Creative art at the hyphen in Aotearoa-New Zealand

Tōia Mai: A partnership project

Dr Joe Citizen
Presentation to Dunedin School of Art
Otago Polytechnic Te Kura Matatini ki Otago, 2020

Tēnā koutou,
Ko Karioi te maunga
Ko Whaingaroa te moana
Ko Ngāti Pākehā te iwi
Ko Castlefranc-Allen te hāpu
Ko Ruapuke te Papakainga
Ko Joe Citizen ahau
Kia ora!

Ngā mihi nui

My acknowledgements to mana whenua
I would also like to thank and acknowledge
Wiremu Puke, Rahui Papa, and Te Hā o Rōpu o Kirikiriroa

Ngā mihi nui

Wintec Māori Achievement 2017 - 2018

From left to right: Kaumātua Tame Pokaia, Kate Wynyard, Korikori Hawkins, Hagen Tautari, Ngahiwi Duffy, Jamie Lambert, Director Māori Hera White.
Not present, Kingi Kiriona, Tania Oxenham, Awhina Kerr, and others...

Ngā mihi nui

KEY PROJECT PARTNERS:

Wintec
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Te Kuratini o Waikato

Hamilton City Council
Te kaunihera o Kirikiriroa

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And also:
Nicky Lia, Professor Frances Joseph, Dr James Charlton, Dr JaneMary Castlefranc-Allen, Dr Barry Parsonson, Dr Simone Inkrot, Nick Johnston, Joanna van Walraven, and Muna Wharawhara, Pam and Les Roa, Jemoal Lassey, Brent Phillips, Jourdan Templeton, Dr Jeremy Mayall, Horomona Horo, Norefjell Davis, Louise Belay, Olivia Mead, Andy Fendall, Gert Hattinger, Ying Wang, Luke McConnell, and many other entities, both human and otherwise...

There's a couple of points here that I'd like to make with regards to these acknowledgements. The first is that it's common for most people's eyes to glaze over and for their eyes to stop working. But to me it indicates the literally hundreds of people who have been involved in this endeavour.

With that in mind, the project partners and sponsors are not just brand names – although they are that as well – but people who came together to contribute in different ways. I can point to almost all of those logos and tell you the names of the people who worked to make this happen, in a real, active sense. There was a great deal of good will that smoothed any number of what seemed at the time, insurmountable obstacles.

The last point I want to make here is that these logos and names also direct our attention to what Bruno Latour calls the agency of actants – a term that in new materialist and speculative realist philosophies relates to what some people call the agency of things that *do* things. I use that term 'thing' in its loosest sense, because I'm not necessarily talking about tangible, physical objects. Although I am talking about them as well.

So when we look at these organisations and people, it's necessary to also consider their discursive aspects too, such as the way in which this thing called tertiary education works, or the powers and tendencies of local government and commercial interests. Peeling back this surface, it also becomes apparent that a web of relations exist through time and space in what we might call history, policy, practice these types of things. And yet there's another layer too – the environment itself has an influence. An example of this within a speculative realist account, for instance, might consider the amount of rain that fell during summer, which affected the water levels of rivers, lakes, hydro-electric dams, export prices and the available funding from say, an electricity community trust.

Now at the risk of labouring the point, what's missing here are perspectives from Te Ao Māori – which in the context of Aotearoa-New Zealand, run across and through all these other agencies. And although I'm Pākehā, I certainly wouldn't claim any privileged position as to what some might call absolute truths in relation to how the universe operates. That's a really important thing to keep in mind, because Western-informed philosophies have had a long history of ignoring and marginalising indigenous knowledge, despite the equally long history of indigenous knowledge providing a means by which Western philosophical traditions might be able to break out of some of the conundrums it currently faces, not the least of which in relation to environmental degradation, digital disruption, and traditional Western understandings of Science.

Hyphen

Refers to the grammatical hyphen line
that "draws attention to the complex space at the self-other border."
(Fine 1994, in Jones, 2017, p. 184)
Useful when considering the 'between' of intercultural spaces of
Aotearoa-New Zealand and Māori-Pākehā

- The thing about this block of theory that Alison Jones describes as "working the hyphen" is that, as she describes it, "joins, as well as separates". So it's a useful term because it acknowledges that whilst there is place of meeting between cultures, there's also aspects of cultures that are very different, incomprehensible to the other.

- It's possible also to be critical of this term, because it relies on a convention from Western written grammar. The fact that it relies upon writing – which in Western traditions has a long association with representation – means that oral cultural approaches to language are less apparent.

- This become important when attempts to consider language as being performative – that is, has the power to *do* things and not just operate in a symbolic manner. So the language we're using at the moment is English, and when we've travelled a little way through this discussion, it might be useful to return to this point. Because the language that's patently not so much in evidence is te reo Māori.

- So I have to acknowledge my own position in all of this, with my cultural tendencies and assumptions, many of which I am scarcely aware of.

Cultures plural: Māori-Pākehā

Attempting to operate at the intercultural hyphen spaces found in Aotearoa-New Zealand means:

- Acknowledging the principles and practices of Te Tiriti o Waitangi
- Acknowledging that cultures cannot be reduced into simple self-contained entities (cannot be essentialised)
- Acknowledging that cultures are, nonetheless, different to each other

Implicated

> In practice, there is no standing apart, no 'disinterested observer'.
> In the nitty-gritty of it all, I am always entangled within the continuously emerging phenomena

I am a practice-led creative arts researcher

- At the risk of going down a massive rabbit hole, the point here stands in relation to the Western academic traditions by which this thing called 'knowledge' is considered to be both valid and true.

- I don't want to go into it too much, but the notion that measurement in particular stands in for what is considered to be objective truth stands on some pretty shaky ground.

- We'll cover some of this later, but for the moment at least I want to make the claim that so-called 'universalist' truths – or truths which are said to lie outside of human experience - themselves rely on human-centric understandings that claim that humans alone are capable of deciding what knowledge is.

- I'm not claiming that these things are untrue. The scientific method and mathematics have absolutely contributed to human understanding about the universe. But rather that Western scientific traditions – until the advent of quantum mechanics at least – failed to take into account their own presence and influence within unfolding phenomena.

