
Statement



NZAS Council Perspectives on Mātauranga Māori and Science

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Consideration of the relationship between Mātauranga Māori (Māori knowledge) and science is an increasingly important task for the New Zealand science community. This short article provides some background and perspectives on this subject, to help foster further constructive conversation. It is intended as a primer for people seeking better understanding as to why organisations such as the New Zealand Association of Scientists (NZAS) support the recognition of Mātauranga Māori and a more appropriate intersection of it with the sciences. All the authors are scientists who hold roles on the council of NZAS and none is an expert in Mātauranga Māori or the colonial history of New Zealand. As such, this article represents an articulation of our understanding, as scientists, of the intersection between Mātauranga Māori and science. We acknowledge that the issues we touch upon in this article are complex and have been oversimplified for the sake of brevity. We encourage the readers to follow the references we provide and educate themselves further. Ambiguity can in itself fuel disagreement and is not constructive to debate (Parke and Hikuria, 2021), we therefore hope to increase clarity in the exchange of views on Mātauranga Māori and science.

Any discussion about Mātauranga Māori and science needs to begin with some historical perspectives. In brief, a treaty between many iwi (tribes) representing Māori and the British Crown was signed in 1840 (Te Papa Tongarewa, 2008*a,b*). Differences in translation between the English (The Treaty of Waitangi) and the Māori (Te Tiriti O Waitangi) versions led to different interpretations of the meaning of the treaty (Te Papa Tongarewa, 2008*a,c*). These differing interpretations fueled conflicts between British settlers and Māori (New Zealand History, 2021*b*). Māori became outnumbered by new settlers and most Māori land was alienated (New Zealand History, 2021*a*). The Māori language was also replaced by English and for a period of time was actively suppressed with efforts to revive it starting as recently as the 1980s (New Zealand History, 2022).

It is important to realise that Māori knowledge has passed through the generations verbally. Orally transmitted knowledge has different characteristics than knowledge designed for written preservation and dissemination – including more emphasis on concepts than details, and the development of

methods for remembering a large volume of data (Science Learning Hub, 2022). The suppression of te reo Māori (the Māori language) and Māori culture had a devastatingly negative impact on the vitality of Māori knowledge.

We need to acknowledge that most aspects of modern New Zealand have been built on a European/British model, including governance, education and infrastructure. When combined with the past events in New Zealand, this has led to large discrepancies in wealth, health, education and other life opportunities, between Māori and Pacific New Zealanders and those with European ancestry (relative to their proportions within the population) (Radio New Zealand, 2020, Stats NZ, 2022*a,b*). This inequity is a great injustice that harms the whole of the society (OECD, 2022). We support the Crown in committing to work in partnership with Māori to improve outcomes for Māori and increase the participation of Māori in science and education at the highest levels. Part of this is making space for Māori knowledge in our broader society. Of course, recognising the considerable intrinsic value of Mātauranga Māori does not imply that all Māori knowledge intersects with science, nor does it suggest all research projects can sensibly incorporate elements of Māori knowledge. Disagreements about scope and definition of Mātauranga Māori will remain, partly because legitimate differences exist within Māoridom – as they do within all knowledge communities on many issues.

Supporting the recognition of Mātauranga Māori plays an important part in a wider effort to improve participation and reduce inequity within our scientific communities. By creating an environment where Māori participants are respected and Māori knowledge can contribute, we are more likely to be able to unlock potential benefits to everyone in New Zealand as well as the rest of the world.

Does including mātauranga in education mean teaching myths as science?

We would like to emphasize in the strongest possible way that the answer to this question is NO. Due to its orally transmitted nature, some important parts of Mātauranga Māori have been designed to be preserved and communicated in mythological language. However, the contents

of these mythological stories often include local knowledge of the natural world as well as ideas on health and well-being. Some of this knowledge can inform modern scientific inquiry – a process that has begun (see for example, Science Learning Hub (2009)), and can be woven together with other knowledge systems to create new knowledge. Embedding scientific discussion in contextually relevant Mātauranga Māori is a positive way to engage Māori audiences and increase Māori participation in science. For example, the Pūhoro programme run for secondary students has been very successful in increasing the participation of Māori rangatahi (young people), by partnering related areas of Mātauranga Māori and science (Pūhoro STEMM, 2022).

Is science objective?

Science consists of many disciplines and is studied by various methods that have evolved over time (Cleland, 2001). In its basic form the practice of scientific research involves observation, hypothesis, theory and experimentation. Although this would seem to drive production of indisputable facts, most major scientific discoveries have been fiercely contested before being accepted by most scientists (see some examples here Bryson (2004), Singh (2005)). One reason for the time it usually takes for a new discovery to be accepted is that scientists are trained to be sceptical and critical. Often the criticism of a new discovery is justified and it takes time to convincingly demonstrate why a new theory/hypothesis is best. It should also be recognised that the scientific process, including the critique of peer review, is not fully objective and is impacted by the lived experiences of the scientists themselves, who are people brought up within a certain culture and have biases that are inherent to the way we think (Kahneman, 2012). Many of the institutions within which science is carried out are themselves built on colonial foundations with racism and elitism part of their history. Unfortunately, biases have been shown to exist in the practice of science throughout its history (500 Women Scientists Leadership, 2020). However, if we acknowledge biases and understand how they arise, we can attempt to counter them and alter the culture of our institutions to encourage and accommodate diversity. Ensuring a diverse participation in scientific research can also help reduce biases.

