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

GP SHORTAGES

One way the Government could immediately address the GP shortage ("Burnout", July 24) is to work with the Medical Council of New Zealand to fast-track foreign-doctor registration, which is apparently outrageously difficult and takes a ridiculously long time.

C Johnstone

(Auckland)

I know of three overseastrained doctors who are working in other jobs. When I asked one (a rest-home carer) why he had not gone through the processes required to register here, he said he had to earn a living for his family and could not afford the fees and loss of paid working time.

Surely we could set up a scheme whereby we retrained and assessed these doctors while paying them a salary? We could then bond them to work as GPs (or as hospital doctors) for a set term. Any who failed the assessment would obviously be a cost to the system, but that would be offset by the benefits from those who succeeded.

I am also interested in the example set by the Fred

Hollows Foundation. In this country, cataract operations are done by doctors with full medical training, but is it necessary to understand the anatomy of limbs, for example, to operate on a cataract? Maybe we should be training highly specialised technicians to do a lot of the jobs that doctors now do, releasing doctors to diagnose and treat patients whose needs are less clear.

Carol Dossor

(Napier)

A good GP is a wonderful resource, but the decline in number and availability is now long-standing and unlikely to change even if another medical school were to be created.

Nurse practitioners are experienced registered nurses with an additional master's degree who are legally able to deliver exactly the same diagnostic, prescribing, referral and management of presenting conditions as a GP. This country has well over 500, some of whom have been in their position for 20 years.

Importantly, nurses are the only profession who remain well distributed throughout the country, and so with a relatively small investment could become nurse practitioners in the rural areas and small towns in which the shortage is being felt most keenly.

Letters to the editor {listenerletters@aremedia.co.nz} The Editor, NZ Listener, PO Box 52122, Kingsland, Auckland 1352

- Letters must be under **300** words. Preference is given to shorter letters.
- A writer's full residential address is required on all letters, including emails.
- A phone number can be helpful.
- Pen names or letters submitted elsewhere are not acceptable.
- We reserve the right to edit or decline letters without explanation.

Knowledge and science

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.

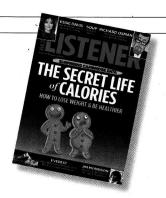
Neville Cameron (Coromandel)

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.



BOOK GIVEAWAY

Writer and *Listener* columnist Charlotte Grimshaw will speak about her powerful memoir, *The Mirror Book*, at a *Listener*-sponsored session in conversation with Stephanie Johnson at WORD Christ-church Festival from 11.30am to 12.30pm on August 28 at The Piano.

To mark the occasion, we have three copies of *The Mirror Book* to give away.

To enter the draw, send your name and address to "Mirror Book Giveaway" at listenergiveaways@aremedia.co.nz, or to NZ Listener, PO Box 52122, Kingsland, Auckland 1352. Entries close at midnight on Friday, August 13, 2021.

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 * See the article on this subject,

* See the article on this subject, page 16.

CHANGES TO GENERAL PRACTICE

Prior to 1995, any medical graduate could hang out a shingle and start working as a GP. In 1995, the law changed, though, and intending GPs were required to do several years of specialist training and exams in line with other medical disciplines.

Letters to the editor {listenerletters@aremedia.co.nz} The Editor, NZ Listener, PO Box 52122, Kingsland, Auckland 1352

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The meaning of science

A controversial letter from seven academics has drawn public attention to the proposal to include Māori knowledge in the NCEA science curriculum, but not everyone agrees with their stance. by PETER GRIFFIN • illustration by ANTHONY ELLISON

n his semi-autobiographical book Adventures of a Psychologist, award-winning researcher and author Michael Corballis suggests universities "should be dangerous places", intellectually speaking, anyway.

"They are where ideas are, or should be, debated," writes the University of Auckland emeritus professor, who has spent much of his career researching experimental psychology and cognitive neuroscience.

"They are where religion clashes with atheism, business with philosophy, universalism with nationalism."

University campuses are also where the broadening culture wars are raging, often testing the definition of academic freedom in the process. Corballis and a handful of his colleagues, most of them well advanced in their careers or retired from teaching altogether, have just emerged from their own brief but intense skirmish.

In a letter published in the July 31 Listener, the group, which includes respected diabetes researcher Professor Garth Cooper; outspoken sociologist professor Elizabeth Rata; and psychology professor Douglas Elliffe, who was acting Dean of Science at the University of Auckland, wrote of their concern at proposed changes to the National Certificate of Educational Achievement (NCEA), the national qualification for secondary-school students.

The Ministry of Education is seeking "to ensure parity" between mātauranga Māori, which literally means Māori knowledge or wisdom, and other bodies of knowledge taught as part of NCEA, "particularly Western/Pākehā epistemologies".

The academics took issue with science being characterised as "Western" in nature as well as a plan to include, as part of course work, discussion on how science "has been used to support the dominance of Eurocentric views (among which [is] its use as a rationale for colonisation of Māori and the suppression of Māori knowledge)".

Public submissions on the changes close on August 13 and new subjects will be piloted next year, with the revised curriculum expected to be introduced in 2024-25.

DEFENDING SCIENCE

The letter was a forceful if carefully worded "defence of science" that 10 years ago would have barely caused a ripple. But times have changed. The decolonisation of science and the education system is under way in earnest as a matter of public policy. This band

"The society strongly upholds the value of mātauranga Māori and rejects the narrow and outmoded definition of science."

of academics, who have built their careers on the scientific method, appear to be swimming against a strengthening tide.

Their letter was published in the same week the University of Auckland changed its official name to Waipapa Taumata Rau, which Associate Professor Te Kawehau Hoskins, the university's ihonuku (pro vice-chancellor Māori), said was part of a vision and strategy aimed at creating a place "where te reo Māori can flourish and where mātauranga Māori and Te Tiriti o Waitangi are valued, fostered and protected".