The difficulty of definitions

- As tangata whenua, the term 'Māori' refers to being "ordinary" (Royal, 2017, p. 113)

- Pākehā might've originally referred to "the fair-skinned people, who came from the sea" (https://www.rnz.co.nz/programmes/john-bluck-writes/story/2018701081/john-bluck-asks-who-wants-to-be-a-pakeha-episode)

- Pākehā here, also helps to refer to people whose cultural traditions have historically been informed by Western metaphysics

Cultures. *Singular.*

Returning now to the hyphen, I just want to draw attention to the difficulty of definitions, particularly in relation to who gets to make them and what do they mean, to who, and in what context.

There's also the obvious danger that when definitions are made, there's tendency to slide into essentialisms. In the context of Aotearoa-New Zealand, this in turn sets up a binary dynamic – and the difficulty of that is that dualisms fit very well into pre-existing Western modes of understanding, but don't very well engage with or acknowledge plurality, multiplicity, or simultaneity. Instead, meeting places tend to be characterised by oppositionism, universalism, or hybridity.

So to be clear, the intent here is to attempt to operate in a manner where Māori ways of being and doing is taken to be ordinary and everyday.

In practice

Māori ways of doing things as everyday and ordinary

As a Pākehā, I'm not very aware of my own cultural assumptions...

As a Pākehā, or non-Māori person, that presented me with a lot of.. Well, challenges, is one way of putting it.

For example, working with a group of people where te reo Māori is the ordinary and everyday language, means that most of the time I cannot take for granted, anything.

Which in many ways, particularly at the start, is terrifying for someone who wants to get it right.

The trouble is, it's not a tick-box exercise. There is never a definitive 'right'. But there is very often lots of ways I can get it wrong..

In practice

A relationship with Wintec's Māori Achievement Unit

- Which brings me to the ongoing relationship with the frankly amazing group of people who make up part of the tertiary education organisation where I work, Wintec's Māori Achievement Unit.

- Now relationships don't just arise out of nowhere. I first met Wintec's Director Māori Hera White and Kaumātua Tame Pokaia in 2008, when had been temporarily employed as an arts archivist. Today, it has become more common to make distinctions between taonga and art, but back then it was scarcely on the radar of the art school in which I now teach, let alone within the comprehension of the average Excel spreadsheet manager working in finance.

- Ten years later, when I initially approached Hera regarding what was to become the public art sculpture now known as *Tōia Mai*, she'd had a chance to see who I was, what my values were, and to weigh up whether or not the project would benefit our students.

- I still think she took a heck of a risk. Because there's so much I didn't understand, and in actual lived practice, I made – and still make - lots of mistakes. So I just want to acknowledge the partnership aspect in all of this. I'm deeply honoured that we

went on this journey together. It has, in all honesty, utterly and irrevocably changed me and I'm immensely grateful for that.

In practice

Two entangled research projects:

- Joe as Wintec researcher who worked with Wintec Māori Achievement to help embed 'Māori values' into student learning, through a collaborative real-world project centred on making a Matariki-informed interactive public art sculpture

- Joe as PhD candidate and artist, who researched relational emergence and speculative metaphysics at the hyphen

History

Creative
Practice-led
Speculative
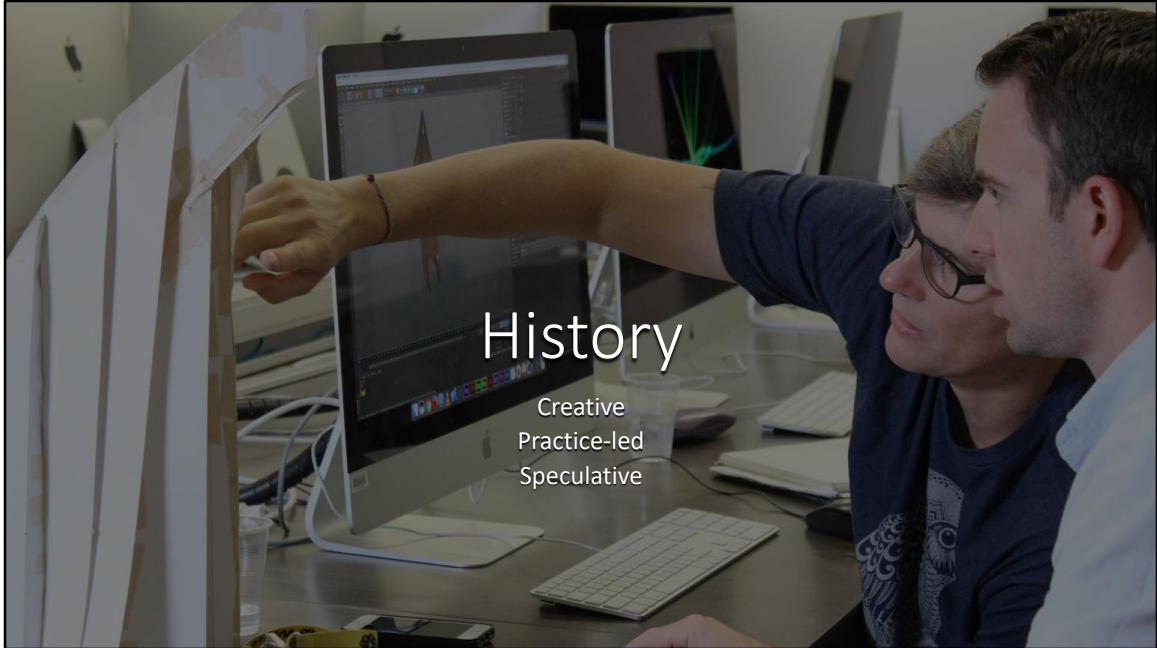
- In the creative arts and for those of us who work in media, there's an implicit understanding of what creative means, which is not necessarily shared by those who situate themselves outside of this domain. For the moment at least I will take it for granted that you all know what I mean by this term 'creative'.

