 'augmented intelligence'. A White House report during the Obama administration found that while machines had a 7.5% error rate in reading radiology images, and humans had a 3.5% error rate, when humans combined their work with machines the error rate dropped to 0.5%,¹³⁸ to develop fairness tools, or at the very least make AI transparent, explainable, auditable.¹³⁹

As a response to George Floyd and the Black Lives Matter revolution, Apple is about to launch an entrepreneur camp for Black developers, as a "serious contribution to racial equity."¹⁴⁰

¹³⁷ Davies, R, Lecture, 11 July 2019, TFL

¹³⁸ <https://hbr.org/2019/10/we-need-ai-that-is-explainable-auditable-and-transparent>

¹³⁹ <https://hbr.org/2019/10/what-do-we-do-about-the-biases-in-ai>

¹⁴⁰ Ulanof L, [Apple Announces \\$100M Racial Equity and Justice Initiative](#), June 2019

Conclusion - Te Taumata - Beyond the Horizon

'E tipu e rea, Ko tō ringa ki nga rākau a te pākehā, Hei ora mō te tinana, Ko tō ngākau ki ngā tāonga a ō tipuna Māori, Hei tikitiki mō tō māhuna':

'Grow and branch forth tender youth, Take on and use the tools of the pākehā, For the sustenance of your wellbeing, Your heart to the treasures of your ancestors, To wear as an adornment/plume for your head'.
Tā Apirana Ngata, 1949.

Digital technology has the potential for much good but bias, whether institutional or algorithmic needs to be addressed, now. As I look at an emerging digital world, values, tikanga and the pace with which we, Aotearoa, New Zealand is moving I think of Maori Marsden's words that he wrote when advising about the Te Ture Whenua Māori Act in the late 1980's,

" There is a basic conflict between tikanga Pākehā, which is driving the process, and tikanga Māori which is being pushed to one side. And if we think we are going to address and solve the issues which face us in one day, then we've got to think again...To hurry the process and force people to come to decisions without allowing time for informed discussion...will create a greater mess than we are confronted with at the moment. Tikanga Māori ensures that matters will not be rushed;

Kaua e kaihorotia, kei rāoa. -

- *that they will be dealt with prudently and with patience,*
- *that they will work towards achieving justice and fairness,*
- *that there may be no coercion,*
- *that the tribes must continue consultation until consensus is achieved"* ¹⁴¹

As I have said, we, Māori face the future by looking to the past. When we look at the history of colonisation, we know what it looks like when we see it. And we see it. It is here and it is digital colonisation. If the same group of people, white, middle-class males, with their same values and worldviews are determining the modern issues to solve, developing the tech, software, programmes to solve problems, are responsible for the research, data, how it is collected, who it is collected from, how it is analysed and disseminated, then the institutional bias that already exists because of this same historic group of people, and the harm that has caused George Floyd, Teina Pora, for example, becomes algorithmic bias, the harm will be exponentially worse, not just for Māori, but for many.

The miniscule part of the solution I proposed was to introduce a Māori worldview by developing a practical tikanga Māori framework for tech people and businesses at the level of creation, for Governments at the level of policy and digital strategies, and for businesses and organisations to make them aware of their own bias and that of the data they may rely on. There was a dual purpose; to start to break up that homogeneity of colonial values and worldview by introducing a new worldview, a new set of values, as a first step toward real diversity and inclusion, and to restore the dignity and identity of Māori taken from the initial colonisation.

There were two main groups that I interviewed and researched; Māori and non-Māori. Themes of groupings became apparent and so under each came some categories; With Māori there were Tech and

non-Tech Maori. Under non-Māori there were, European Pākehā adults who have lived in Aotearoa, NZ for more than two or three generations, non-Māori living in New Zealand, and International groups.

It was evident that a tikanga framework would have different meanings and applications to the two groups. For Māori, many have their own tikanga or were familiar with some tikanga. They did not need real introduction. They were interested in how their business and technology would adapt to their tikanga and vice versa.

For non-Māori it was introducing tikanga Māori for the first time or to flesh out the meanings in the context of their business.

At the macro level of predominantly Pākehā businesses, agencies, organisations there is a real interest to engage with Māori in digital technology, mostly followed by 'but how?' At the International level there is real interest to learn more about culture, especially as ethical AI is being globally discussed with a real macro view of diversity and inclusion in the regulation and strategy space.

The meso level started to reveal different reactions between European Pākehā and other non-Māori, but still there was a willingness to engage and understand further the place of Māori in their businesses, Government departments.

The micro level uncovered the reality. When it came to actually testing the tikanga Framework out, apart from the difficulty of Covid, it became apparent there is a great deal of education needed before that step, starting with basic Te Tiriti o Waitangi 101.

For non-Māori there was a real lack of understanding for the actual place of Māori and themselves in Aotearoa, NZ, because of a total lack of education of New Zealand history as told by Māori and Te Tiriti o Waitangi. They had heard of the 'principles' of The Treaty of Waitangi but that was as far as that went in terms of the relevance of them in their lives, professionally or personally.