The university's vice-chancellor, Professor Dawn Freshwater, emailed all staff, telling them the letter published in the *Listener* had "caused considerable hurt and dismay among our staff, students and alumni". She pointed out the academics were free to express their views, but they didn't represent those of the university.

"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," she wrote.

Three of the seven signatories to the Listener letter are fellows of the Royal Society Te Apārangi, the country's peak academy for science and the humanities.

"We will be reviewing this," the society's director of communications and outreach, Tarah Nikora, tweeted in response to the letter.

"And yes, the society does have a view on this. We do not support this narrative."

Two days later, the society's president and the chair of its academy executive committee issued their joint response. "The recent suggestion by a group of University of Auckland academics that mātauranga Māori is not a valid truth is utterly rejected by Royal Society Te Apārangi. The society strongly upholds the value of mātauranga Māori and rejects the narrow and outmoded definition of science," they wrote.

Corballis, aged 85 and with an extensive body of respectable work behind him, could now face formal judgment by his peers if an internet campaign urging people to make a complaint against him under the society's code of conduct gains any traction. A paper the academics submitted that expands on their arguments was last year rejected for publication in the Royal Society Te Apārangi journal.

"There's a bit of a sense of cancellation around it. But I can do this because I'm retired," he says.

The only public voice of support for those behind the letter has come, awkwardly enough given their desire to keep politics out of science, from Paul Goldsmith, National's education spokesperson and the former minister of science and innovation.

By defining science as "Western" in the NCEA proposal, he wrote in a press release: "Is the Government telling our children that the collective wisdom of all the cultures of the globe, over millennia and up to today, what we might call modern science, should be given no greater authority in the subject of science than the insights and traditions of one culture?"

"In practical terms, and in terms of limited class time, what does this mean? How will this help us reverse our declining relative performance in the global endeavour that the rest of the world calls science?"

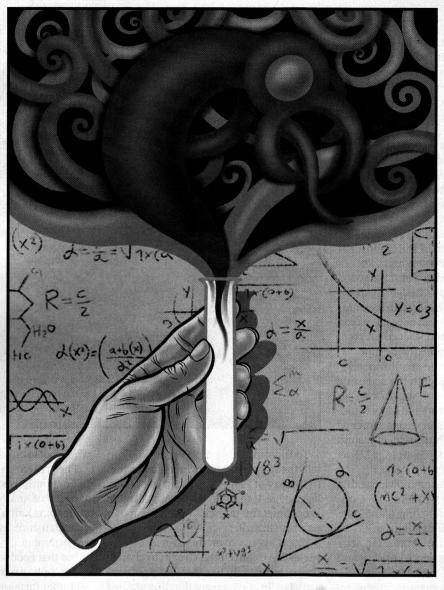
The latest National Monitoring Study of Student Achievement of Science showed just 20% of Year 8 students

in New Zealand were achieving at or above expectations.

The seven academics say the aim of their letter was to stimulate public discussion on the issue, which is, after all, what the Ministry of Education invited in releasing the technical document that outlined the proposed changes to NCEA and which had already received input from a wide range of academics and education experts.

Jackie Talbot, the ministry's group manager, early learning and student achievement, said in a statement that the phrase "Western science" was a working term and "would be adapted if feedback suggests it is not useful". The intention to have students ponder the colonising role of science isn't a ministry "policy or position", Talbot pointed out. But the ministry has already committed to mana ōrite mō tē mātauranga Māori (parity for Māori knowledge) within NCEA assessments.

"Once implemented, in Science, students



will be encouraged to compare and contrast a range of scientific methods, including traditional Māori ways of exploring, experimenting and understanding the natural world anchored in concepts such as whakapapa, whanaungatanga, mauri, tapu, noa and kaitiakitanga."

"How will this help us reverse our declining relative performance in the global endeavour that the rest of the world calls science?"

In Adventures of a Psychologist, Corballis acknowledges that the science that emerged as part of the Enlightenment in Europe in the 17th and 18th centuries hasn't been

entirely progressive in nature.

"Science may be partly responsible for global warming, but it may also have to fix it. Decolonisation has an idealistic, romantic ring, but even the indigenous may be unwilling to forgo their cell phones or, more importantly, their access to modern medicine."

We have much to thank for science, which borrows from many cultures, says Corballis, and risk fostering mistrust in it by teaching kids about how it became a tool of colonisation. A number of academics, he adds. share his views about what he sees as a postmodernist onslaught against science.

"I think a lot of university people have been afraid to say anything. I don't know if there's been much consultation

in a broad sense at all about mātauranga Māori."

Professor Kendall Clements, whose research at the university's School of Biological Sciences focuses on the nutritional ecology and evolution of fishes and who signed his name to the letter, says he and many of his colleagues are confused about the role mātauranga Māori is expected to play in existing scientific research programmes.

"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."

WEAVING OF KNOWLEDGE

What exactly is mātauranga Māori? By design, it has no one neat definition. It spans the Māori language itself, oral history outlining knowledge brought here by Polynesian ancestors, developed in Aotearoa over hundreds of years and adapted as

Māori came into contact with Europeans in the 19th century. It includes spiritual aspects, too, something that particularly irks some academics encountering it in the research context.

Its application across the science system today flows mainly from Vision Mātauranga, a policy created in 2005 by the then Ministry of Research, Science and Technology. It identified three strands to mātauranga Māori: the quest for better relationships between human societies and the natural environment, the "weaving of knowledge" across different domains and the revitalisation of the traditional knowledge bases of indigenous cultures.

"Scientific knowledge has superseded traditional Māori knowledge in many ways, however, mātauranga Māori contains suggestions and ideas that may yet make a contribution to research, science and technology," the ministry noted at the time.