- Practice-led however, probably requires a little explanation. What I mean by this is that the site of the research is in the practice itself. It's not practice-based, which is to say, I do practice as a means to derive or analyse in relation to theory. I do, do that, too. But the difference is on the emphasis as to where the research is considered to be situated. For me, the practice is the research. For people schooled in university traditions, this is sometimes a problematic distinction. For those of us who have come through polytechnic traditions – with their long association with what is sometimes described as applied knowledge, this seems less of an issue. Where this becomes important in terms of my research is in relation to exploring performativity, a term that I'll explain in a moment.

- The term speculative also requires some consideration. In one sense, speculative researchers are not interested in asking questions like 'what' or 'how', or even, 'why', but rather, are engaged with the 'what if' and the perhaps… And the other

way in which this word is used – which relates to the what if and the perhaps, is in relation to metaphysics - which the field of study that wonders about how the universe, or universes, operate. So when I say that I'm working at the intercultural hyphen, I'm not just saying that there are different perspectives that need to be taken into consideration, but that there are different knowledges of how the universe operates that are situated within each cultural framework.

- Now the difficulty for the average Westerner of course, is the presumption that their cultural understandings are right, and furthermore, that there is a rightness to be had.
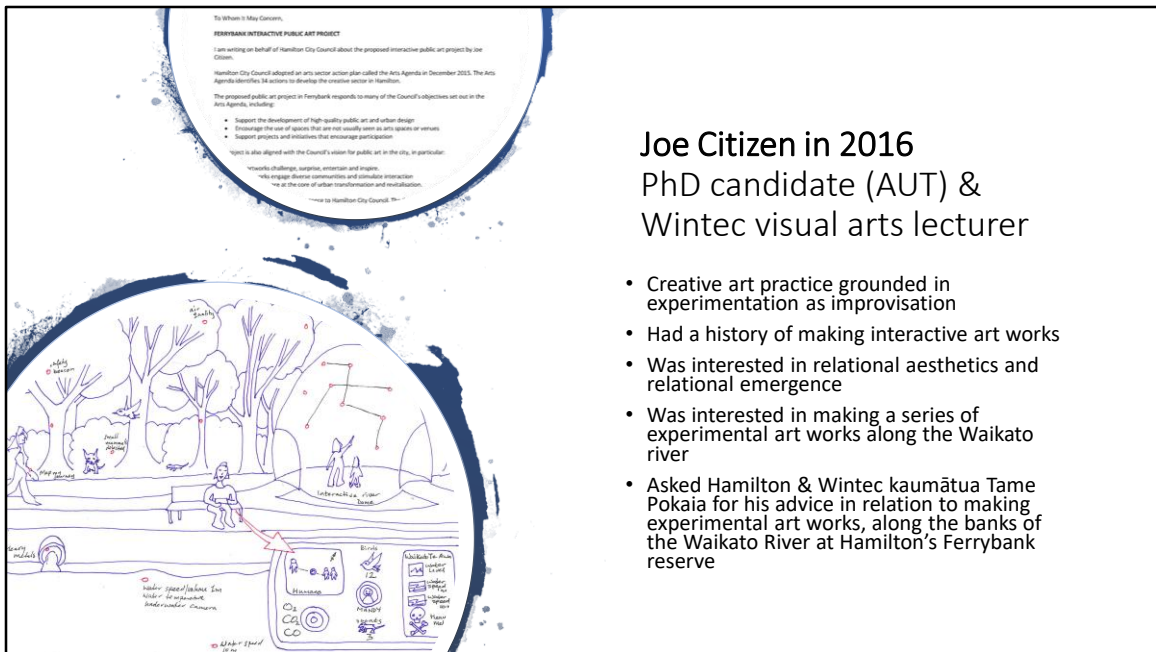
Joe Citizen in 2016
PhD candidate (AUT) &
Wintec visual arts lecturer

- Creative art practice grounded in experimentation as improvisation
- Had a history of making interactive art works
- Was interested in relational aesthetics and relational emergence
- Was interested in making a series of experimental art works along the Waikato river
- Asked Hamilton & Wintec kaumātua Tame Pokaia for his advice in relation to making experimental art works, along the banks of the Waikato River at Hamilton's Ferrybank reserve

- So all of this is the context to much wider concerns.

- When I started off on this journey, it's fair to say that I was pretty task focussed and not very aware of my cultural metaphysical predispositions. Or rather, like a good Western academic schooled in liberal humanist traditions, I thought myself way to enlightened for all of that.

- I was to discover however, that the Western Enlightenment had a lot to answer for and that I was about to confront a lot of its assumptions head-on.

- Like any good academic, I had to start with some critical concepts which would frame my research. Let's take a look at some of them now..

Critical concepts

Performativity

- Performative = understanding meaning through action
- Western shift away from representational modes of understanding, towards considering materiality as being performative
- Listening is performative. Consider: Arohia, which is "dynamic listening and participation" (Nicholdon, Spiller, & Hēnare, in Spiller & Wolfgramm, 2015, p. 275)

Listening is not passive - it is an action
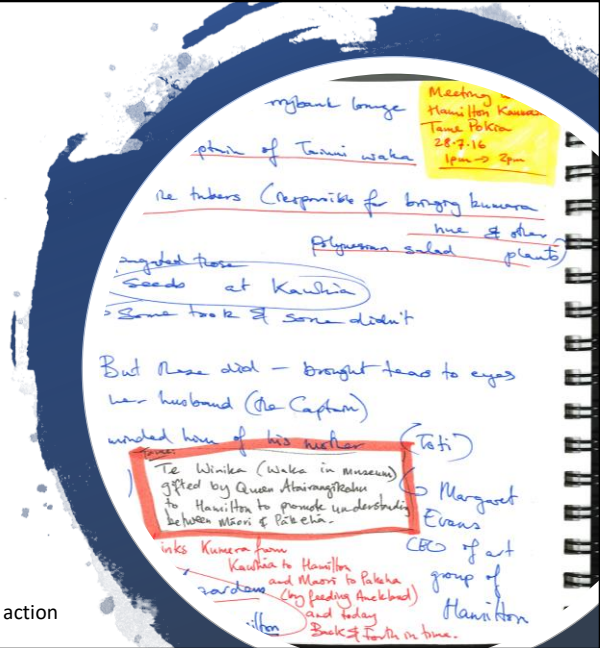
- JH Austin introduces this idea that language can be performative – which he describes as existing in phrases like 'I do' at a wedding ceremony, or 'guilty' in the context of a courtroom.