For the European Pākehā, there was that but also a real sense of awkwardness, embarrassment and fear of the lack of knowledge and relationship the individual or business had with Māori, Māori culture, even saying Māori words properly, with someone asking me, 'please be kind.' There was fear that to introduce a tikanga framework would be seen as something 'imposed', not just as a learning to expand general awareness. It highlighted the awkwardness of even talking about a company's values, let alone someone else's.

The government departments that should know better, still seemed positively unable to grasp the benefit and place of Māori in Aotearoa, NZ society, let alone what inclusion and diversity means.

The macro level for Māori showed there is interest in how tikanga can play a role in innovating and adapting digital technology and vice versa, and the possibilities for Māori. There was concern about taking our tikanga to Pākehā, that they will not understand or respect tikanga Māori.

The meso level showed there was a slight difference if they were Tech or nonTech Māori, only in the level of caution regarding the technology itself. Those with the tech knowledge are excited about what it can do for us and they are concerned with how much our whanau, hapū and iwi don't know. The non-tech Māori have awareness that we as hapū, iwi, need to understand it a whole lot more. It slips down the list of essentials understandably, with food needed on the table, warm, clean homes to live in. But there are real concerns about the harm of digital technology using our data.

In terms of tikanga or bringing Māori culture into non-Māori businesses etc, there is some agreement but with the strong proviso that Māori are fully in charge of the whole process.

The micro level revealed a much deeper chasm of mistrust of Māori to Pākehā with many saying they won't understand, we need to be careful it is not misunderstood, misappropriated, trivialised, or used as a tikanga tick box exercise to we should just keep our tikanga to ourselves, and take any knowledge about the opportunities of digital tech 'back home.'

The desire for diversity and inclusion may be there but the reality of actually introducing it into the fabric of non-Māori values and business or policy document was another thing. Non-Māori are not ready to adopt a tikanga Māori ethical framework.

More work is needed in closing the grievance of colonisation with some real conversations for Māori to be heard, and Pākehā to understand their role in suppressing the identity and dignity of Māori. Bridge building is needed to bring Māori and the rest of Aotearoa to a hohou te rongo, a place of being settled, to go from surviving to thriving. We need people to do the interpreting, the facilitating that is bridge building.

In healing, we have an opportunity to show real leadership, that is shared leadership of two different cultures, Māori and non-Māori, in a world that has few leaders to respect. More education is needed. I would like to give our future the gift of peace and prosperity, not a continued legacy of grievance, indignity, disrespect.

Māori Marsden said, "Only a metaphysic (as opposed solely to a pragmatic, materialistic, capitalistic, positivistic theory) that provides an integrative element across the whole spectrum of life, which produces a holistic approach to life, can unify its diverse elements and allow us to achieve a balance and harmony conducive to life abundant."¹⁴²

I believe the western world has lost its way. What it appeared to have gained in its 'enlightened' science of the individual's supreme logic it has lost in the heart and soul of people and planet. People and the planet are suffering more than we ever have, while a few, a very few have held so much power. Dignity, values, freedom, equality have been lost. We have a chance to harness digital energy for the good of us all but we need new voices, new ideas, new visions, new decision makers. We need all of us, and ironically it's the technology that can make that possible.

In Aotearoa, New Zealand, specifically, the first voice that needs to be heard is Māori, as tangata whenua, the Indigenous people, co-leader with the ever heard and seen Crown, under Te Tiriti o Waitangi of Aotearoa, New Zealand. Not only will it add to the healing of this historic injury that an ethno-centric values system has caused Māori, it will also lead a way forward for others who have been marginalised and silenced from life. This is not an either or proposition, but I go back to my tūpuna who, in 1840 had a huge and generous vision of collaboration. They had so much confidence and faith in the power of their Ao, Io, Ātua, tikanga to be alive, agile, to adapt and collaborate with another people, new power, new technology, and head into a new future, new horizons, Te Pae, together. As I say it was a chance also for the British to have also ditched their old ways and forged with new, to get new. They didn't, but they have a chance now. With our eyes on the knowledge and experiences of our past, we, Māori and Pākehā, both left a home before, Hawai'i, Britain, for new horizons, new beginnings, and now with new whānau who find themselves in Aotearoa, let us move forward, but this time with Māori right there at the helm.

He whakatauki no Tā Hēmi Henare, I te Rangatira o Te Taitokerau: "Kua tawhiti kē to haerenga mai, kia kore e haere tonu. He nui rawa o mahi, kia kore e mahi tonu."

An adage from Sir James Henare, the last Chief of Te Taitokerau, "You have come too far not to go further, you have done too much not to do more."

Aotearoa, New Zealand is at the very beginning of a new future. It could be the beginning of a true partnership, one that could lead the way in the world. It is 'new beginnings' for us all and it's exciting to be Māori.