"The idea that some mātauranga is generated consistent with the scientific method isn't even contentious," says Dan Hikuroa, a senior lecturer in Māori studies at Auckland, who started his career as a geologist and contributes widely around the research sector to mātauranga Māori research programmes.

"We have two bodies of knowledge that were generated independently. We can bring those together for some of the huge challenges we face," adds Hikuroa.

"It's about giving mana to the mātauranga and the science beside it and respectfully weaving them together."

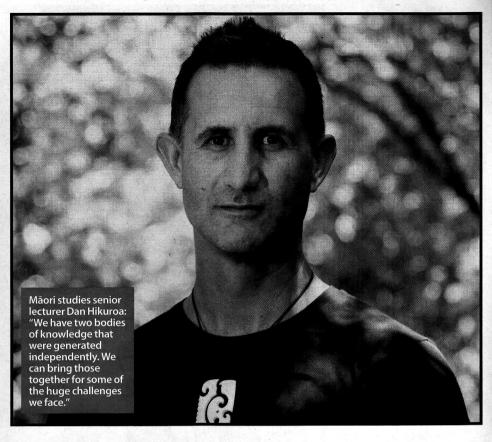
Hikuroa says he has given up on explaining mātauranga Māori concepts to some of his more sceptical colleagues on campus.

"They are a small minority," he says. "The rest of us have moved on. Our students are demanding it, not just the Māori ones."

In a recent report by the New Zealand Coastal Society on the role of mātauranga Māori in coastal management, Hikuroa writes that Māori knowledge has largely been ignored or disregarded by scientists and engineers "because it seemed to be myth or legend, fantastic and implausible".

Instead, Hikuroa describes it as a taonga tuku iho, a treasured gift handed down through generations. It can include observations and local knowledge, often recorded in the form of stories, song, place names and narratives.

For researchers immersed in empirical research, it can be hard to grasp. But Hikuroa says the key thing to understand is that mātauranga can simultaneously incorporate the metaphorical and the literal.



To illustrate his point, Hikuroa often tells the story of the taniwha's flicking tail. In the Bay of Plenty township of Matatā, legend has it that the Waitepuru Stream is occupied by taniwha in the form of a ngārara (lizard).

Flood events over the course of centuries have caused the stream to change course repeatedly, like the flicking of a lizard's tail. In 2005, severe flooding washed

"It's about giving mana to the mātauranga and the science beside it and respectfully weaving them together."

away local roads and destroyed nearly 100 homes, causing tens of millions of dollars worth of damage.

But local marae were unaffected by the flooding, because pūrākau (ancient legend) warned of the "flicking tail of the ngārara". A legend incorporated geomorphology and lessons for disaster-risk reduction, writes Hikuroa.

"It is both the evidence and the policy, and decisions about where to build and

where not to build marae were based on it."

The research community appears to be quietly respectful of the spiritual aspects of mātauranga Māori, which underpins kaitiakitanga (protection and guardianship), as a way of managing the environment.

But that goodwill may be put to the test as concepts of mauri (life force or essence) and other forms of energy are more widely discussed in research institutions and in schools.

The debate over teaching creationism in our schools and institutions hasn't generated the heat here that it has in the US, where the Supreme Court has ruled that teaching it in public schools is unconstitutional. Clements has pondered what it might mean for the lectures and lessons he gives.

"My first response to colleagues when discussing the inclusion of mātauranga Māori in our science curriculum a few years back was to ask how I should respond to future students who ask why I have not discussed creationism in my evolution teaching," he says.

"My response in the past was that this was a Faculty of Science course, and so I was teaching it from a science perspective while acknowledging that there are other viewpoints."

The signatories to the Listener letter I





equated with science, which they see as a universal language crucial to our understanding of the world and, increasingly, the answer to our problems.

FUNDING MĀTAURANGA

The science-funding system has embraced mātauranga Māori. From the Marsden Fund, the country's largest blue skies research fund, to the Ministry for Business, Innovation and Employment's contestable research funds, to the National Science Challenges, mātauranga Māori is a consistent theme, with research dollars tagged to it.

Now, the embedding of Maori knowledge into the research sector is being extended to the Performance-Based Research Fund (PBRF), the key source of government funding for universities and other tertiary institutions that offer degrees.

Earlier this month, the Tertiary Education Commission revealed the results of a lengthy review of the PBRF, which typically resets the agenda for funding of research and academics every six years.

The \$315 million funding allocated for 2020-21 is divvied up based on the quality of institutions' academic research, the level of external research funding they are able to attract and the number of students undertaking postgraduate research.

accused of gaming the system to attract a larger slice of the funding pie.

Among the changes to the fund is a greater focus on mātauranga Māori research, which will now be given a research funding weighting in the PBRF system of 3, up from 1. The most expensive research areas, such as clinical medicine and engineering, have a research weighting of 2.5.

The net result will be a greater share of PBRF funding flowing into mātauranga Māori research programmes. Indeed, Government modelling of the changes has revealed that institutions with a high proportion of Māori researchers and a strong focus on mātauranga Māori will see their funding increase.

Te Wananga o Aotearoa, for example, could see its funding increase from \$174,149 to more than \$1 million. The University of Waikato's funding would rise by \$1.14 million or 13%. However, the University of Otago is estimated to lose \$1.9 million, 5% of its existing share, and Massey and Canterbury universities would each take a hit of \$500,000 or more. Without any significant top-up to annual PBRF funding, the move effectively erodes resourcing for other subject areas.

Part of the justification for the PBRF

changes is tackling the under-representation of Māori and Pacific academics - about 4.8% of the tertiary workforce is Māori, and just 1.4% Pacific.