- This idea is taken up by feminist writers like Judith Butler, who say that gender is performative.

- More recently, new materialists and others like Karen Barad, have begun to consider the way in which matter can be considered to be performative, to have what is known as agentic capacity. There are different approaches to this, but generally speaking, it's the idea that matter is not atomistically discrete, self-contained, or dumb and inert. Instead it is considered to have agency, it has the power to do things.

- So all of these contemporary Western philosophies are starting to try and depart from the influence of older, more foundational philosophies that have shaped Western understandings of how the universe operates. Perhaps the most infamous is Descartes, with his whole division between mind and body, nature and culture, subjective and objective truth. Hugely generalising, he says that our senses lie to

us – which for him was evidenced by being able to see wriggling little animicules in a microscope or gain a new understanding of the solar system through a telescope – and that therefore the only real way to understand what truth is, is through rational logic, which humans alone possess.

- Now what if Descartes hadn't gotten it quite right? What if, for instance, that our senses are not simply passive receptors of information that our active minds have to actively reason what ultimate truth is? What if our senses are active, that is to say, they have agency within our consciousness and are therefore participatory within our knowledge creation?

- So here you can see my Pākehā brain at work, which is to say, it's really hard to try and escape Cartesian frameworks when half the time I'm not altogether aware that I'm absolutely saturated in their assumptions.

Relationality

- 'Ko au te awa, ko te awa ko au' - I am the river, and the river is me
- What is a waka journey? *A vessel? A channel?*
- Waikato-Tainui recognise seven stars of Matariki – different 'portals' of an interconnected universe
- Blurred lines between 'human' and 'non-human' (absence of Cartesian-informed dualism)
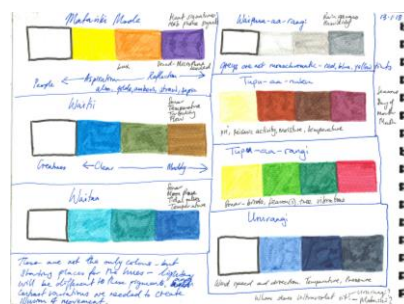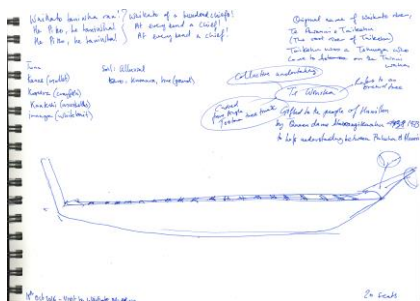
Relationality

- Relational emergence – mutually constituted phenomena (Barad, 2008).
- Informed by Heidegger's bridge that "gathers the earth as landscape" (Grierson, p. 354, 1993)
- (New) materialisms: Objects as bundles of properties. Material agency
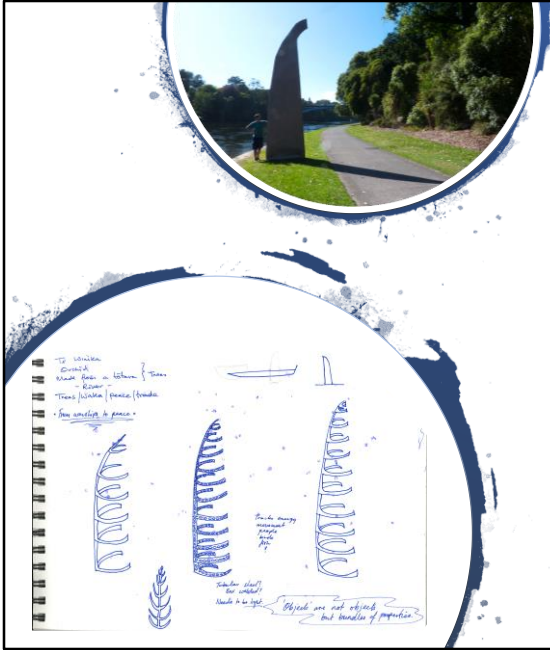
Agency of actants

- A useful term - an *actant* refers to something or action that does something. In other words, it has agency

  Latour, Law & Callon, 2005

- Actants exist within networks that acknowledge how the "social, technical, cultural, and natural" inform phenomena

  Salter, 2010, p. xxviii
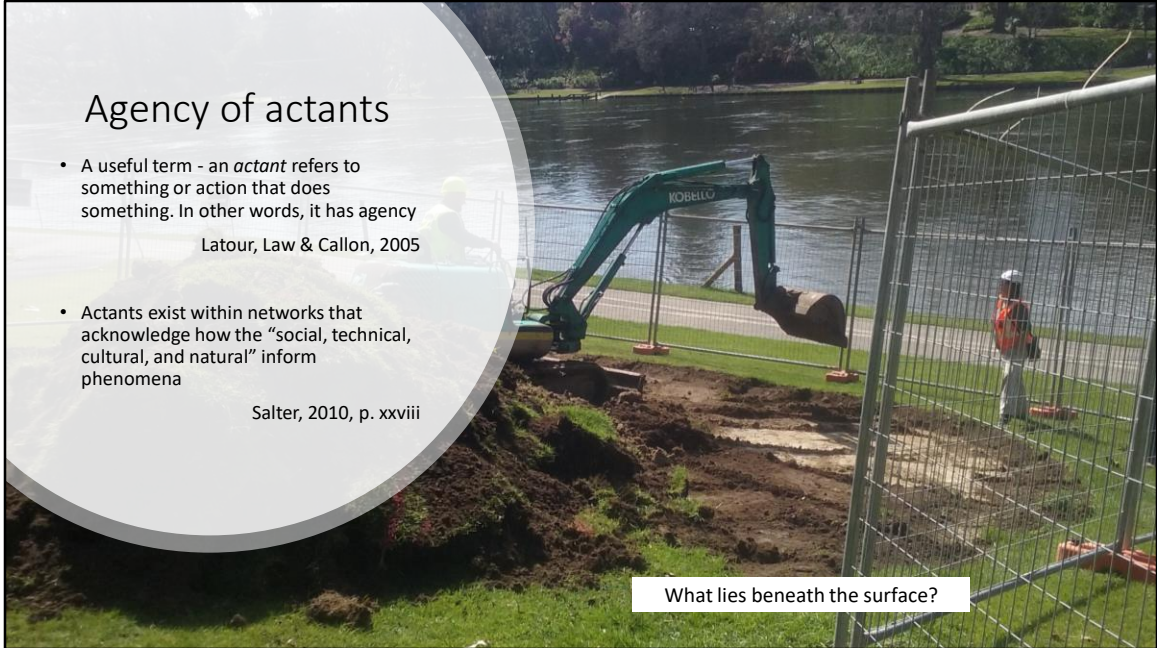
What lies beneath the surface?