Tihei Mauri Ora.

¹⁴² p 53, The Woven Universe.

APPENDICES

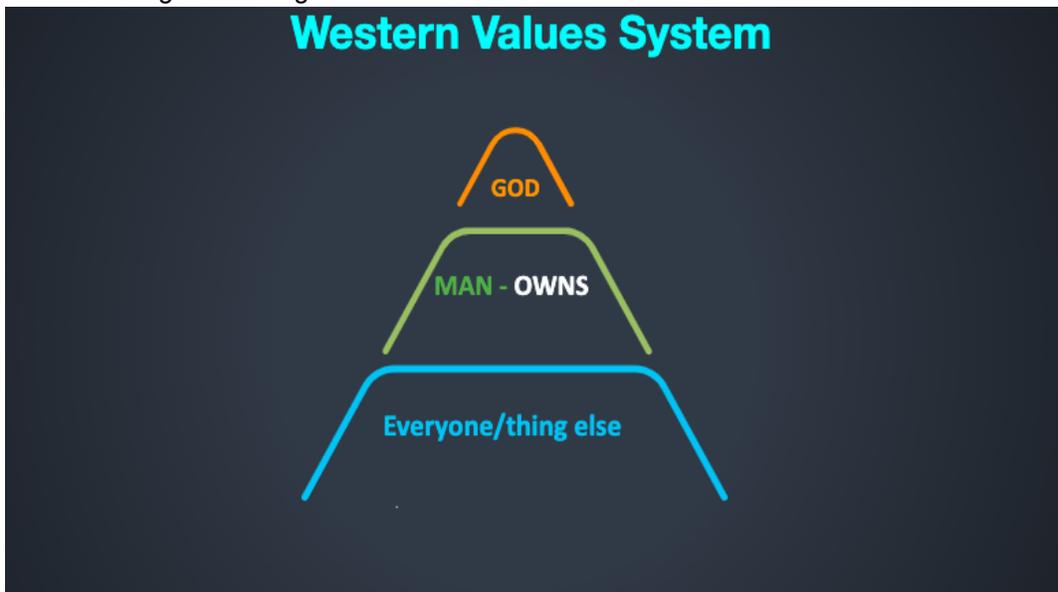
Appendix 1. The inclusion of the two images below is to give a quick visual of how incompatible two different world views can be. Different world views, values produce different outcomes.

A basic image of a Te Ao Maori worldview to encapsulate the place of the individual is only part of the whole network of connections and relationships, with responsibility of the whole firmly embedded. There was no concept of ownership. Regarding Nature, it was all about relationship. We were intimately connected, woven together.¹⁴³



¹⁴³ Royal C ed, "The Woven Universe: Selected writings of Rev Māori Marsden" Ed 2003, the Chapter, God, Man and the Universe.

- A basic image of an English world view.



It is widely accepted that the now-British view of ownership began from William the Conqueror in 1066. That they dominated over their environment came from the Bible, Gen1:26, 'man' was to rule over all of nature¹⁴⁴ (that included women, people, slaves, peasants). The idea of separation, 'man' from God, 'man' to 'man', 'man' from 'women', 'man' from nature is believed to have started around Henry VIII's separation of power of Kingdom from Church, 1500's, followed by the separation of power of Parliament from the Monarchy 1600's, followed by the Enlightenment era in the 1700's¹⁴⁵ where science was separating and dissecting everything. These classifications, divisions, included separate areas of knowledge, work, institutions. Coupled with the Land, nature, certain people were seen as commodities to use.

And, as Rousseau posited nearly 250 years ago, "the value of individual ownership of land, is the origin of inequality."¹⁴⁶

I repeat, Figures 1 and 2 are very over simplified. It is just to give a quick visual of different worldviews and how incompatible they can be.

My real point is that this value of an individual right to own, the idea of cutting up individual, private portions of land is encoded, embedded in and supported by the law, which then went to set up the Institutions of New Zealand, the Law, Education, Health, Religion, the Economy, with the bottom line being the individual is sacrosanct and 'his' right to own. This has meant institutional bias. The Institutions, laws, values are totally foreign to Māori, therefore Māori would always be at a disadvantage. If this is hard to believe or understand, I always suggest taking a week out to go to a marae full immersion experience, without the rules and journal how you feel, how you cope, what you learn. Try it for longer. There are a mix of motives that aren't really helpful at this point, like the superior belief that Māori needed saving, morally, culturally, technologically. And there are plain human motives of greed and power. The point is to understand why Māori could not succeed in beliefs, values, perspectives, systems that they couldn't identify with, that didn't reflect them as people. Plus, they were fighting to protect what was theirs, so therefore they became the enemy of the Colonial regime. The best they could hope for was assimilation.