The chair of the PBRF review committee, which proposed the suite of changes to the Government, is Waikato University professor of education and Māori development Linda Tuhiwai Smith, whose 1999 book Decolonizing Methodologies has been described as "a landmark in the process of decolonizing imperial Western knowledge".

"That's the wellspring for all of this," says Kendall Clements, who describes it as a "postmodernist word salad".

"It's in its third edition, it has been cited thousands of times. The PBRF was about funding the universities on the basis of research excellence. That's all gone out the window. It's now kind of an engine for social justice."

Ocean Mercier, a senior lecturer at

BEYOND SCIENTISM

An eminent Pākehā researcher embraces mātauranga Māori in an investigation of tītī-harvesting sustainability.

hen Henrik Moller set out to investigate muttonbirding sustainability on the Titī Islands, off head into an head into an head.

more respects the worst and most difficult research I have ever and in other ways the most most and satisfying," says Moller, a Dune in based environmental consultant and emeritus professor at the University of Otago, where he did the research, starting in 1994.

Harvesting of muttonbirds, the sooty shearwaters that return to the islands every year to breed and raise their chicks, is controlled by Rakiura Māori, who have rights to visit between March and May and harvest the birds, which have significant economic and cultural value.

The harvest is a tradition stretching back centuries and is governed by local kaumātua according to principles of kaitiakitanga. There is no quota governing how many birds can be taken each year. The families of birders have their own harvest-management systems, adjusting the catch with the aim of maintaining tītī populations and several strictly enforced rules to preserve the breeding colony habitats and minimise disturbance. The islands are a fragile environment and tītī populations are under pressure from the demands of the harvest, predation by weka and possible climate-change effects.

Moller and his colleagues wanted to study the practices of the birders and understand mātauranga Māori and kaitiakitanga, a proposal that met with immediate opposition from some Rakiura Māori, who feared it would lead to the imposition of quotas. The research team's approach had to change radically for the project to proceed.

"I don't think we betrayed one fundament of the science process in an 18-year partnership with Rakiura Māori in the tītī-harvest study, but our process of doing the science was very different because of the mātauranga and associated kaitiakitanga," says Moller.

The community co-managed the research, with direction from kaitiaki. The same scientific methods of inference and testing were employed, but the scientists



"I don't think we betrayed one fundament of the science process in an 18-year partnership with Rakiura Māori"

had to learn a new set of skills, to deal with conflict and to make themselves personally accountable for their science.

"Different types of questions will be asked when a te ao Māori approach drives the science, and it will have to be done in a different way that, in our experience, seemed better in some respects and weaker in others," says Moller.

At one point, the researchers had to discontinue work on one island when unable to resolve conflicts with distrustful birders. It took a year to win the confidence of

whānau birding on another island for the observations to continue. It meant that for some fieldwork, the research had to start from scratch in the fourth year of the project, a terrifying prospect for scientists needing to meet contractual deadlines.

In the end, the project succeeded, thanks to the strength of the relationship, genuine respect for each other's worldviews, the preservation of kaitiakitanga and a shared goal – to look after the islands so that mokopuna have the privilege of muttonbirding for years to come.

The paper Moller and colleagues published in the *New Zealand Journal of Zoology* in 2009 reads like a cautionary tale and also a blueprint for scientists looking to pursue cross-cultural research partnerships.

"Certainly, it was a lonely place to stand as a Pākehā under attack from both flanks," says Moller, who had to battle a belief on the part of some that only Māori can or should do the research, and of some university scientists that mātauranga and science cannot work together.

The research concluded a minority of whānau were harvesting too many chicks for bird numbers to be maintained on some of the islands. At the end, as at the beginning, the scientists had a mixed reception.

The research was "just numbers", one kaumātua commented, pointing out the higher importance of tikanga and mātauranga. Another respected female elder was more sanguine: "We can teach our children to look after our manu [island]," she told the researchers, acknowledging the value of the lengthy science-mātauranga partnership's accumulated knowledge.

"In some instances, I'm not sure that always happens. We seem to be in a world where not all the young people want to listen any more. So, it's important we pass on how to look after the manu and that gives the birds the best chance."

For the guidelines paper, see tinyurl.com/ NZLGuidelines "We have to confront ugly realities, whether they are in our history curriculum or the science curriculum," she says.

"I respect the views about people not wanting to be put off science. There's more work to do to support students through that type of journey. We are not doing science the way we did it in the 19th century."

KAUPAPA MĀORI

Professor Garth Cooper, who has one foot in the School of Biological Sciences at the University of Auckland and the other in the Department of Medicine, has Māori heritage and decades of experience working with Māori as part of his research into new ways

Cooper has Māori heritage and decades of experience working with Māori as part of his research into new ways of treating diabetes.

of treating diabetes.

He signed the letter, frustrated at what he sees as the undermining of science at school level through the proposed changes. He confesses he doesn't understand how mātauranga Māori works in the research sector.

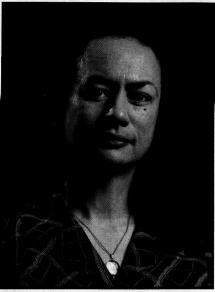
"I'm not wilfully ignorant," insists Cooper, who, as a University of Oxford researcher, discovered the hormone amylin, which led to development of an amylin-replacement therapy for diabetes and a successful biotechnology business to commercialise it.

Cooper just doesn't see clear outcomes from mātauranga Māori research programmes springing up around him.

"But I think it's perfectly possible and desirable to undertake research within a Māori framework," he says.

More than 20 years ago, he helped the Health Research Council develop a methodology for doing so, which is widely known and used today as Kaupapa Māori Research. It was informed by Cooper's work early in his career as a registrar working in South Auckland with diabetestreatment pioneer Dr David Scott.

