July 31, 2021 NZH

In defence of science

A recent report from a Government NCEA working group on proposed changes to the Māori school curriculum aims "to ensure parity for mātauranga Māori with the other bodies of knowledge credentialed by NCEA (particularly Western/Pākehā epistemologies)". It includes the following description as part of a new course: "It promotes discussion and analysis of the ways in which science has been used to support the dominance of Eurocentric views (among which, its use as a rationale for colonisation of Māori and the suppression of Māori knowledge); and the notion that science is a Western European invention and itself evidence of European dominance over Māori and other indigenous peoples."

This perpetuates disturbing misunderstandings of science emerging at all levels of education and in science funding. These encourage mistrust of science. Science is universal, not especially Western European. It has origins in ancient Egypt, Mesopotamia, ancient Greece and later India, with significant contributions in mathematics, astronomy and physics from mediaeval Islam, before developing in Europe and later the US, with a strong presence across Asia.

Science itself does not colonise. It has been used to aid colonisation, as have literature and art. However, science also provides immense good, as well as greatly enhanced understanding of the world. Science is helping us battle worldwide crises such as Covid, global warming, carbon pollution, biodiversity loss and environmental degradation. Such science is informed by the united efforts of many nations and cultures. We increasingly depend on science, perhaps for our very survival. The future of our world, and our species, cannot afford mistrust of science.

Indigenous knowledge is critical for the preservation and perpetuation of culture and local practices, and plays key roles in management and policy. However, in the discovery of empirical, universal truths, it falls far short of what we can define as science itself.

To accept it as the equivalent of science is to patronise and fail indigenous populations; better to ensure that everyone participates in the world's scientific enterprises. Indigenous knowledge may indeed help advance scientific knowledge in some ways, but it is not science.

Kendall Clements
Professor, School of Biological Sciences, University of Auckland
Garth Cooper, FRSNZ
Professor, School of Biological Sciences, University of Auckland
Michael Corballis, FRSNZ
Emeritus Professor, School of Psychology, University of Auckland
Douglas Elliffe
Professor, School of Psychology, University of Auckland
Robert Nola, FRSNZ
Emeritus Professor, Department of Philosophy, University of Auckland
Elizabeth Rata
Professor, Critical Studies in Education, University of Auckland
John Werry
Emeritus Professor, Department of Psychological Medicine, University of Auckland

(endorsed by KAB).

2

Vice-Chancellor comments

26 July 2021

University news

A letter in this week's issue of The Listener magazine from seven of our academic staff on the subject of whether mātauranga Māori can be called science has caused considerable hurt and dismay among our staff, students and alumni.

While the academics are free to express their views, I want to make it clear that they do not represent the views of the University of Auckland.

The University has deep respect for mātauranga Māori as a distinctive and valuable knowledge system. We believe that mātauranga Māori and Western empirical science are not at odds and do not need to compete. They are complementary and have much to learn from each other.

This view is at the heart of our new strategy and vision, Taumata Teitei, and the Waipapa Toitū framework, and is part of our wider commitment to Te Tiriti and te ao principles.

I believe Aotearoa New Zealand has a unique opportunity to lead the world in this area. The University of Auckland, as this country's largest research institution, should be and will be at the forefront of this exciting exploration.

Professor Dawn Freshwater
Vice-Chancellor

3

Knowledge and science

UTL 7/8/21

The authors of the "In defence of science" letter (July 31) use their privilege to perpetuate a cherry-picked history of science, advancing an argument that suppresses rather than promotes science education.

Invoking the lineage of science from Mesopotamia to Europe is a retroactive continuity created by Europeans; many of the discoveries from this lineage were replicated elsewhere in time and place. Aztecs, Inca, Iroquois, Bantu and Māori (to name a few out of thousands) all developed advanced knowledge and culture independent of this lineage, but were never invited to contribute to the Western institution of science at their zenith. Western science classified these cultures as indigenous, trivialising their knowledge and enabling their peoples, lands and waters to be consumed by colonisation. Their taonga were stolen to be stored and displayed in Western scientific institutions, enabling universities and museums to build power and prestige that they are reluctant to now share.

If the NCEA curriculum socialises the idea that scientific curiosity and inspiration occurred in many cultures at different times and place, that might encourage children of all backgrounds to see that same potential in themselves, rather than accessed via the university gatekeepers represented by the authors. Perhaps this is why they feel threatened.

Paul Bruere
(Porirua)

How welcome was the letter from the senior academics. As they point out, the science curriculum that the Government is proposing is ideological. It appears to have been drafted by "social theorists".

Jeremy Agar
(Lyttelton)

Thanks for publishing the letter from the distinguished scientists, criticising the proposed NCEA epistemologies.