In Aotearoa, New Zealand, war, disease and then the laws took hold. The dominance then followed by hitting the very heart of a people, banning Māori language, their land, their spiritual practices and

¹⁴⁴ Skeel Jr, D. A. (2007). "The Unbearable Lightness of Christian Legal Scholarship." *Emory LJ*, 57, 1471.

¹⁴⁵ Fergusson, N, "How Britain Made the Modern World" 2009

¹⁴⁶ Rousseau J, "Discourse on Inequality", 1754, argues that private property is the origin of inequality.

ultimately, over time, their identity¹⁴⁷. Haami Piripi, ONZ, Chair of Te Rūnunga o Te Rarawa, said, “It’s how this country was taken so quickly, it was a very, very systematic acquisition of land through land title system, moving from communal to individual title and in that sense combined with a monetary economy, shut us right out.”¹⁴⁸

This is merely an example of what happens when one group of values is embedded in the law, dominates or does not include or recognise the values of another.

Appendix 2 -

<https://tiritiowaitangi.govt.nz/treaty/translation.pdf>

<http://www.treaty2u.govt.nz/the-treaty-up-close/treaty-of-waitangi/>

This is a link to Te Tiriti o Waitangi and the The Treaty of Waitangi and their translation differences.

Appendix 3 -

<https://teara.govt.nz/en/principles-of-the-treaty-of-waitangi-nga-mataponu-o-te-tiriti/page-2>

Treaty principles developed by courts

All images & media in this story

Court of Appeal case, 1987

Court of Appeal case, 1987

Wharewaka, Wellington

Wharewaka, Wellington

Tainui v Coalcorp, 1989

Tainui v Coalcorp, 1989

Treaty of Waitangi Policy Unit, 1989

“Treaty of Waitangi Policy Unit, 1989

Lands case, 1987

A court case in 1987 was the first to define treaty principles in some detail. The New Zealand Māori Council asked the Court of Appeal whether the government’s plans to transfer land to state-owned enterprises breached the principles of the Treaty of Waitangi. To answer that question the court had to decide what those principles were. A judge in the case, Justice Robin Cooke, described the 1987 Lands case as ‘perhaps as important for the future of our country as any that has come before a New Zealand Court.’¹ The court’s judgment became a precedent for later judgments and Waitangi Tribunal reports.

Some of the treaty principles identified by the 1987 Lands case were:

- the duty to act reasonably and in good faith – the treaty ‘signified a partnership between Pakeha and Maori requiring each other to act towards the other reasonably and with the utmost good faith’²
- active Crown protection of Māori interests – the duty of the Crown was not just passive but extended to active protection of Māori people in the use of their lands and waters ‘to the fullest extent practicable’³

¹⁴⁷ The NZ Constitution Act 1852, The Native Land Act and Court 1867, The Native Schools Act 1867, The Tohunga Suppression Act 1903

¹⁴⁸ <https://natlib.govt.nz/he-tohu/korero/after-the-treaty>

- the government should make informed decisions – the Court of Appeal said that in order to act reasonably and in good faith, the government must make sure it was informed in making decisions relating to the treaty
- the Crown should remedy past grievances – ‘If the Waitangi Tribunal finds merit in a claim and recommends redress, the Crown should grant at least some form of redress, unless there are grounds justifying a reasonable Treaty partner in withholding it – which would be only in very special circumstances, if ever’⁴
- the Crown has the right to govern – the principles of the treaty ‘do not authorise unreasonable restrictions on the right of a duly elected government to follow its chosen policy. Indeed, to try and shackle the Government unreasonably would itself be inconsistent with those principles’.⁵
- Another Judge in the case, Gordon Bisson, said it was ‘in accordance with the principles of the Treaty that the Crown should provide laws and make related decisions for the community as a whole having regard to the economic and other needs of the day’.⁶

Other court cases

Since the 1987 lands case, other court cases have also identified, reiterated and developed the principles of the Treaty of Waitangi. Some of these cases include:

New Zealand Maori Council v Attorney-General 1989, which related to forests

Tainui Maori Trust Board v Attorney-General 1989, which related to coal

New Zealand Maori Council v Attorney-General 1991, which related to the radio spectrum

New Zealand Maori Council v Attorney-General 1992, which related to broadcasting assets.