"We found that a lot of Māori and





Senior lecturer Ocean Mercier, top, and Te Pūnaha Matatini director Cilla Wehi.

Pasifika families weren't accessing care," he says.

"There was this big hospital sitting in splendid isolation. People were frightened; they didn't want to come to the hospital."

Cooper and Scott set up a community healthcare programme at the Whaiora marae in Ōtara.

"David's vision was to take healthcare delivery, where possible, out of the hospital and into the community. There were definable tasks and definable endpoints. It helped people and had wide buy-in," he says.

DEALING WITH COMPLEXITY

Kaupapa Māori Research is informed by tikanga Māori, the Māori ways of doing things, and is as much about ethics, building trust in the research process and ensuring outcomes for Māori as it is about the science itself.

But it has had longer to develop as a way of conducting research. As mātauranga Māori becomes more embedded in science faculties and research programmes, it could benefit from similarly standardised approaches that help dispel the misunderstandings surrounding it in a world where academics are still driven by a need to publish scientific papers and universities obsess over their international rankings.

One institution that has successfully put mātauranga Māori at the heart of what it does also sits on the University of Auckland campus.

Te Pūnaha Matatini is a governmentfunded centre of research excellence that deals with issues related to risk, uncertainty and complexity. Its researchers earlier this

"We have to confront ugly realities, whether they are in our history curriculum or the science curriculum."

year won the Prime Minister's Science Prize for their work developing mathematical models that have helped the Government better understand and combat the spread of Covid-19.

The centre's original director, physicist Professor Shaun Hendy, introduced a strong mātauranga Māori focus from the outset. New director, Associate Professor Cilla Wehi, a Pākehā conservation biologist, plans to develop that further.

"We don't want to be doing the same old, same old," says Wehi.

"We are thinking about how we can best answer questions that are really complex and require interdisciplinary approaches and creative thinking."

Part of Te Pūnaha Matatini's approach to research involves running an engagement incubator.

"Before researchers begin their projects, they have the opportunity to come together to work with their partners in the community, to reflect on the ethics of the proposed research.

"It's about co-creating research, not just pursuing an idea in isolation from all of the other things that are happening in society. That's what mātauranga Māori is about."

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 "Im defence of science" letter (July 3t), 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 know-ledge 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

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- Letters must be under **300** words. Preference is given to shorter letters.
- A writer's full residential address is required on all letters, including emails.
- A phone number can be helpful.

 Pen names or letters submitted
- elsewhere are not acceptable.
 We reserve the right
 to edit or decline letters
- to edit or decline letters without explanation.



WINNING CAPTION Ricky Feutz, Tauranga

FINALISTS

Caption: "Republican candidate Caitlyn Jenner clears up a misunderstanding. A call to support 'Jenner's side' had been misinterpreted as 'genocide', she told reporters." – Dean Donoghue, Pāpāmoa Beach

Caitlyn Jenner: "Let's check those election results upstairs." -Robert Morey, Dunedin

Jenner: "My kids think I'm trans-parent." – Lanoc Snikta, Nelson

Jenner: "Let's play the Jenneration game." – Daniel Phillips, Invercargill Caption: "Caitlyn Jenner proposes using exorcism to defeat Joe Biden in 2024." – Vic Evans, Nelson

Caption: "Caitlyn Jenner demonstrates how she plans to ward off Democrats." - Kate Highfield, Hastings Jenner: "And one thing I promise to do is make knitting compulsory in all schools!" - Kate Highfield, Hastings

New Zealand celebrate after the Women's Rugby Sevens

medal ceremony at the 2020 Olympic Games in Tokyo.

Jenner: "Now
I find there's a
different battle of
the bulge ..." - Simone
Stansfield, Wellington

Jenner: "We are born either Democrat or Republican, but we choose our gender." – Robin Manson, Golden Bay

Jenner: "The Caitlynator for California? I'm not loving it." – Simone Stansfield, Wellington

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)

Like indigenous knowledge around the world, mātauranga Māori has much to offer, but it is not science.

Like all indigenous knowledge, mātauranga pūtaiao (Māori knowledge of the natural world) depends on observation, imagination and especially tradition. But science systematically challenges traditions. It goes far beyond observation into hypothesis, then tests hypotheses as severely as possible. Claims that do not remain exposed to "the hazard of refutation" (Karl Popper) do not belong in science.

The NCEA proposals to teach science alongside mātauranga pūtaiao refer to "Western science". But science is not the product of "the West". Although it began to emerge in 16th-century Europe, it drew on Indian, Arab and Chinese as well as European discoveries and has been added to by researchers around the world, including researchers who have learned from indigenous knowledge.

Science is universal. Indigenous knowledge is not, not least in its spiritual elements. Scientists as distinguished as Albert Einstein and Jane Goodall intuit a spiritual dimension to the world, but they know that its possibility may remain forever beyond scientific inquiry. The claims of particular faiths or traditions to know a spiritual world

behind the natural one reach further and question less than any claims that science makes. And they are local. As Xenophanes wrote 2500 years ago: The Ethiops say that their gods are flat-nosed and black,

While the Thracians say that theirs have blue eyes and red hair.

Yet if cattle or horses or lions had hands and could draw And could sculpture like men, then the horses would draw their gods

Like horses, and cattle like cattle, and each would then shape Bodies of gods in the likeness, each kind, of its own. Mātauranga Maori can offer unique local ecological knowledge and guidance, including in kaitiakitanga and community consultation, which can feed into science and policy. But it is not science, as Sir Mason Durie comments in Rauika Māngai: A guide to vision mātauranga, lessons from Māori voices in the New Zealand science sector (2020), in proposing a new Māori Science Research Agenda: "You can't understand science through the tools of Mātauranga Māori, and you can't understand Mātauranga Māori through the tools of science. They're different bodies of knowledge." Durie

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THE PRIZE Rick Gekoski invites readers into the enchanted world of the rare books trade as he reflects on the gems he has unearthed throughout his career.