Partnership

Attempting work in accordance to the
principles and practices of Te Tiriti o Waitangi

Attempting to be guided by a kaupapa Māori methodology

- Māori Achievement led the project
- They arranged series of hui with local hāpu
- Hui were predominantly in te reo Māori
- Can Pākehā be involved with kaupapa Māori?
  - "By definition, no: Kaupapa Māori research is Māori research exclusively." (Smith, 2017, p.12)
  - Problematic – can't assume common understandings of how the universe operates
- "Pākehā involvement with Kaupapa Māori [brings] risks… [but] it is not black and white; it is about people, it is about relationships." (Smith 2012, in Jones 2017, p. 191)

Working in alignment with existing kaupapa
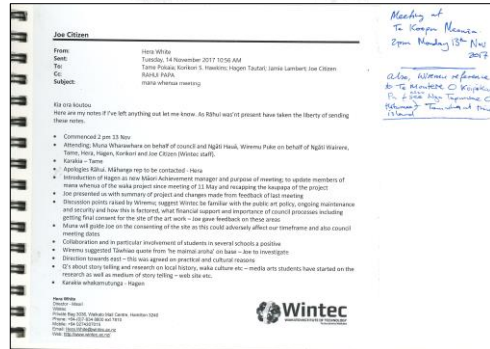
FIVE KEY FOCUSES FOR GREATER MĀORI ACHIEVEMENT:

Te Reo	Māori language and pronunciation
Tikanga	Māori cultural practices and etiquette
Te Tiriti	Understanding the Treaty of Waitangi and how it applies at Wintec
Ako	Māori teaching and learning pedagogies
Ahurea	Māori culture and society

- Working *with* meant being guided by Māori Achievement to embed existing values into real-world student practice
- This required *me to change* how I did things:
  - This is not my knowledge. I am not an expert but a learner
  - Deferring those 'things Māori' to Māori ways of doing and being. Seeking Kaumātua Tame Pokaia's advice and changing the design etc as a result
  - Not 'consultation' – but conversation
  - Not simply student-centred, but student informed
  - Meetings are not driven by the clock like other education 'allocable resources'
  - Not being task-focussed. *How things are done are as important as what is done*
- Attempting this across multiple domains, with different staff and students, different curricula, administrative systems, research paradigms, and business norms, entailed challenging ordinary ways of doing things inside the educational organisation!

Decentred artist: Joe is not in control

- Kaupapa Māori refers to a capacity for transformative change. (Durie, 2017, p. 2)
- Knowledge and methodology inform each other – the journey is part of the destination

Wintec internal partnerships
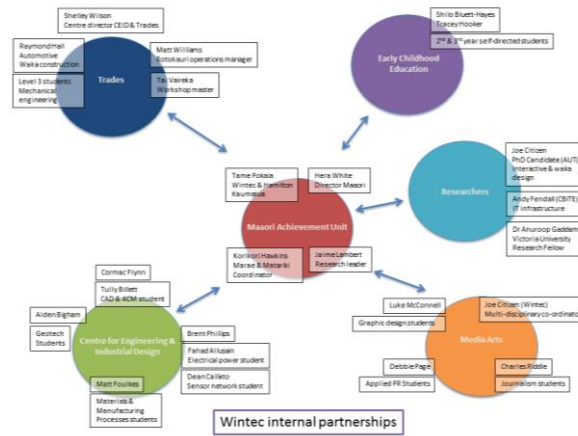
2017 organisational description

Whakawhanaungatanga BBQ Feb 2017

- 'Whaka' - to be; 'Whanaungatanga' - stresses "the primacy of kinship bonds in determining action and the importance of genealogy in establishing rights and status" (Hēnare, in Spiller & Wolfgramm, 2015, p. 91)
- Whakawhanaungatanga BBQ gave students and staff involved to get to know each other

Kaumātua Tame Pokaia welcomes students

- Not getting it right – introducing someone to the project as a means of fixing a problem – put the project into jeopardy and I had no idea why.

- No opportunity for whanaungatanga – Māori Achievement hadn't met them, and they hadn't had the opportunity to meet every one else involved with the project.

In practice

- Poor communication – some staff & students turned up at the wrong time
- Some students didn't know why they were there
- Some students couldn't see the connection between 'Māori' and 'applied learning'

In practice

- Hard for staff and students to make the connection between their different domains – Trades, Engineering, Media Arts and ECE
- Poor understanding of project by Trades staff who were showing students around – tendency to talk about things and machines instead of relationships and relevancy to different domain practices
- Poor understanding of Māori cultural values and lack of cultural safety by staff – no karakia, no reference to Matariki, and an anatomical model of human head was used to demonstrate 3D printing machine by bouncing it up in down

Initial plate design by

Engineering student

Tully Billett 2017

In practice

- Project fully embraced by Engineering staff
- But high proportion of international students in Engineering meant difficulty with local context
- Difficult for students and staff to engage with:
  - Understanding 'Māori' worldviews as very generalised, without iwi or hāpu distinctions
  - Matariki concept not well understood
  - Waikato te awa – river as tūpuna. Many found difficult to understand, or dismissed as superstitious
- Tendency to focus on the material aspects of the undertaking.
- **But what is an object?**