It appears we are heading towards a strange alternative reality, where facts and science are questioned at the very moment we are having to deal with anti-vaxxers.

Neville Cameron
(Coromandel)

Reading the co-signed letter defending science, one would think science has played no part in polluting the planet and destroying the atmosphere. The only question I have for this panel of academics is, "Where are the physicists?" After all, when you combine numbers in an understanding way, you end up with ... just more numbers.

Simon Rolleston
(Christchurch)

It is somewhat worrying to find a group of such stellar University of Auckland academics fabricating such a leaky waka in their letter. The waka has clearly hit a submerged log and sprung a leak in its second-to-last paragraph where it confuses science with knowledge.

Here are some of its argumentative flaws. No system of knowledge (indigenous or otherwise) discovers "empirical, universal truths". It is the process of scientific inquiry (verb) that produces knowledge (noun). No body of knowledge (disciplinary, cultural, or otherwise) can claim to encapsulate universal truths. All knowledge is provisional. The strength of any discipline is in its recognition of this, since it is the provisionality that fuels the process that generates new knowledge.

The other large holes in the waka I would draw attention to are the suggestions that 1) there is only one model of scientific inquiry (when, in fact, all disciplines have their own methodologies); 2) models of "scientific inquiry" are somehow not culturally constructed in some way, and 3) indigenous people are somehow incapable of developing their own models of scientific inquiry.

So, by what process did Māori learn how to grow kūmara and navigate by the stars? Did the knowledge just happen? Oh yes, and how did Māori know that tōtara was a good wood for making waka?

Terry Locke
Emeritus Professor, Arts and Language Education
University of Waikato

Aug 14th, 2021 NZL

(4)

The pursuit of knowledge

In the otherwise excellent article "The meaning of science" (August 7), writer Peter Griffin quotes me as follows: "A huge slug of the science budget is now going to be spent on whatever mātauranga Māori is," he says. "I've got no idea. I've spent a couple of years trying to find out."

Without the full conversation, the meaning of what I was saying here is lost. When I said, "I've got no idea", I was referring to not knowing how mātauranga Māori research is assessed as part of science funding and science teaching.

This is a problematic area, because mātauranga Māori represents the entire corpus of Māori knowledge. Some of this is relevant to science, or generated consistent with science, as [Māori studies senior lecturer] Dan Hikuroa says in the article, but some of it is not. Currently, there is a lack of clear definition and understanding of what is relevant and what is not in the context of science funding and teaching.

It is this lack of clarity around the relationship between mātauranga Māori and science that should be concerning for researchers, funders, educators and students.

Kendall Clements
Professor, School of Biological Sciences, University of Auckland

The "In defence of science" letter (July 31), signed by a number of University of Auckland professors, makes claims about the relationship between the scientific project and indigenous knowledge; ie, that indigenous knowledge "falls far short of what we can define as science itself".

These professors, however, are biologists, psychologists, philosophers and educationalists, not experts in indigenous ways of knowing. It's a basic tenet of scientific inquiry that one should not pass judgment on matters that one has not studied in depth and detail.

Those who would defend science must uphold its standards. Dismissing other knowledge systems in advance of rigorous inquiry casts doubt on the scientific project itself, giving an impression of prejudgment (literally, prejudice).

Faced with an unprecedented array of "wicked problems" – climate change, rising seas, collapsing ecosystems and fractured societies – scientific disciplines are struggling to rise to the challenge.

Open rather than closed minds are needed in the scientific community and a willingness to experiment beyond disciplinary and cultural silos.

Science is based on curiosity, love of learning and the rigorous testing of truth claims.

As Dan Hikuroa has said, it is "a method for generating knowledge, and all knowledge generated using that method", including aspects of indigenous knowledge.

In Aotearoa New Zealand, experts in indigenous knowledge are making significant contributions to new ways of thinking across a range of fields. This is fascinating and exciting and holds great promise.

At the same time, academic freedom brings with it a responsibility to uphold scientific standards.

The signatories to the July 31 letter made claims about indigenous knowledge that far exceed their expertise in this field of inquiry. In itself, this lacks scientific merit and falls far short of what we can define as "science".

Dame Anne Salmond, ONZ, DBE, FBA, FRSNZ
Distinguished professor, Department of Māori Studies, University of Auckland

The response of the University of Auckland vice-chancellor, disagreeing with the "In defence of science" letter, may have deleterious effects. Criticising science as being Eurocentric and as suppressing Māori will discourage some young Māori from taking science-related courses, such as engineering and medicine, thus creating further unwanted inequality.