Entries must be received by noon, Tuesday, August 17.



Quips& Quotes

"My kids ask, 'Are we rich?' My answer to that is 'I am'." - Jerry Seinfeld on entitlement

"We must use time as a tool and not as a couch."

- John F Kennedy

"Twitter! It's being stalked by committee!" – David Tennant, quoted in the Guardian

"You have enemies? Good. That means you stood for something sometime in your life." – Winston Churchill

"How far you go in life depends on your being tender with the young, compassionate with the aged, sympathetic with the striving and tolerant of the weak and strong. Because some day in your life you will have been all of these." – George Washington Carver

"Frisbeetarianism is the belief that when you die, your soul goes up on the roof and gets stuck."

- George Carlin

"I have never been modest enough to demand less of myself." - Friedrich Nietzche, quoted in the Week

"It's somehow appropriate that after Tuesday, the rest of the week spells WTF." - Twitter

"Kia mau ki te aka matua, kei mau ki te aka tāepa." Hold the vine rooted in the ground, not the vine hanging from the heavens." – Māori proverb

"To be left alone is the most precious thing one can ask of the modern world." – Anthony Burgess

10 Quick Questions

- 1. Which of these Michaels was not born and raised in Canada?

 Michael J Fox
- ☐ Mike Myers
- ☐ Michael Bublé
- Michael Douglas
- 2. True or false? Urine in the bladders of healthy people is sterile.
- ☐ True☐ False
- 3. What is the Māori name for the New Zealand falcon?
- ☐ Kāhu
- Pīwakawaka
- ☐ Kārearea
- ☐ Whio
- 4. True or false? Dogs can correctly judge when people are being dishonest with them.
- ☐ True
- False

by GABE ATKINSON

- 5. The public are permanently banned from stairclimbing or ascending which of these structures?
- Leaning Tower of Pisa
- ☐ Statue of Liberty
- ☐ Great Pyramid of Giza☐ Sydney Harbour Bridge
- 6. What is another name for the traditional British dessert called shirt-sleeve pudding?
- Jam roly-poly
- ☐ Knickerbocker glory☐ Eton mess
- Raspberry fool
- 7. Which film includes the line: "Your scientists were so preoccupied with whether or not they could that they didn't stop to think if they should"?
- Jurassic Park
- ☐ Frankenstein
- Planet of the Apes
- ☐ The Fly

- 8. Which of these is the title of an acclaimed non-fiction book by an American journalist using the pen-name Nellie Bly?
- Unsafe at Any Speed
- ☐ How the Other Half Lives☐ Silent Spring
- ☐ Ten Days in a Mad-House
- 9. Who famously flew a kite during a thunderstorm to demonstrate the electrical nature of lightning?
- Thomas Edison
- ☐ Benjamin Franklin
- ☐ Marie Curie
- Nikola Tesla
- 10. Which fictional hero has a sidekick named Ernest Penfold?
- ☐ Popeye the Sailor
- ☐ Indiana Jones ☐ Tarzan
- ☐ Danger Mouse

Answers on page 58.

continues: "and if you try to see one through the eyes of the other, you mess it up." With that last phrase, I disagree: it reflects what Popper calls "The Myth of the Framework". With goodwill, we can learn from cultural differences.

Brian Boyd, FRSNZ

Distinguished professor, English and Drama, University of Auckland

There appears to be a certain amount of confusion about knowledge and science. The former is the empirical information we, and other animals, gather by means of our senses in order to survive and can be shared. The latter is attempting to understand the basis of the observations. So, for example, mānuka honev has antiseptic properties, but why? For millennia, our ancestors probably observed the relationship between the phases of the Moon and the height of the tides or that coconuts fell from trees, without knowing about

gravity, etc.

My experience of science being Western is having an Indian PhD supervisor and my last PhD student being Japanese.

Reuben Leberman

Retired senior scientist, European Laboratory of Molecular Biology

The otherwise excellent August 7 article contained an error. On page 16, it said, "Their letter was published in the same week the University of Auckland changed its official name to Waipapa Taumata Rau ..."

This is incorrect. The
University of Auckland has
not changed its official name.
"Waipapa Taumata Rau" is
our new Māori name,
gifted to us by local
iwi Ngāti Whātua
Örākei. It replaces the
previous (and more
literal) Māori name
"Te Whare Wānanga o
Tāmaki Makaurau" and

represents more closely our location and relationship with mana whenua.

Todd Somerville

Associate director, communications, University of Auckland

BEING GREEN

"Greening our lives" (August 7), the excellent article on urban greening, should be mandatory reading for all civic leaders and urban design consultants. How sad, then, that the opportunity has been lost in the Christchurch rebuild, following the devastating earthquakes, to encourage low-storeyed buildings with multiple connecting

Letter of the week



The winner will receive Men Without Country, a sweeping history of exploration and rebellion - told by a direct descendant of Fletcher Christian, the man who led the infamous mutiny on the Bounty.

Quips& Quotes

"Strange times for cats. First the dogs kept inside, now the humans. Must feel like they've won." - James Felton

"In terms of instant relief, cancelling plans is like heroin." – John Mulaney

"Change to the brain is something like repotting a plant, limited by living in a little pot, moving into a bigger space with new nutrients, where it can grow anew." – Matthew Parris in the Spectator

"A man lost his dog so he took out an advertisement in the newspaper. It said, 'Here boy!" – quoted in the Economist

"Trash is for tossers." – Lauren Singer

"People are more violently opposed to fur than leather because it's safer to harass rich women than motorcycle gangs." - Alexei Sayle

"It takes a long time to become young." - Pablo Picasso

"Be the change you wish to see in the world." – Mahatma Gandhi

"Kaore te kūmara e kōrero mō tōna ake reka."The sweet potato does not talk of its sweetness. – Māori proverb

"We are not going to have people living in slums while there are workmen here capable of building decent houses. We have visions of a new age, an age where people will have beauty as well as space and convenience in and about their homes. – Michael Joseph Savage in 1936

10 Quick Questions

1. Which TV show included the quotable line: "I am not a number, I am a free man!"

☐ The Prisoner

☐ Hogan's Heroes☐ The Avengers

☐ Get Smart

2. In which national park would you find Blue Lake, considered to be one of the clearest lakes

in the world?