Objecthood

Universalist assumptions cannot be taken for granted

Civil engineering students consider foundation requirement 2017. Photo by Awhina Kerr

- Traditional Western metaphysical trajectories informed by:
  - Aristotle (things have essences)
  - Plato (objects have ideal forms)
  - Descartes (our senses lie to us, only rational thought is true. Division between [active human] thought and [dumb inert] matter)
  - Kant (Cartesian dualisms + impossible to know the thing 'in-itself', but *a priori knowledge* (knowledge before experience) is possible through "the shared sensible "form" of experience" (Gratton, 2014, p. 18) i.e. so-called 'universal truths' about time, space, and other abstractions such as numbers
- Western thought tends to consider thought and spirituality as being ethereal, non-material
- But these concepts cannot be taken for granted – they arise from *Western cultural beliefs* of how the universe operates

Disruption of mechanistic model: Quantum mechanics

- Objects do not stand apart. 'Things' are mutually co-constituted within continuously emerging phenomena (Barad, 2007)

- Objects and agencies of observation are mutually entangled within unfolding phenomena – there is no Cartesian division between 'knower' and 'known'

- 'Objectivity' is therefore the search for replicability (Barad, 2007)

Multiple Māori metaphysical perspectives

- Non-Western understandings of vitalism as expressed through interconnected assembly of life forces: "*tapu, mana, mauri, and wairua*" (Hēnare, 2015, p. 84) [italics in original]
- "the self has always already been established by a thing" (Mika, 2017, p. 72)
- "The temporal is subordinated under the cosmic process and denotes not time but sequences in processes and events which occur in the cosmic process." (Marsden, 2003, p. 23)
- "It is necessary to be 'in tune' with the world rather than stand at a distance from it, so that "one "cast[s] attention to" a thing but not from a position of authority." (Smith, 2000, in Mika, 2017, p.22)
- **Interfusion of the spiritual and material realms**

Mātauranga Māori

Gateway concept: Matariki

Matariki

Each star is a doorway or portal to different aspects of the interconnected universe, and which have "a relativity for culture, certain people on the planet, well-being, security, care, and wholeness" so that everything "work[s] in sync with each other."

Tame Pokaia

2017
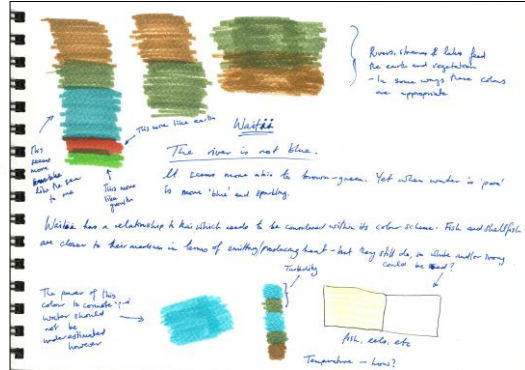
Interfusion

Aligning environmental sensor technologies with the seven stars of Matariki:

When data science meets Mātauranga Māori

Original proposal to Kaumātua Tame Pokaia for IoT sensors and their alignment to the stars of Matariki (Feb 2017)
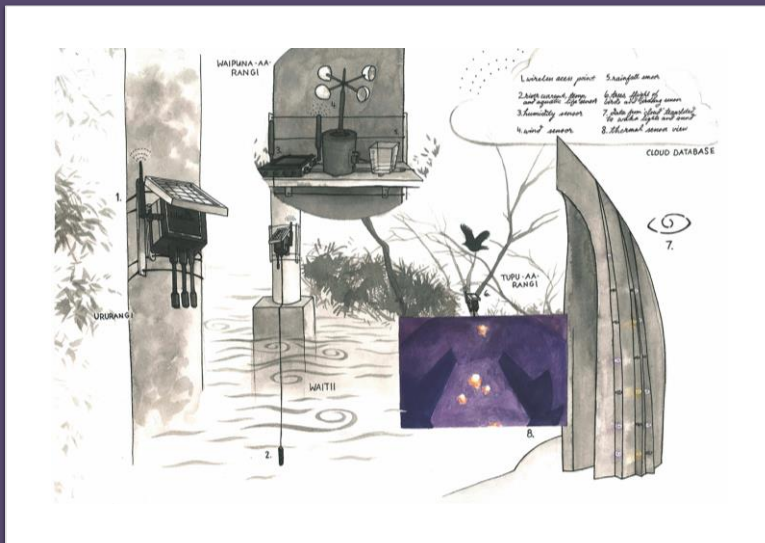
Enabling collaborative multi-disciplinary practice

Engineering, fabrication, design, storytelling, and IT architecture begin to come together

Illustration by Juliann Smith, 2017

- So the thing about working in a collaborative multi-disciplinary manner, is that different domains have different domain cultures. In science and engineering for example, the term 'experiment' is taken to mean a process by which a hypothesis is tested in a particular manner. In the arts, 'experiment' means a host of other things, often centred around the idea of working in an improvisational manner. This may or may not be iterative, and can be with others – for instance when musicians jam together – or not, for instance someone like the sound artist John Cage is described as being experimental, because he wanted to formally deconstruct what 'music' and 'performance' might mean in practice.

- These domain differences have huge implications when attempting to collaborate together. Consider the concept of a prototype – essentially an experiment – which for 'industry' related paradigms such as trades or engineering, means a distinct phase at the start of a production process. The notion that experimentation might continue throughout the production process is not considered to be commercially viable. And when these differences are common practice for each domain, that's when the difficult aspects of multidisciplinary practice really starts to bite.

- So whilst there were these differences, and despite the lack of knowledge by staff

and students alike, about Māori culture, it nonetheless acted as a means which bound these practices together. That's not to say there weren't rough patches, because there certainly was. It's just that everybody was in the same boat. So the whakatauki that went with the project was 'He waka eke noa' – which literally means – a waka or canoe we are all in, with no exceptions.