A vision for New Zealand

We would like to close this article with the wisdom contained in a quote from Dame Whina Cooper (New Zealand Herald, 2016, Radio New Zealand, 2019): “*The seed I would like to plant in your heart is a vision of Aotearoa where all our people can live together in harmony. We must learn from each other and share the wisdom from each culture. We need the knowledge the Pākehā brings from all over the world as well as the sense of belonging and whakapapa of the Māori. The separate paths our people have trod can unite in a highway to the future that is built on the best of both. Māori and Pākehā, alone and divided, cannot build a secure and happy future for Aotearoa. We have to appreciate the best in each other and at the highest levels share our knowledge and vision. Look back to appreciate the past, but look forward to advance what is missing.*”

References

- 500 Women Scientists Leadership (2020), ‘Silence is never neutral; neither is science’.
<https://blogs.scientificamerican.com/voices/silence-is-never-neutral-neither-is-science/>
- Bryson, B. (2004), *A Short History of Nearly Everything*, Broadway Books.
- Cleland, C. E. (2001), ‘Historical science, experimental science, and the scientific method’, *Geology* **29**(11), 987–990.
[https://doi.org/10.1130/0091-7613\(2001\)029<0987:HSESAT>2.0.CO;2](https://doi.org/10.1130/0091-7613(2001)029<0987:HSESAT>2.0.CO;2)
- Kahneman, D. (2012), *Thinking, Fast and Slow*, Penguin: Psychology, Farrar, Straus and Giroux.
- New Zealand Herald (2016), ‘Twelve questions: Dame claudia orange’.
<https://www.nzherald.co.nz/kahu/twelve-questions-dame-claudia-orange/I6XOY66B3QDDKWJD4JXXYVRXFU/>
- New Zealand History (2021a), ‘Māori land loss, 1860-2000’.
<https://nzhistory.govt.nz/media/interactive/maori-land-1860-2000>
- New Zealand History (2021b), ‘New zealand’s 19th-century wars’.
<https://nzhistory.govt.nz/war/new-zealands-19th-century-wars/introduction>
- New Zealand History (2022), ‘Te wiki o te reo māori - māori language week’.
<https://nzhistory.govt.nz/culture/maori-language-week/history-of-the-maori-language>
- OECD (2022), ‘Does inequality matter?’.
<https://www.oecd.org/wise/does-inequality-matter-3023ed40-en.htm>
- Parke, E. and Hikuria, D. C. H. (2021), ‘Let’s choose our words more carefully when discussing mātauranga māori and science’.
<https://theconversation.com/lets-choose-our-words-more-carefully-when-discussing-matauranga-maori-and-science-165465>
- Pūhoro STEMM (2022), ‘Pūhoro stemm’.
<https://www.puhoro.org.nz/>
- Radio New Zealand (2019), “not one more acre’: The mana of dame whina cooper’.
<https://www.rnz.co.nz/national/programmes/afternoons/audio/2018705746/not-one-more-acre-the-mana-of-dame-whina-cooper>
- Radio New Zealand (2020), ‘Rnz: This pākehā life, alison jones (interview)’.
<https://www.rnz.co.nz/national/programmes/ninetono/audio/2018766413/this-pakeha-life-alison-jones>

Science Learning Hub (2009), ‘Rebekah’s research on fungi’.
<https://www.sciencelearn.org.nz/videos/766-rebekah-s-research-on-fungi>

Science Learning Hub (2022), ‘Mātauranga māori and science’.
<https://www.sciencelearn.org.nz/resources/2545-matauranga-maori-and-science>

Singh, S. (2005), *Big Bang: The Origin of the Universe*, HarperCollins.

Stats NZ (2022a), ‘Stats nz: Māori ethnic group’.
<https://www.stats.govt.nz/tools/2018-census-ethnic-group-summaries/m%C4%81ori>

Stats NZ (2022b), ‘Toiora pāpori | māori social wellbeing’.
<https://www.stats.govt.nz/topics/toiora-papori-maori-social-wellbeing#key>

Te Papa Tongarewa (2008a), ‘The content of the treaty of waitangi’.
<https://www.tepapa.govt.nz/discover-collections/read-watch-play/maori/treaty-waitangi/treaty-close/content-treaty-waitangi>

Te Papa Tongarewa (2008b), ‘The full text of te tiriti o waitangi | the treaty of waitangi’.
<https://www.tepapa.govt.nz/discover-collections/read-watch-play/maori/treaty-waitangi/treaty-close/full-text-te-tiriti-o>

Te Papa Tongarewa (2008c), ‘Two parties, two understandings: What does the treaty of waitangi mean?’.
<https://www.tepapa.govt.nz/discover-collections/read-watch-play/maori/treaty-waitangi/treaty-close/two-parties-two>

We invite contributions to a Frequently Asked Questions (FAQ) which we plan to develop on this topic. Please email questions to moderator@scientists.org.nz.

We will endeavour to compile questions and respond in a FAQ page.
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