

Defending science from what?

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The seven professors who wrote a letter to the Editor of the *New Zealand Listener* (Clements et al., 2021) present themselves as ‘defenders’ of science, but how valid, really, is this claim? Three of the authors published an earlier version of the letter, which also used the term ‘defence of science’ in its title (Corballis et al., 2019). This title phrase ‘defence of science’ implies these scholars believe science is under attack; indeed, the main point of both letters is to issue a warning that science is being attacked by Mātauranga Māori, or by those who advance the claims of Mātauranga Māori. The publication of these claims in the *Listener* has whipped up a media frenzy and heated public debate reminiscent of a ‘moral panic’ (Goode & Ben-Yehuda, 2009). In response, strong disapproval of the letter’s content was expressed in a statement by the Vice-Chancellor of the university where all these professors are either working or emeritus (Freshwater, 2021), and an open letter signed by more than 2,000 academics and others declared that Mātauranga Māori definitely IS science (Sowman-Lund, 2021). This editorial digs below the surface of this rhetoric, to examine what is really going on in this debate, and why it matters.

My words, weaponized

The first paragraph of the *Listener* letter provides the ‘data’ or evidence that has convinced these seven senior academics that science is under attack by (or using) Māori knowledge. This evidence consists of two sentences: one refers to the Ministry of Education’s commitment to parity for Mātauranga Māori, now a principle of national education policy. The second sentence and key quote in that paragraph is inaccurately attributed to “a new [NCEA] course” but using Google I quickly located the source: a working document that is part of a review, as yet incomplete, of the original set of NCEA Achievement Standards written off *Te Marautanga o Aotearoa*, which is the Māori-medium school curriculum and partner document to NZC, the *New Zealand Curriculum*. Finding the source document allowed me to identify and confirm my (co)-authorship of the words quoted in the letter, written during my tenure in past decades

on the team developing Pūtaiao NCEA assessment materials. It is amazing to me, having spent over 25 years teaching and researching the relationship between science and Māori knowledge through Pūtaiao or Māori-medium science education, to see the debate blow up the way it has over this letter. The fact that sentences which I had a large hand in crafting have been taken out of context and weaponized in this way gives me, I believe, both the right and responsibility to reply through this editorial, and a unique perspective from which to comment.

Science is not under attack

It is important to clarify that the impression given in the letter of (Māori) people (like me, perhaps) who are actively scheming and working to bring science down is completely false and fictitious. The premise of this editorial has turned out to be extremely personal, so let me respond, for a moment, from a personal level. I was very young when I realised that in the core of my being I love nature, so therefore I love science, which studies nature, in the way anyone loves any topic: we want to know all about it, what makes it tick, its history and philosophy, its greatest successes and failures. For me, to critique science is not an attack but an act of love: I want science to be better, because only at its best can science give humans its best version of the truth about our world. Honest critique is at the core of the knowledge criteria of science (I will return to this point below). One problem in this debate is the use of the word ‘science’ in isolation: this short, simple word is so vast and multiplicitous in coverage that its use as if it were a single thing or idea, as in the *Listener* letter, is in itself misleading.

It is true that Māori knowledge has been left outside the gates of the local universities, or at least has entered through the back door, as it were. The academic disciplines have defined themselves by such acts of intellectual exclusion, and the boundary between science and Indigenous knowledge has historically helped science to define itself. All that most New Zealand non-Māori people know about Māori knowledge comes from the caricatures promulgated in schoolbooks and public media, which prop up a sturdy hierarchical binary in which everything Māori is inferior to everything Pākehā/British/European. Most of the seven professors who co-signed the *Listener* letter, especially those in science, may never have read any books or journal articles of serious scholarship on Māori knowledge. Their basis for supporting the enormous claims in the letter is maybe about average for an educated White person who grew up in New Zealand, inevitably influenced by these distorted (racist) versions of the relationship between science and Māori knowledge.