- Well, that can be understood in a very literal sense, or in a metaphorical one. When you're in a boat in the middle of uncharted waters, then everybody learns how to work together. Because if you don't, you drown. Everything really *is* interconnected, and just to extend that boat in the middle of the river a little bit further – the currents you're travelling on are comprised of all sorts of things that come to the surface or travel under it. The education system, existing politics, whether or not it rains too much in winter, those chance encounters you might have with people on the street, funding applications - all sorts of things act upon each other, have influence, shape events as they unfold.

Matariki as gateway concept: *interconnectedness*

"We are part of that nature that we seek to understand"
(Barad, 2007, p. 26)

- Making distinctions between 'human' and 'non-human' doesn't help in attempting to escape Cartesian-informed distinctions, it actually recreates that trajectory. The very language we use is performative, it co-constitutes our lived embodied experiences

- Matariki works on multiple levels – each one a portal to understanding a different aspect of the universe and yet it's clear that they are also connected to each other. For instance, waipuna-aa-rangi (water that pools in the sky) has a relationship with tupu-aa-rangi (kai and the goings on in trees), tupu-aa-nuku (kai and the goings on at ground level and under the ground), not to mention a relationship with Ururangi (related to the wind), and of course Waitii (relating to entities to do with fresh water), which in turn has a relationship to Waitaa (relating to entities to do with salt water), with the whole being looked after by Matariki, which in the Waikato-Tainui tradition is seen as a Mother, with the other stars as her daughters

- Then of course there's the relationship Matariki has in relation to the turning seasons, the end of autumn and the beginning of winter. The harvest has come in and it's not yet time to plant new crops. It's a time of reflection for those who have passed on and for thinking about the future

- And this in turn has to engage with a non-Western notion of what time is, but more on that later..

The sound journey

- Very early on, Kaumātua Tame Pokaia recounted to me the story of Hani and Puna, who wander for millennia yearning for each other. Eventually Puna finds Hani, but first destroys an obstacle that obstructs their union. She does this by emanating a wave of energy in front her – the first sound

- Right from the start, it was decided to use taonga pūoro as part of the interactive sound design

- The renown taonga pūoro practitioner Horomona Horo was approached and he agreed to become involved with the project after meeting with Kaumātua Tame Pokaia first

- It was only through a series of masterclasses that the then student Norefjell Davis became involved, and the two of them entered into further collaboration with her tutor, Dr Jeremy Mayall

- The sound design is informed by whatever 'star mode' is in operation – itself decided by whatever environmental input is most prevalent

Tōia Mai Interactive Logic

Zones 1 to 3, with Zone 1 being closest to entrance:

Zone	Lights (on ch 0)	Sound
No-one present	Taniwha (9), Taniko etc (11/ 12)	None
3	Entrance (2), Taniko etc (11/ 12)	None
2	Entrance (2), Taniko etc (11/ 12), Eyes, (10)	Entrance / Exit sounds (Tracks 57, 58, 59, 60)
1	Entrance (2), Taniko etc (11/ 12), Star modes (1, 3, 4, 5, 6, 7, 8)	Star mode tracks, currently: Matariki (1 -4) Ururangi (9 - 12) Waitii (17 - 20) Waitaa (25 - 28) Waipuna-aa-rangi (33 - 36) Tupua-aa-rangi (41 - 44) Tupua-aa-nuku (49 - 52)
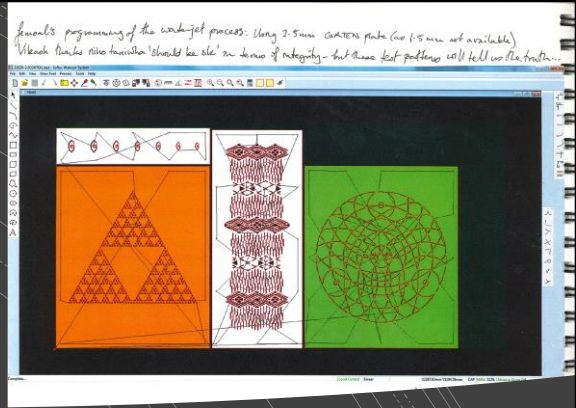
Synergies and parallels:
What is materiality?

- "We are part of the nature we seek to understand"
  Barad, 2007, p. 26
- "one thing is never alone, and all things actively construct and compose it."

  Mika 2016, in Mika 2017, p. 4

Material agencies

- When matter is identified as being performative (meaning understood through action), then the ongoing processes of materialisation are discursive. To put that another way, the inclusion of certain phenomena simultaneously excludes other phenomena

- Meaning making is therefore not solely a human practice (Barad, 2007)

- If materiality is mutually co-constituted and continuously emerging, then both it and the practices involved in its materialisation have agency

- Therefore, how things are done, matters.

The taniko pattern – from the embroidered hem of Kīngi Pōtatau's cloak, to the lighting cut-outs on the keel of *Tōia Mai. Thread, space, time, metal…*

Potentiality

"all beings and objects are experienced as having mana, a form of presence and authority, and a 'vigour, impetus, and potentiality' called mauri" (Durie 2001, in Hoskins & Jones, 2017, p. 52)

"mauri and mana name the interconnectivity of the human and non-human worlds" (Hoskins & Jones, 2017, p. 52)

Quite different to traditional Western conceptions of potentiality as non-material, non-manifest, without tangibility
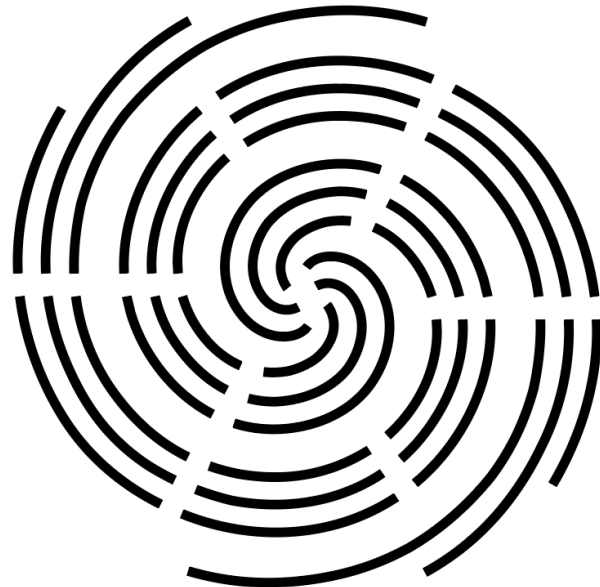
Takarangi pattern used for the topmost Matariki star