Nelson Lakes

☐ Tongariro

Arthur's Pass

☐ Fiordland

3. Which TV sitcom's theme tune begins: "Thank you for being a friend ..."

☐ The Facts of Life

☐ Growing Pains

☐ Full House

☐ The Golden Girls

by GABE ATKINSON

4. True or false? Freestyle is the name of a stroke in swimming.

☐ True

5. The Scouse accent is associated with which part of England?

☐ Birmingham

■ Manchester

☐ Liverpool☐ Newcastle

6. Which movie is *not* based on a Disney ride or attraction?

Futureworld

☐ The Haunted Mansion☐ Pirates of the Caribbean

☐ Tomorrowland

7. True or false? In ancient Egypt, mummification was reserved for pharaohs and their families.

☐ True

☐ False

8. What is the name of the enormous bird encountered by Sinbad in the Arabian Nights?

☐ Sila

☐ Bahamut

☐ Roc

☐ Efreet

Which of these treats is considered a quintessential part of Canadian cuisine?

Cronut

■ Butter tart

Cinnamon roll

Cream horn

10. Which island finally abolished its feudal system in 2008 – one of the last places in Europe to do so?

☐ Corfu

☐ Isle of Man

☐ Sark

□ Corsica

Answers on page 58.

Science at its core is based on the scientific method, but it also incorporates the study of accumulated knowledge just as I suspect mātauranga Māori does. Indeed, mātauranga has been incorporated into numerous scientific studies, including the investigation of kauri dieback and muttonbird sustainability.

Research and observation contribute to both disciplines, but only science has at its core the scientific method. The notion of "decolonising science" in a science curriculum is conceptually beyond me.

However, I venture to suggest that the steady decline of student achievement in science is more due to deficiencies in teaching the accumulated scientific knowledge than of attention to scientific method. There is ample scope to bring in the teaching of matauranga Māori throughout the school curriculum without solely burdening the science syllabus.

The statement by the Royal

Society Te Apārangi that it rejects "the narrow and out-moded definition of science" begs the question what, in the society's view, does the study of science involve?

The requirement to include mātauranga Māori as a science has other implications, too, as highlighted in "The meaning of science" (August 7), where it has been given a greater proportion of research funding than clinical medicine and engineering. Will this result in unintended consequences for the nation?

Why can't we have an open and mature debate on matters such as this and as a society resolve them without one party invoking "hurt and dismay" or even racism in their criticism of a legitimate concern?

I cannot help but note that most of the criticism of the university group comes from those without a stated science background.

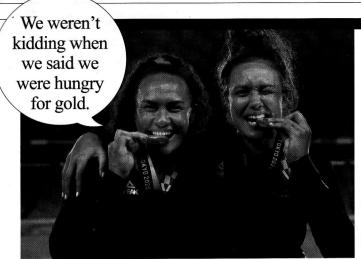
David English (Auckland)

COMMUNITY MENTAL HEALTH

I was disappointed by Peter Stanley's assertion (*Letters*, August 14) that only doctors and psychologists have the depth of understanding to help people and take responsibility for the critical tasks in mentalhealth treatment. This seems unhelpful tribalism to me. We all have an equal value.

I work therapeutically with many people who have intentions of abandoning their lives. I help them with safety plans and assist them to find some personal hope to carry on in difficult circumstances, including poor housing, unwanted trauma inflicted by others, social isolation and stigma.

When I leave meetings with these courageous, traumatised people, I'm thinking, should I have tried to get them a bed in an oversubscribed mentalhealth unit, or can they be treated at home with extra support? As a duly authorised officer, I decide if the timing is right to instigate legal proceedings, which often means getting





FINALISTS

Caption: "Olympians bit coins." – Vic Evans, Nelson

Caption: "As we thought, it's chocolate covered in gold foil." - David Rose, Hamilton

Portia Woodman: "I've always said I'd give my two front teeth for a gold medal." – Michael Christeller, Pāpāmoa Beach



Russian President Vladimir Putin, left, talking to Defence Minister Sergei Shoigu during a military parade.

Caption: "Tokyo dentists strike gold as the rate of emergency dental care mysteriously spikes among top visiting athletes." – Tristan Melling, Auckland

Caption: "Taste of success."

- James Lewis, Auckland

Caption: "Off-field biting incident

at conclusion of sevens final."

- Tim Hambleton, Dunedin

Ruby Tūī: "I guess ACC will cover a broken tooth as a sports injury."

- Paul Kelly, Palmerston North

Caption: "Golden moments sponsored by Bitcoin." – Bruce Elliot, Auckland

any of these contagious diseases from my patients.

Because of these experiences, I am naturally avidly pro-vaccination. As a result of the unparalleled success of our vaccination programmes over the years, younger generations have not experienced the fear, horror and pain that their ancestors did, so, sadly, they are sceptical.

I am prepared to go into any school in my area and share my experiences. Hopefully, the children will then take the message home to their parents.

