Junctures
The Journal for Thematic Dialogue

22: multi-

November 2021-2022

ARTICLE

https://doi.org/10.34074/junc.22029

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Published by Otago Polytechnic Press. Otago Polytechnic Ltd is a subsidiary of Te Pūkenga – New Zealand Institute of Skills and Technology.

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NAVIGATING KNOWLEDGE FRAMEWORKS AT THE INTERCULTURAL INTERFACE

As we emerge not altogether unscathed in 2022 into what optimistically might be called a post-pandemic world, we are confronted by the pressing need to address global and climate instabilities against a general backdrop of complexity. Potential solutions must be balanced against environmental and societal concerns that cannot take for granted that any system is somehow isolated. Here then is the crux of new materialist and post-humanist approaches – a shift "away from Kant"[1] and away it seems, from humancentric understandings of who, or what, has agency in the world.

Despite acknowledging the agencies of non-human others, such as electrical grids[2] and quantum entanglement,[3] or proposing new speculative realist frameworks by which to engage with such agentic capacities,[4] finding workable solutions within such dynamics remains stubbornly difficult. What does become clear, at least, is that these Eurocentric traditions, arising from the European Enlightenment project, have not served the environment particularly well. Newtonian physics can no longer claim mastery over the tangible world through recourse to universal laws acting in isolation, and liberal humanism is revealed to be underpinned by Eurocentric cultural traditions of human exceptionalism and the rights of the individual exceeding the rights of the collective. As I have argued elsewhere,[5] such traditions within the European imaginary arise from Judeo-Christian notions of dominion over the nonhuman and are reinforced by successive bifurcations between nature and culture through Plato/Aristotle-Descartes-Kant metaphysical trajectories.

What is surprising about new materialist and post-humanist approaches is their curious resistance to Indigenous Knowledge frameworks that pre-exist such concerns by the Western academy. In Aotearoa New Zealand, however, there has recently been an increasing awareness that "mainstream science has a lot to learn from indigenous science,"[6] despite colonial legacies that presume a cultural superiority grounded in the knowledge frameworks of the European Enlightenment. Foremost amongst these legacies is a dependence on Kantian sensible concepts to valorise objective truth, itself reliant on a humancentric Cartesian bifurcation between nature and culture. Examples of these cultural shifts towards a more Māoricentric understanding of what the universe is and how it operates can be seen emerging within the once monolithic domains of

Health, Education and Law. Such changes are both well overdue but not without challenge, not the least of which because the tenets of liberal humanism and scientific rationalism have been taken to be self-evident by their existing powerholders. As Alison Jones puts it, a "science based on 'the knowability of things'" problematises Pākehā learners' ability to engage with "non-Western knowledge" because of a universalist epistemological framework that assumes "the teleological fantasy of Western education as a linear increase in knowledge."[7]

An example of this contestation within wider scientific discourse can be illustrated through a recent letter to the editor to the popular magazine *The Listener*. Signed by a dozen leading professors from the University of Auckland, it argues that Mātauranga Māori cannot itself be recognised as being the same as science. Here then is a backlash against Māori knowledge frameworks that emphasise relationality and interconnectedness, for their argument seems curiously tautological and embarrassingly lacking in self-reflection: if only "the discovery of empirical, universal truths"[8] can be recognised as science, then those Māori frameworks that do not conform to this pre-existing condition cannot be recognised as such.

Eurocentric framings of science such as this tend to be underpinned by deterministic and reductionist understandings of phenomena grounded in material realism. Constituted by conjoined claims that materiality is the sole basis of universal reality, non-influential observations of isolable entities are reduced into supposedly indexical abstractions and subject to internally consistent logical relations to reveal otherwise hidden foundational truths. Nested inside these commitments is a Western predisposition to frame divergence from this supposedly self-evidential framework in dualist terms: material tangibility is positioned against cultural intangibility, whereby ideas and beliefs are somehow held to be without material form, and spirituality is, by extension, a form of belief *that has no basis in materiality*. These tendencies can be traced to the European Enlightenment project's own struggles between rationalism and idealism – a binary that positioned spirituality as external and intangible (e.g., God) and rationalism as internal and intangible – humans alone in the universe are capable of rational thought and are therefore (after Descartes) capable of deducting truth from the deceptions of our senses. The subtext of those scientific communities that oppose the validity of Mātauranga Māori is that it has been tainted by spirituality, with the result that claims about non-humans having agency are dismissed as mere belief.