And… *even material realism has its limits*

- The "mutual constitution of entangled agencies" (Barad, 2007, p. 33) means that former atomistic notions of materiality must be discarded

- Identifying the agency of materials means that they can be considered as "lively and self organising, rather than passive or mechanical" (Bennett, 2010, p. 10)

- Agency is not therefore limited to the causative or linear, nor solely be the prerogative of humans

- The quantum discontinuity provides a means to understand potentiality, not in relation to non-manifestation, but through indeterminancy

- *Time* therefore is not a 'sensible concept', its definition cannot be taken for granted. The quantum discontinuity means that where and when electrons manifest is indeterminate and cannot be accounted for through 'ordinary' causality

Taniwha lighting pattern on *Toia* Mai:
Light, water, sound, matter… it's all energy (waves)

So what is digitality?

Does digitality have materiality?

Digitality

- Is not 'substanceless' – always electrical, always a relationship to conductivity, heat, even Cloud servers have to exist somewhere
- Virtuality cannot be defined by functionality – 'invisible' to machines does not mean it lacks tangibility
- Visual virtuality co-constituted through Cartesian mapping - requires an origin point zero
- Co-constituted by the clock – requires time to be regulated and measurable in order to make its operations predictable
- It is quite conceivable to consider a non-predictable form of digitality, for example, a form of quantum stateless computing where multiple stateless entities await inputs from quantum events, which run, disassemble, and generate other stateless entities in a non-linear manner

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] [SCENE] Transitioning from 'Zone 3' to 'Default - No Occupancy'
] [SCENE] Skippable: True  Duration: 299.998153(s)  Expiry: 6/12/2018 9:31:11 AM +13:00
] [MULTIDAP] Fading volume to 0 over 0.5s
] [MULTIDAP] Playing track 0
] [MULTIDAP] Fading volume to 0 over 0.5s
] [SACN] Updating universe 1...
] [SACN]    [0, 0, 0, 0, 0, 0, 0, 0, 255, 0, 255, 0, 0, 0, 0, 0, 0, 0, 0][09:26:12 INF] [SACN] Upd
] [SACN]    [162, 152, 4, 0, 18, 91, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 127, 0]
] [SACN] Updating universe 3...
] [SACN]    [255, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0]
] [SCENE] Transition complete.
] [FLIR] {"Time":"2018-12-05T20:27:17.333+00:00","Type":"PedestrianPresence","Level":0,"ZoneId":2,"B

] [FLIR] [1]: 0, [2]: 1, [3]: 0
] [SCENE] Transitioning from 'Default - No Occupancy' to 'Zone 2 - Entrance'
] [SCENE] Skippable: True  Duration: 143.9982504(s)  Expiry: 6/12/2018 9:29:21 AM +13:00
] [MULTIDAP] Fading volume to 0 over 0.5s
] [MULTIDAP] Playing track 58
] [MULTIDAP] Fading volume to 100 over 0.5s
] [SACN] Updating universe 1...
] [SACN]    [255, 0, 0, 0, 0, 0, 0, 0, 0, 255, 255, 0, 0, 0, 0, 0, 0, 0, 0]
] [SACN] Updating universe 2...
] [SACN]    [162, 152, 4, 0, 18, 91, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 127, 0]
] [SACN] Updating universe 3...
] [SACN]    [255, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0]
] [SCENE] Transition complete.
] [FLIR] {"Time":"2018-12-05T20:27:18.587+00:00","Type":"PedestrianPresence","Level":0,"ZoneId":1,"B

] [FLIR] [1]: 1, [2]: 1, [3]: 0
] [SCENE] Transitioning from 'Zone 2 - Entrance' to 'Zone 1 - Star Mode (Ururangi)'
] [SCENE] Skippable: False  Duration: 158.9980259(s)  Expiry: 6/12/2018 9:29:37 AM +13:00
] [MULTIDAP] Fading volume to 0 over 0.5s
] [MULTIDAP] Playing track 10
] [MULTIDAP] Fading volume to 100 over 0.5s
] [SACN] Updating universe 1...
] [SACN]    [0, 0, 255, 0, 0, 0, 0, 0, 0, 0, 255, 0, 0, 0, 0, 0, 0, 0, 0][09:26:59 INF] [SACN] Upd
] [SACN]    [162, 152, 4, 0, 18, 91, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 127, 0]
] [SACN] Updating universe 3...
] [SACN]    [255, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0]
] [SCENE] Transition complete.
] [AZUREIOTHUB] Uploading 1 telemetry event(s)
] [AZUREIOTHUB] Upload complete
] [AZUREIOTHUB] Waiting for message...
] [FLIR] {"Time":"2018-12-05T20:27:28.502
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IT architecture by Jourdan Templeton, Aware Group

The backdrop to this human activity are certain Māori concepts such as whakapapa (genealogy), wairua (spirit) and manaakitanga (hospitality). One's connection to another person, witnessed through the display of these terms, can vary the degree to which one can learn or teach: the role of self-esteem in the relationship between learner and teacher and hence to knowledge, the openness of the classroom as a whole to the dissemination of knowledge and thinking, and the point at which one is related to the Other – teacher or learner – are all hugely important in the educational process for Māori.

Mika, 2017, p. 60

Ako

Ako:
more than
'learning is reciprocal'

- Everyone has something to contribute e.g. MPPT student prototype made me reconsider final design

- Shift in power dynamic – not power over or under

- Teaching and learning relationship is constantly being revitalised as each learns from the other

- Requires me to teach/be as my authentic self – runs counter to domain culture 'expert' knowledge paradigms

Wintec Māori and Pacifica Pre-Trades (MPPT) students at industry-partner Longveld, contemplating their completed waka prototype (2017)

Authenticity

Being my authentic self meant being more relaxed – and this meant that students could be more relaxed with me. I became more of a project manager in a way – supplying them with resources – which they said they needed to complete the project

The journey is the destination

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