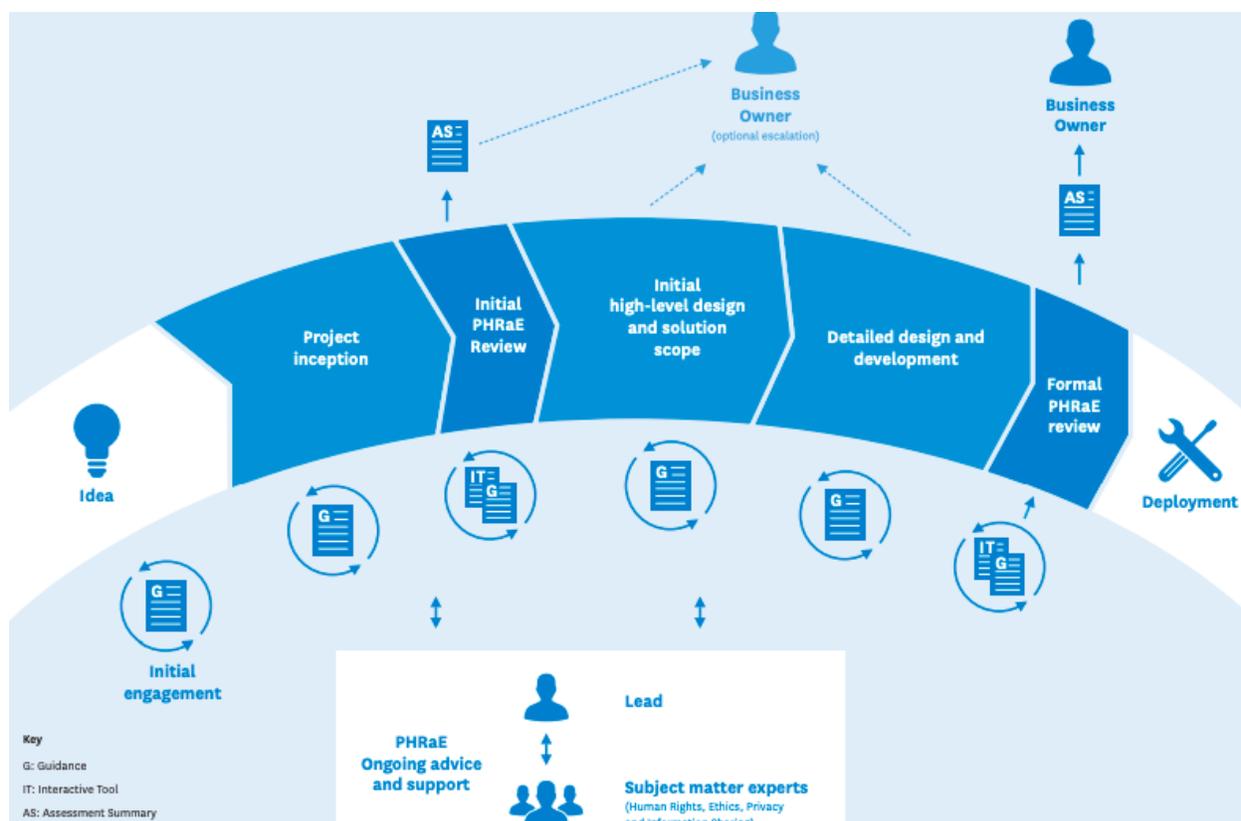
In 1994 a High Court judge said that ‘there is no doubt Treaty principles impose a positive obligation on the Crown, within constraints of the reasonable, to protect the position of Maori under the Treaty’. Tairaroa v Minister of Justice unreported, 29 August 1994, McGechan J, HC Wellington cp 99/94, p. 69

Appendix 4 - Tech Future’s Lab Presentation - 18th April 2020.

https://docs.google.com/presentation/d/1OWuzJCvfJg8k727C75vJGAjWxhE1OtH3ux0AlbzWbFk/edit#slide=id.g8393348c55_2_67

Appendix 5

PHRaE-<https://www.msd.govt.nz/documents/about-msd-and-our-work/work-programmes/initiatives/phrae/phrae-on-a-page.pdf>



Appendix 6 - Part of my contribution to WEF's 'ReImagining Regulations in AI' whitepaper, May 2020. "Te Tiriti o Waitangi, the Māori version, are the principles you want to adopt in any New Zealand strategy of National Conversation building Trust, Risk/Benefit models, Ethical AI building: These are modern and contextually 'translated', to this purpose.

Wairuatanga - The AI Strategy is important, life-changing work, mahi, the consequences hugely beneficial or destructive, therefore we need to keep that at the fore of all our korero, conversations, hui, meetings, and to place 'principles before personalities.'

Rangatiratanga - we have leadership over ourselves and ours, but recognise you, the Crown, and all non-Māori who come under the Crown, your differences, your strengths and weaknesses, what you can bring to the table. This is true shared power, one that Māori had the confidence to do in 1840. It needs to happen in reverse now. This issue is too big for one body, one mindset, the same mono-cultural, mono-gender thinking, values. The Crown or the Government need to share power back with Māori, as an acknowledgement of people's dignity, unique identities, skills etc. National Conversations on the terms of Māori is in line with what the world is seeking; collaboration, openness and transparency. Allowing people, groups to present themselves in a way that is authentic to them is the only way to build trust. The Government go to the people, not make the people go to the Govt.

On a Centre of Excellence, the definitions of Excellence need to come from broad perspectives also. I re-iterate, we just can't keep doing the same things, the same way, with the same players defining the terms. Change means we have to change, all of us.