Bruce Hadden, CNZM
Honorary associate professor, University of Auckland

What is commonly referred to as "traditional knowledge" is neither more nor less than humans recognising and naming animals and plants in their immediate environment and deriving some understanding of food and health benefits or harmful aspects. This activity marks the beginning of science and was the process whereby the ancients in Egypt, Greece and China, among others, derived their knowledge systems, which eventually evolved into what is recognised today as the Western model of science.

The recent furore and debate concerning whether Māori traditional knowledge is somehow equivalent to what is universally understood as science certainly need exploration. Today's scientists, everywhere, use standardised methods in their profession, formulating and testing hypotheses, which are either falsified or accepted. Results are then published after peer review. No other satisfactory system exists or has replaced this universally accepted methodology. To somehow look for equivalence with "traditional knowledge" is like comparing calcium carbonate and the curd of milk coagulated by rennet.

I am dismayed that the seven academics who tried to open the debate have been criticised so severely.

For proponents and opponents in any debate, free expression of opinion, without facile dismissal and misrepresentation of facts, must be encouraged. The current trends to fetter free speech by "de-platforming" and "cancelling" must be resisted to avoid insidious totalitarianism.

I congratulate the *Listener* for providing a forum for this important question to be expressed and argued, especially when the education of our children and grandchildren is at stake.

Dr Allen Heath
(Lower Hutt)

NZL 21/8/21

That Jesus of Nazareth was the Son of God, born to a virgin, performed miracles in his lifetime and rose from the dead after crucifixion is believed by some people, disbelieved by others. That one who breaks tapu, or on whom a mākutu (curse) is placed by a tohunga, will suffer illness or even death is likewise believed by some and not by others. These are matters of faith and neither is susceptible to scientific proof or disproof.

That my university should have an official position on the Divinity of Jesus would be as surprising and shocking as it is to discover, from Vice-Chancellor Dawn Freshwater's recent statement, that it has an official position on the efficacy of matauranga Māori in the study of science in our schools. We won't correct our colonialist mistakes by making new ones.

CK Stead, ONZ, CBE, FRSL
Professor Emeritus, University of Auckland

NZL 4/9/21

RIGOROUS DEBATE

Hats off to former *Listener* editor Pamela Stirling. Unlike University of Auckland Vice-Chancellor Dawn Freshwater, who tried to shut down discussion on the meaning of science, Stirling instead published a range of viewpoints. Surely Freshwater should be at the forefront of rigorous debate rather than wallowing in stagnant water. Is this the thin edge of the wedge of free speech?

Glennys Adams
(Waiheke Island)

RACE AND FREEDOM OF SPEECH

The withdrawal of a speech by Distinguished Professor Dame Anne Salmond to the 16th Congress of the Federation of Asian and Oceanian Biochemists and Molecular Biologists is the latest example of cancel culture. Twitter critics claimed her race disqualified her from speaking about mātauranga Māori and molecular science. One of the Salmond objectors has also referenced race in a recent tweet, saying that "white male boomer profs" should be the first to go in any university staffing cuts.

The great irony is that such race discrimination goes largely unchallenged owing to the fear of being labelled a racist. That fear is commonplace in all public institutions, not only our universities. Yet the racial ideology of culture (culturalism) actually allocates individuals according to "blood" – the genetic ancestry of a social group. Personal, social and political identity is fixed in this ancestry. Democracy requires the opposite. Its political category is universal humanity.

A paralysing silence prevents the urgent discussion about the role of this ideology in creating ethno-nationalism. It is time to break this silence. But culturalism creates a barrier to open speech by conflating the speaker with the message so that only those "of the blood" are permitted to speak. We live in a democracy and should be free to speak publicly about issues that affect us all. Culturalism may not allow this, but democracy does.

Elizabeth Rata
Professor, School of Critical Studies in Education, Faculty of Education and Social Work, University of Auckland

LETTER OF THE WEEK

NZL 18/9/21

6

Myths Do Not Belong in Science Classes: Letter to the Royal Society of New Zealand

Education Original Science

Dec 4, 2021

Dr Roger Ridley
Royal Society of New Zealand

Dear Dr Ridley

I have read Jerry Coyne's long, detailed and fair-minded critique of the ludicrous move to incorporate Maori "ways of knowing" into science curricula in New Zealand, and the frankly appalling failure of the Royal Society of New Zealand to stand up for science – which is, after all, what your Society exists to do.