The seven professors are expert in their disciplines (Biological Sciences, Psychology, Philosophy, Education, and Psychological Medicine) but none of them profess public expertise in the study of Māori knowledge: their claims, by definition, therefore, are based on lay knowledge of the matters they are proclaiming. Some of them may have regretted co-signing the letter, as suggested by the fact that one announced his resignation from his Dean role, a few days after the scandal broke. This resignation is an example of the real-world consequences of such a letter. So we may conclude that most or all of the seven professors were making judgemental claims about Māori knowledge that were well outside their professional brief - but the second, more interesting, question to ask is: What do they actually know about science?

The gap between science and philosophy of science (or, on not asking the fish to describe the sea)

The gap between science, science education and the philosophy of science has been acknowledged for many decades (Charlesworth, 1982; Davson-Galle, 2008; Duschl, 1985; Sorell, 1991). As time has gone on there has been less and less chance for working scientists to take time to learn anything about the philosophy of science, compared with, say, 50-100 years ago. The *Listener* letter uses a carefully selected set of points with which the ‘average Joe’ scientist or science graduate would easily agree, perhaps not even seeing their partial nature: “science is universal; science itself does not colonise; science is informed by the efforts of many nations; we increasingly depend on science” (extracted from Clements et al., 2021, p. 4). To re-consider these points made in the letter, while bearing in mind the vast range of activities under the umbrella of one innocuous seven-letter word, helps us to begin to understand the ideological work this word ‘science’ does, concealing more than it reveals.

The question of the relationship between science and Māori knowledge is not a binary, yes-no, either-or kind of question. This debate is not a win-lose affair nor a zero-sum game. In signing this letter, the professors have betrayed science in its own terms. Instead of engaging with the ideas in the quote, they simply condemn them and revile the writers for “enourag[ing] mistrust of science” (Clements et al., 2021, p. 4). This move uncovers the large logical contradiction in the letter, because if science is as powerful as they claim, then why are the professors so fearful on its behalf? The glaring lack of philosophical sophistication in the contents of the letter shows up its signatories.

What I'm talking about

I am *not* a 'folk-devil' (Cohen, 1972) as the seven professors who co-authored the letter seem to want to portray me as the (main) author of the words they revile. The phrase 'folk devil' was invented along with the concept of 'moral panic' in the seminal work by Stanley Cohen (1972) based on the history of the Mods and Rockers in the UK. According to moral panic theory, a 'folk devil' is an apparition conjured up by the creators of a moral panic, to throw shade on an imagined enemy of society. I am both amused and concerned that the *Listener* letter possibly conjures me as a Māori 'folk devil' and enemy of society who seeks to attack and bring down science.

The sentence quoted in the *Listener* letter as proof of the need to 'defend' science was from a section I largely wrote about the strand of the Pūtaiao curriculum that did not have a direct equivalent in the NZC Science learning area, on the history and philosophy of science. The sentence quoted was part of a description of the possible scope of studies of socioscientific issues, from a Māori perspective, by senior secondary students of Pūtaiao. To respond as fearfully as these seven professors, from the top science university in the country, to a single sentence that suggests taking a critical look at the involvement of science in colonisation of Māori, does the public face of science no favours at all. This failure in terms of academic standards explains the strong criticism of the letter that was expressed by the Royal Society, as well as many leading scientists and academics (May, 2021).

The *Listener* letter is so flawed that it could be argued to be of no real consequence, but is this a defensible conclusion? It is relatively rare for seven senior professors, mostly of science, to publish a letter to the Editor of the *Listener*. The volume and general quality of the ensuing debate could well leave the average citizen unconvinced: surely senior professors at the biggest most prestigious university in the country know what they are talking about?

The principles of freedom of speech and academic freedom underwrite the right of the seven professors to publish their opinion on the relationship between science and Māori knowledge. While I and others worked away over the years on the development of Māori-medium science education curriculum and assessment resources, it never occurred to us that others might pluck a few of our words out of context and use them in such antithetical, uninformed ways, absent of all ethical care, to no apparent good end. There are real threats to science in the world, but

Māori knowledge is not one of them. But by diverting their own efforts and the attention of others away from the reality of the debates between science and other forms of knowledge (think Trumpism), the letter has potential for having real detrimental effects on the interests of both science and Māori knowledge. In this way, even if unintentionally, such a letter has real racist effects, and harms us all. The VC thus acted correctly in distancing their employer university from their rhetoric. Kia ora mai tātou katoa.

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