Whakapapa - we are connected, linked either genetically, spiritually, by purpose, or action, not just in the right now, but the past and with the future. (digital technology has a similar function)Our actions have consequences. Therefore we operate more with responsibility than rights. We act then, consciously, purposefully, respectfully considering the whole picture, shareholders, stakeholders, including the planet, with wellbeing at the heart.

Manaakitanga - we offer a working, collaborative partnership, sharing in an open and transparent way, all resources to get us through this process. The expectation of reciprocity is that you will do the same.

Kaitiakitanga - collective, environmental care and protection, versus the legacy individual ownership, right now-consumption model, means Māori think sustainability, future-thinking, sharing resources, but using them, including human resources, sustainably, respectfully, with the aim to protect the future of Aotearoa, New Zealand.

Kotahitanga - Together, unity in diversity, in decision-making. We need to be together on this, all of our strengths, knowledge, energy because no one group has the understanding, the monopoly of how to properly harness digital technology. Māori have collectivity, connectivity, harnessing huge power, in our DNA,

That is why we need Māori at the shared helm of this Reimagining Regulations in AI. The fruits of the English version of the Treaty have been an uncompromising, uncollaborative, all or nothing, you against us, siloed, take, own, consume at all cost mindset. It does not work in a Post Covid era, where our young people, our future leaders

want values, have a conscience, including for our planet, they want to be unique but collaborative, and they want to work together. That would make Aotearoa, New Zealand a real world leader, as it would encourage other Indigenous and 'marginalised' groups to be part of their Nation's strategy."

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The Waitangi Tribunal Reports - those iwi that have settled and those that are waiting. The settlements claims contain the corpus of mātauranga Māori, mātauranga iwi, hapū, traditional local and national knowledge, tikanga, analysis of history and Pākehā culture, from many well regarded authorities, academic, cultural, social political leaders in Māori culture.

NZ laws, bills, caselaw, debates are public records found now on the Internet, and are kept in many sources like Hansard. The law is a tool and together with the debates form part of the colonial history of New Zealand to the present, the debates show who were the people in power, and the attitudes and rationale that made/make our laws. Interesting is those who are not at the table.

NZ Parliament - The Legislative Process

<https://www.parliament.nz/en/visit-and-learn/how-parliament-works/parliamentary-practice-in-new-zealand/chapter-26-the-legislative-process/>

[Māori Values and Perspectives to Inform Collaborative Processes and Planning for Freshwater Management](#) 2015, a really useful discussion on the place of the Treaty of Waitangi, Māori principles, collaborative processes in a practical way.

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Interesting

"Cortese argues that, "While the works of Piaget and Kohlberg are of monumental importance for the study of moral judgment and moral behavior, **there is a major flaw** in their works. ... **their work seems to ignore the existence of ethnic groups** (p. 1): The ... moral theory' appears to view Anglo-American culture as universal.. My central thesis is that morality based on justice cannot be purely subjective, in the sense that it cannot be derived from the principles of individualism alone. Nor can it be purely objective (e.g., universal rules).

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Ngapartji Ngapartji: Finding Ethical Approaches to Research Involving Indigenous Peoples, Australian Perspectives

Toward an Indigenous, Decolonizing School Leadership: A Literature Review

Muhammad A. Khalifa, Deena Khalil, Tyson E. J. Marsh, Clare Halloran

"We identify five strands of an Indigenous, Decolonizing School Leadership (IDSL) framework that can contribute to the development and reflection of school leadership scholars and practitioners. Specifically, we found that the five consistent and identifiable strands across IDSL include prioritizing Indigenous ancestral knowledge, enacting self-reflection and self-determination, connecting with and empowering the community, altruism, and spirituality as expressed through servant leadership and inclusive communication practices."

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Tsosie, R. (2012). Indigenous peoples and epistemic injustice: Science, ethics, and human rights. *Wash. L. Rev.*, 87, 1133. **This could be particularly relevant to now 'data and technology-science,** "Commentators often mischaracterize the interests of Native Americans as being in opposition to those of scientists. It is more productive to examine how science policy reflects certain principles of thought and a particular research methodology. This methodology may be used for beneficial or harmful purposes. In some cases, conflicts between indigenous peoples and researchers arise because the two groups have disparate systems of thought. In other cases, the conflicts arise because the dominant society has different goals than the indigenous peoples do, and there is disagreement over the concepts of "benefit" or "harm." "

<https://www.nzma.org.nz/journal/read-the-journal/all-issues/2010-2019/2014/vol-127-no.-1397/editsmith> AN interesting critique into another person's statements. **"In Canada** (under the 'Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans, 2nd Ed), **the degree of engagement with First Nation and Inuit peoples for those required to consult has no equal in New Zealand.** The research question, the research design and how the research will build capacity and produce benefits for the local community are addressed before the research ever takes place.

The critical message here is that when dealing with cultural constructs in ethical codes these should impact the whole exercise and not be seen merely as 'add-ons' or ideas incorporated into the mix in a paternalistic and perfunctory manner which has so often been the case in New Zealand."