What such a lack of self-reflexivity by those working in scientific fields unfortunately renders invisible is that which hides in plain sight: Mātauranga Māori has much to offer Western understandings of relational emergence within unfolding phenomena. Part of the difficulty for Western thinkers to escape human exceptionalism is its attendant privileging of the centrality of human agency. When the agencies of non-human others are not only acknowledged but foregrounded, then how humans behave must always be considered within the ongoing field of relations – not from a sense of obligation, but by the realisation that they are not always in control. Such a realisation requires acknowledging that which is unknowable, which presents a fundamental rapprochement with Kant's "things in themselves," considered by him to be unknowable: "We can accordingly speak of space, extended beings, and so on, only from the human standpoint."[9] Kant's transcendentalist claims of a priori knowledge (knowledge before experience) relies both on the Cartesian bifurcation that separates representations from sensations, and on an insistence that the only way human beings can understand reality is through time and space:

> So if I separate from the representation of a body that which the understanding thinks about it, such as substance, force, divisibility, as well as that which belongs to sensation, such as impenetrability, hardness, colour, etc., something from this empirical intuition is still left for me, namely extension and form. These belong to the pure intuition, which occurs a priori, even without an actual object of the senses or sensation, as a mere form of sensibility in the mind.[10]

Kant's "pure intuitions" about time and space are therefore grounded in the measurable, which he understood as being both foundational and universal, or as Peter Gratton neatly summarises: "there are some universal forms of the subjective knowledge of things that transcend and make such experiences possible."[11] Such a claim, however, is a cultural one, for while extension and form can be subject to logical relations in order to derive numerically consistent truths, it cannot be assumed that knowledge of time and space (subjective or otherwise) can in any way be considered universal or even scientifically consistent. Newtonian physics, for example, is internally logically consistent, but its reductionist foundations are not just problematised, but completely superseded by the dynamic relationality of the quantum discontinuity.[12] Similarly, Mātauranga Māori emphasises relationality rather than causality, interconnectedness rather than reductionist and atomistic entities, and a nested epochal understanding of time,[13] rather than a sequentially temporal one.

As a Pākehā creative arts practice-led researcher collaborating with a rōpū (group) wanting to add to what is already known about Ngā Maramataka (turning of the moon/ lunar–stellar frameworks of knowledge), it is often difficult to remember my own cultural predispositions towards reductionism, causality, humancentricity and the assumption that logical data relations correspond with things in-themselves. To reverse a popular catechism: causality is not correlation. This is not to claim that causality does not exist, but that causality as understood as the reduction of entities acting in isolation cannot by themselves explain the complexity of continuously emerging phenomena. When human agency is not privileged within the field of relations and the agencies of non-humans are acknowledged in a co-relational manner, then understanding continuously emerging phenomena becomes both more ecocentric and location-aware. Caution must be exercised at the intercultural interface, however: Mātauranga Māori is its own knowledge framework and it cannot be taken for granted that Māori concepts will readily cross over and integrate into traditions that assume the knowability of universal truths.

In Pākehā colonial traditions, Ngā Maramataka have historically been criticised for their lack of consistency across different regions and hapū. But, as Wiremu Tāwhai puts it, such knowledge is location-specific:

> The Raukumara forests, the rivers, the sea and the lands of the fertile coastal strip have sustained the people of the tribe with rich resources for the centuries they have lived here. Close and intimate dependence on the environment have provided their scientists with centuries of opportunities to diligently study, examine and evolve specific bodies of knowledge to ensure their survival here. This research is about the lunar month of Te Whānau-ā-Apanui, one aspect of the people's total knowledge base of their territory.[14]

Understanding location specificity is to acknowledge that climate, ecologies, behaviours and all the ebbs and flows of seasonality exist as its own situation, and have their "own little ocean of complexity."[15] What is true for one rohe (territory/boundaries) may not work for another, because

the co-relating conditions are different: it cannot be assumed that a knowledge framework from a coastal region on the east of the North Island has equivalency with knowledge frameworks from centrally located volcanic basins or South Island braided rivers. Neither can it be assumed that there are not connections either, through whakapapa (relationships of descent) or otherwise, for among different maramataka there are similar names for the same nights, or the preferred times for planting and weeding are similar. Causality here is not discarded, but understood in a non-reductive manner, always in relation to what else is also going on.

Observation of emerging phenomena is therefore relational and, as previously stated, it is not always possible to seek equivalency across diverse cultural knowledge frameworks. The preoccupations of data-driven science do not necessarily sit well with Tātai Arorangi (astronomical knowledge), for while predicting appearance events or trajectories across the sky have importance, the data itself is less important than understanding the relative importance of ngā tohu o te taiao (signs of the natural environment). For example, Ngāi Tūhoe scholar Rangi Matāmua describes how the appearance of Matariki (Pleiades cluster) above the horizon at the start of the year is observed in relation to other environmental conditions: "Each of the nine individual stars would be assessed, and mental notes would be made of their brightness, distinctiveness, colour and distance from the surrounding stars. Likewise, the movement, colour, and shape of the entire cluster would be noted."[16]

Engaging with Ngā Maramataka in a non-reductive way means to engage with knowledge frameworks that acknowledge the interwoven relationships between tuia ki te rangi, tuia ki te whenua and tuia ki te moana (strands/threads of the sky, land and ocean). According to maramataka tohunga Rereata Makiha, these three strands relate to the three ngahuru (10-night phases) of the maramataka,[17] which in turn co-relate to a host of other seasonal and environmental indicators. The relationships between strands are not abstract measurements or symbolic representations such as those found in Eurocentric divisions of time, but must be considered both dynamic and relational or, as Reverend Māori Marsden of Te Tai Tokerau (2003) says, it is "continuous creation and [...] a dynamic universe [...]. The universe is not static but a stream of processes and events."[18]