The world is full of thousands of creation myths and other colourful legends, any of which might be taught alongside Maori myths. Why choose Maori myths? For no better reason than that Maoris arrived in New Zealand a few centuries before Europeans. That would be a good reason to teach Maori mythology in anthropology classes. Arguably there's even better reason for Australian schools to teach the myths of their indigenous peoples, who arrived tens of thousands of years before Europeans. Or for British schools to teach Celtic myths. Or Anglo-Saxon myths. But no indigenous myths from anywhere in the world, no matter how poetic or hauntingly beautiful, belong in science classes. Science classes are emphatically not the right place to teach scientific falsehoods alongside true science. Creationism is still bollocks even it is indigenous bollocks.

The Royal Society of New Zealand, like the Royal Society of which I have the honour to be a Fellow, is supposed to stand for science. Not "Western" science, not "European" science, not "White" science, not "Colonialist" science. Just science. Science is science is science, and it doesn't matter who does it, or where, or what "tradition" they may have been brought up in. True science is evidence-based not tradition-based; it incorporates safeguards such as peer review, repeated experimental testing of hypotheses, double-blind trials, instruments to supplement and validate fallible senses etc. True science works: lands spacecraft on comets, develops vaccines against plagues, predicts eclipses to the nearest second, reconstructs the lives of extinct species such as the tragically destroyed Moas.

If New Zealand's Royal Society won't stand up for true science in your country who will? What else is the Society for? What else is the rationale for its existence?

Yours very sincerely

Richard Dawkins FRS
Emeritus Professor of the Public Understanding of Science
University of Oxford

Share

7

NZL 13/11/21

FOOD FOR THOUGHT

It's fashionable to speak with contempt of anything introduced here by foreign "colonisers", but I think Julian Fitter (*Letters*, October 30) goes a bit far.

Here's a brief exercise. Make a list of the vegetables you eat in a week or 10 days. Then remove from the list any of those grown in a "colonial garden" – ie, introduced here from another country. Then try to make an appetising meal out of what's left. Then do it again the next night and the next.

Want to have another think about that "colonial" garden?

Graham McGrath
(Whanganui)

It is disappointing that the "Way to grow" (October 16) articles prompted a letter politicising plants and criticising "colonial shackles". What history does tell is cultivation of plants provides living creatures with sustenance. Wheat, barley and rice give us sushi, pasta, bread and pastry. Orchards give us fruit. Vegetables provide necessary nutrients for well-being. To make food palatable, herbs add flavour. Most herbs like thyme, rosemary and oregano include antibacterial and antiseptic properties for well-being. Sage gets its name from the Latin derivative "to save".

All of these, and many of the plants suggested in the articles, are indeed foreign. And most of these plants rely on insect pollination that includes imported species for needed bee populations. Our native plants are often white flowered and pollinated only by moths. Most leaves of native varieties are inedible.

Let's keep political agendas out of common-sense sustainability, bend down, connect with the soil and get earthed.

Marilyn Wightman
Life member, Herb Federation of NZ
(Feilding)

NZL Dec 25, 2021

Knowledge and science

Warm thanks to Professor Richard Dawkins (*Letters*, December 18) for what is the best letter I've read this year. The craven idiocy of the Royal Society Te Apārangi in supporting the vacuous claims of Māori "knowledge" bearing some nebulous kinship with science represents the nadir of the society's integrity. Let's go back to, say, 1964. It was a good year for most of us, with no anti-vaxxers and very few Creationist Christians (you could actually argue about religion, which we often did as university students), and although climate change was not on our radar, the more thoughtful of us had an uneasy feeling that there was major trouble ahead.

Jeff D Upton
(Darfield)

At last, the voice of sanity. As a retired research scientist, I participated in a number of useful conferences hosted by the Royal Society. Unfortunately, the society appears to have lost its way since. I hope it will reconsider its position in light of Professor Dawkins' words.

Basil Stanton
(Blenheim)

Despite the understandably annoyed tone of Dawkins' letter, he is correct. Science is a tool for all humanity, and while it has some of its origins in Europe, a millennium ago, you might have bet on the Middle East, India or China as the more likely principal origin of the Enlightenment. They were certainly more scientific at the time.

All cultures, including Europe's, had traditional knowledge and explanations for events, some correct and some that don't pass muster due to a lack of evidence. Science applies the same method to all.

It can't be that we Kiwis have been lucky enough to find ourselves in the only place where traditional knowledge is equivalent. If that were so, then, by extension, all traditional knowledge from hundreds of cultures would be equivalent, including that of earlier Europe (leeches, anyone?).

It is indeed shameful that not only has NZ's Royal Society abandoned its core principle, but also that so many eminent scientists have gone along with this. Interestingly, I gather the society rightly criticised the proposed new history curriculum for its lack of rigour and reasonableness. Perhaps there's hope yet that if it can see the flaws in others, it will be able to spot its own.

Gerard Dunne
(Auckland)