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MULTI STAKEHOLDER FRAMEWORKS OF COMMUNICATION

3 Ways Firms can master the digital challenges of the 4th Industrial Revolution.

<https://etradeforall.org/wef-3-ways-firms-can-master-the-digital-challenges-of-the-4ir/>, “The future has to be built based on a multi-stakeholder approach. Advanced manufacturing, autonomous mobility and smart cities require true partnership models based on our shared values and must move at internet speed.”

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Jones P, [The Language/Action Model of Conversation: Can conversation perform acts of design?](#), 2010 ...here we focus on purposeful conversations that enable the coordination of multiple perspectives in the activity of designing.

Other conversations create their own energy and go places—they are generative, have momentum, and lead to new and unexpected knowledge. “When assembling a design team we ought to ask, What expertise and what collaborative style(s) do we need? What variety is required to succeed?”

Summarizing, conversation is infrastructure for commerce because:

- Long-term success means ongoing commerce.
- Ongoing commerce needs ongoing trust.
- Ongoing trust is built via ongoing relationships.
- Ongoing relationships are built via agreeing on goals and actions.
- Agreeing on goals and actions is possible only through effective conversation. So, effective conversation is essential to commerce.

<http://theconversation.com/digital-land-rights-co-designing-technologies-with-indigenous-australians-9975>
[1 - Co designing with Indigenous-Australian](#)

- Multi-stakeholder theory - Starting from the Link above about WEF founder, Klaus Schwab propounder of MSI (initiatives)

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2354377 Thinking Clearly About Multistakeholder Internet Governance, 2016

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2354377 - apparently a questionnaire 2013 of the Internet group's governance.(from Wikipedia)

Introduction To The ICANN Multi-Stakeholder Model

Multistakeholderism vs. Democracy: My Adventures in "Stakeholderland" by Michael Gurstein

<http://www.igcaucus.org/> - Norbert Bollow, co-coordinator on the Civil Society Internet Governance Forum^[4] distinguishes between "representative" multistakeholderism, using as examples the United Nation's MAG and ECWG, in which a limited number of seats are distributed to representatives through some selection process, and "open" multistakeholderism, as represented by the IETF and RIRs, which relies on participants self-selecting to balance perspectives.(wikipedia under Multi-stakeholder theory).

Multi-stakeholder Cooperation: Reflections on the emergence of a new phraseology in international cooperation by Marcus Kummer.

ESTONIA - wdrechsler@fas.harvard.edu, Wolfgang Drechsler, professor of governance at Tallinn University of Technology in Estonia. Heath N, "How Estonia became an e-governemnt powerhouse. 2019.

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THIS IS NOT NEW - Various Māori Strategies and Frameworks -

My concern is Māori thinking/being has become departmentalised as is the western thinking. It is against the idea of our 'holistic' world view. Not that Māori didn't recognise individuality, it knew how to recognise it and unify individual for the communal/collective good. See Māori Marsden's writings collected in, 'The Woven Universe', p111, "... mauri(lifeforce) both unifies all things and at the same time bestows them with unique qualities, providing for unity in diversity."

He Aha Waiora - Treasury launched its new framework.

Te Aka Taiwhenua Champions Group - The Māori Strategic Framework within Dept of Internal Affairs [Part 4: ERO's framework for review - Ngā Pou Here](#) Maori world view/framework in education: [Ngā Pou Here](#) the early childhood education review methodology, 2016

Te Whata Korero - A storehouse for Māori Aspiration - About inclusion

<https://www.digital.govt.nz/dmsdocument/113-digital-inclusion-blueprint-te-mahere-mo-te-whakaurunga-matihiko/html#digital-inclusion-through-a-m%C4%81ori-lens> - Their 4 elements of Digital Inclusion: Trust(should be first), Motivation, Access, Skills.

Kia Takatū a Matihiko - Digital Readiness - (Ministry of Education site)

<https://ahikaroa.kiatakatu.ac.nz/?regions=2&types=faceToface&mediums=english&levels=0>

<https://www.r2r.org.nz/maori-health/tikanga-maori-values.html> - A graph of what tikanga would look like in action in an organisation's kaupapa

Hirini Moko Mead 2003, <http://www.rangahau.co.nz/ethics/167/> - 5 TESTS to test an Issue from a Māori perspective

AI - <https://digitalhumans.com/blog/why-give-ai-a-face/>

<https://eandt.theiet.org/content/articles/2018/09/ibm-launches-system-to-detect-unconscious-bias-in-ai-algorithms/> - IBM developed BIAS detection software

DATA is the FUEL for AI therefore it's protection is key to building TRUST for AI -

http://www3.weforum.org/docs/WEF_National_AI_Strategy.pdf - " it is essential to establish a unified and sustainable regulatory environment of mutual trust between data subjects and organizations that clearly explains how data can be collected, stored, processed, shared and potentially deleted. "

"Further, considering the growing influence of AI solutions on all aspects of our lives, we must ensure that their development supports human flourishing. Doing so requires tackling the ethical challenges (e.g. bias and discrimination; denial of individual autonomy, recourse and rights; unexplainable outcomes) associated with this emerging technology and actively promoting the responsible design and implementation of AI solutions through a robust regulatory framework."