If understanding the complexity of interwoven relationships between living and non-living entities is already integral to Māori worldviews that recognise Te Taiao (the natural world), Western science has been slower to recognise their importance. To an extent the control fantasies of Newtonian physics have been hard to relinquish, but the recognition of relational emergence within nanoscience and quantum mechanics is no longer rocket science: "while classical physics tells us about a simple universe made up of point masses moving along trajectories, it is only through an understanding of the *relational structure* of the materials around us that we can account for our experience of a dynamic and multiform universe."[19]

Because the knowledge frameworks of te ao Māori and te ao Pākehā have differences, working on a shared endeavour together means continuously making effort to understand each other's associated paradigmatic predispositions. For example, when data science and Mātauranga Māori meet, the prediction of empirically measurable instances is not necessarily a goal, nor can it be assumed as a methodological necessity. The varying number of nights found within Ngā Maramataka does not readily reconcile with a sun-based Gregorian calendar, and calculations must also consider when to start counting in relation to a preceding moon rather than an arbitrary number of days within a 12-month cycle. The capacity of numbers to symbolically chart time and space

and conform to logically consistent operations does not also mean that the resulting data provides a good understanding of phenomena in the process of relational emergence. Partly this is because IT as a domain tends to be unaware of its own Eurocentric traditions of cognitivism, valuing calculation over the unpredictability of embodied knowledge: "The concept of knowledge as an abstractable, extractable thing is part of the *representational idiom*. Computing, which deals exclusively in symbols (representations), is the technology of representation par excellence. It may thus be fundamentally incompatible with cultural practices that engage with the *performative idiom*".[20]

In this Eurocentric tradition, computational logic can be considered as a cultural machine for producing replicable outcomes. It is perhaps more accurate to describe it as a type of logicity, which refers to the actuality of its cultural predispositions towards cognitivism rather than any absolute claim on truth. When engaging with Mātauranga Māori, for instance, measurable data such as that gained through environmental sensors or from scraping data from pre-existing websites cannot assume an automatic equivalency or, worse, any inherent superiority based on assertions of objectivity. As argued elsewhere, objectivity is a cultural claim that truth can be derived from human rationality alone, predicated by what Kant called commonly shared or "sensible" concepts, which in Eurocentric traditions refers to the supposed universality of how time and space can be understood through abstracted measurement.[21]

When working with IT professionals who are not aware of the importance of how live embodied knowledge is co-emergent and relational to events, it becomes necessary to emphasise that the purpose of an architecture and data platform should not necessarily presume that data-gathering or prediction is the primary goal. An example our rōpū is exploring is to use a live-stream approach to audio in relation to concurrent observations of maramataka phases and other tohu (indications/ signs). Data will only become stored as individual audio stems when experts and interested communities engage with the live stream through an application which simultaneously records their participation – e.g., through taonga pūoro. This strategy is an attempt to acknowledge all the other relational and co-emergent instances in the liveness of those continuous manifestations within the originary context, as well as providing additional re-presentational resources for future researchers interested in identifying individual presences and behaviours of actants in co-relation to the maramataka phase / season of that time.

This approach also attempts to address a more fundamental tension that IT professionals may not even be aware of – emphasising prediction as a goal has the potential to diminish the mana (authority/ power/ influence) of maramataka experts. Expertise, however, is not solely the ability to predict numerically consistent outcomes, but is the ability to contextually understand phenomena as it manifests in relation to the matter at hand. Furthermore, representational paradigms tend to situate expertise within hermeneutically sealed framings without acknowledging the agency or influence of the expert within ongoing situations. When their expertise relates to kaitiakitanga (guardianship/ stewardship) of the whenua (land/ domain), then prediction is far less important than what actions are necessary to ensure the best outcomes for te taiao (the natural world).

This paper has attempted to identify some of the presuppositions of Western metaphysics in order to help foster better outcomes for intercultural endeavours engaged with Mātauranga Māori. It has identified how both traditional Eurocentric science and new materialism /post-humanism can learn from Indigenous Knowledge frameworks if materiality and spirituality are approached in a non-dualistic manner that does not presume clear distinctions between tangibility and intangibility.

Acknowledging how Eurocentric traditions have taken as self-evident the validity of reductionism, atomistic causality, human-centricity and the assumption that logical data relations correspond with things in-themselves helps to foster recognition of how human agency is not privileged within the field of relations, but rather exists in a corelational manner. This in turn enables a better understanding of how Mātauranga Māori is location-specific, complex and interwoven with te taiao, and therefore has much to offer Western science in learning how to be more ecocentric rather than humancentric.

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My work is relevant to the fields of Māori–Pākehā relations, post-humanist and new materialist critique, aesthetics and contemporary digital theory. For further information, please contact me: Joe.Citizen@wintec.ac.nz

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