"AI works best with more data, if data is the new oil, then China is the new Saudi Arabia." THE AGE of Ai | AiOTEAROA 2020

Watch Time: 1 minute(a feed video on LinkedIn) <https://www.linkedin.com/feed/>

"In the Age of Ai where data is the new oil China is the new Saudi Arabia.. about 50% of jobs will be threatened by Ai in the next 15 years" Kai Lee Fuu

Artificial Intelligence - It's all about TRUST, M.I.T are holding a Do you trust your A.I. conference, March 23-25 in San Francisco

<https://positivitystrategist.com/appreciative-inquiry-overview/> - Really good article on AI as well

https://www2.deloitte.com/us/en/insights/industry/public-sector/ai-strategy-for-government-leaders.html?id=us:2sm:3li:4di_gl:5eng:6dj 2019 - - Does enterprise-wide perspective = Human-Environment flourishing?

Vanian J, Fortune Articles - 'Eye on AI', August 2019

<https://www.bbc.com/news/technology-51064369>, 2020 - Are we on the cusp of an AI winter says researchers.

<https://www.weforum.org/whitepapers/a-framework-for-developing-a-national-artificial-intelligence-strategy>, 2019

China: 1) Develop laws and regulations and ethical norms that promote the development of AI.(not human flourishing)

Compared with France's "AI for Humanity" - ethicists to work with Techithists = EMPATH - ETHICS

<https://medium.com/politics-ai/an-overview-of-national-ai-strategies-2a70ec6edfd>, 2020

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FROM LINKED IN 16.01.2020 Sree Chadalavada **Author**

Managing Partner at Gartner

1d

Agree - Many eminent thinkers believe that we are in the early stages of AI for sure.

Michael Gröbel

Senior Test Engineer Active Safety and ADAS (Advanced Driver Assistance Systems)

11h

The big challenge for commercial applications will be how to test and certify these products. If your product changes over time you never know what you are actually testing. Anyway- its not a brain, its a Computer. So it is possible to track down every decision, as long as you have the raw input data to your system and the current state it was in. Thats why we are talking Petabyte and extreme computing power nowadays. Interesting times, especially for test engineers!

BLOCKCHAIN - I looked at Blockchain as Āhau is using BlockChain and I need to understand it. It also was this technology, with the notion of Decentralised Autonomous Organisations(DAOS) that gave me the hope that we could change our legal system to hear everyone's voices, and to ensure Māori have their unique place as Treaty partner, therefore a much greater decision-making power.

<https://www.nzherald.co.nz/index.cfm?objectid=12220246&ref=twitter> an easy to read what is blockchain.

SIMS A, - Associate Professor in the Department of Commercial Law at the University of Auckland Business School. Blockchain Expert

<https://stanford-jblp.pubpub.org/pub/blockchain-evidence-courts-china>, 2019

"Blockchain and related distributed ledger technologies are understood as decentralized ledgers recording transactions and procuring a secure, time-stamped and immutable chain of information. Thus, such purportedly high quality records (compared to standard electronic archives, which can easily be altered) could prove extremely useful as evidence in court, especially in view of the abundance of online transactions in various fields today. "...Data recorded on a blockchain is in essence a chronological chain of digitally signed transactions. Thus, admissibility of blockchain evidence is highly correlated to acceptance of electronic signatures in a legal setting." There are 3 Internet Courts in China.

"Switzerland, one of the friendliest blockchain jurisdictions with over 600 blockchain companies, including the Ethereum Foundation and Libra Networks LLC (Facebook's new entity for its Libra Project based out of Geneva)."

Voshmgir, S. Token Economy, 2019

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<https://media.consensys.net/defi-daos-and-furries-heres-what-happened-at-berlin-blockchain-week-1e032b118eb6>

De Filippi P, Wright A, Blockchain and the Law, 4/9/2018

<https://blockchainhub.net/> -

<https://blockchainhub.net/dao-decentralized-autonomous-organization/>Fascinating and accessible read into blockchain

A new consensus algorithm was introduced: Snowball Byzantine Fault Tolerance -

<https://avalabs.org/QmT1ry38PAmnhparPUmsUNHDEGHQusBLD6T5XJh4mUUn3v.pdf> - Safety: Unlike

classical consensus protocols, and similar to longest-chain-based consensus protocols such as Nakamoto consensus [43], we adopt an ϵ -safety guarantee that is probabilistic

The Royal Society Te Apārangi - an independent, statutory not-for-profit body in New Zealand providing funding and policy advice in the fields of sciences and the humanities