Helen Carver

(Dannevirke)

SCIENCE AND KNOWLEDGE

Mātauranga contributed directly to the scientific endeavour two decades ago when I wrote the "Origin of Life" entry for the Oxford Encyclopedia of Global Change, stating, "Diverse tribal societies with ancient traditions prefer naturalistic, sometimes theistic, accounts of life's

origin based on the agency of some cosmic generative principle, of which the precept whakapapa (genealogy; layering) espoused by New Zealand Māori is perhaps the most comprehensive in its scope of application."

Since then, I have become much more convinced that the universality of scientific knowledge claimed by my institution's elite (*Letters*, July 31) is an illusion. The principles of physics and chemistry may be universal within a realm constructed according to the extent of their relevance, but biology transcends it.

Physics and chemistry give no comprehensive explanation of how patterns of information, such as the DNA sequences that make up our genes, temporally construct special, local domains of matter within which the operation of quantum mechanical rules is biologically confined. Biology effectively renders physical principles causally

impotent by constraining them both temporally and spatially. If current science is to play its part in the solution of problems it has helped to create (nuclear weapons, climate change, ecological collapse), it will have to abandon its claim to universality and embrace restrictions akin to those embodied in mātauranga.

In 1974, the Auckland University Philosophy Society staged a debate of the motion "That science is no more reasonable than mythology". Then a doctoral student in biochemistry, I was on the affirmative team; Robert Nola, signatory to the Listener letter, led the team for the negative. Although our intellectual positions have hardly changed, our institution has transmogrified from something resembling a Socratic academy into a corporation whose chief executive expresses an official view on mātauranga that must be consistent with the commercial interests she oversees.

Peter Wills

(Auckland)

I am a retired secondaryschool science teacher thankful to the University of Auckland group who brought the mātauranga Māori/science issue into focus, but I'm also angry and confused by the response.

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THE PRIZE Rick Gekoski invites readers into the enchanted world of the rare books trade as he reflects on the gems he has unearthed throughout his career.

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Science and knowledge



I would like to add to the debate ("The meaning of science", August 7) by pointing out that although mātauranga Māori can well stand on its own, there is strong evidence of its value in addressing issues where the dominant discourse of science has failed.

In the early 1990s, I used Māori concepts such as whanaungatanga (extended family-like contexts) metaphorically to illustrate how qualitative research interviewing could be significantly improved. This study identified how interacting within relational contexts could benefit all research participants and not just often-universitybased interviewers.

These understandings were extrapolated in the early 2000s to secondary-school settings, suggesting that where teachers established classroom relationships and interactions as if they were an extended family - with all the rights, commitments and obligations that such contexts generate - they were able to do their job much more effectively than those educated under the status quo that remains dominated by Western modes of thinking.

This hypothesis then suggested that as a result of these changes in pedagogy, Māori student achievement would improve. The implementation of these ideas in a Ministry of Education-funded research and development project, Te Kotahitanga, demonstrated, for example (among a wide range of outcome measures evaluated using standardised empirical quantitative and qualitative measures), that by

the fifth phase of the project, Māori students in project schools were achieving at three times the rate in NCEA as were their peers in nonproject schools.

These ideas of the fundamental importance of establishing caring and learning pedagogic relationships have since been further developed into a Relationships First programme being implemented in New Zealand, Australia and Canada with similar outcomes.

The main point of my letter, however, is not to talk about the projects themselves but rather to identify that these processes of co-creation and collaboration have been developed over many years and demonstrate the value of bringing mātauranga Māori into mainstream public-school education in ways that not only address the seemingly immutable issue of Māori student educational achievement, but also benefit many others who have been marginalised from successfully participating in education.

Russell Bishop, PhD, ONZM Emeritus Professor of Māori Education, University of Waikato

Various academics and a University of Otago paper seem to hold the view that Māori were the first people to explore Antarctica as far back as the 7th century, but that "Maori don't meed Western science to endorse or authenticate our knowledge systems".

Compare these claims against the written accounts of renowmed Amtarctica



explorers Shackleton and Scott, who had equipment, clothing and supplies suitable for that frozen environment. Sailor Sir Peter Blake talked about how hostile, treacherous and dangerous the Southern Ocean is to navigate on the way to Antarctica.

How did Māori manage in their outriggers/canoes and what clothing and footwear did they wear to cope with the freezing conditions?

In 1947, Thor Heyerdahl crossed the Pacific Ocean from South America on the balsawood raft Kon-Tiki. He was convinced the first humans to reach Easter Island came from South America. To prove it was possible, he decided to build a raft and make the journey himself.

Passage of time erodes accuracy. As a former detective, I learnt well that a week's delay in recording evidence, let alone a year or 1200 years, makes a big difference. Oral transfer of past events gets distorted and exaggerated and, invariably, barely resembles what actually happened.

As one with Māori heritage, I say to those who claim Māori went to Antarctica as far back as 700AD or even as recently as 1700AD: show how it is possible, in a canoe with a paddle, no ice breakers or thermal underwear, no sextant and no

speargun to travel to Antarctic waters.

Ross Meurant (Red Beach)

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

CK Stead, ONZ, CBE, FRSL

Professor Emeritus, University of Auckland

Allen Heath (Letters, August 14) proffers an uninformed representation of "traditional knowledge" as "neither more nor less than humans

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FINALISTS

Camilla, Duchess of Cornwall: "Is that hat a fowl up?" - Kevin Boyce, Raumati Beach

Chicken: "Well, pluck me, if it isn't that old chook Camilla!" -

Colin Kemplen, Matamata

Camilla: "Okay, that does beat Princess

Beatrice's pretzel hat!" - Eugene Kennelly

Deb Howe: "Aye, Ma'am, the red's a bit bright, but we'll be adding white streaks in a moment." - Mike Hamblyn, Dunedin

Deb: "Why, Ma'am? Because ostriches are endangered." - Mike Hamblyn, Dunedin

Deb: "Sorry, Ma'am, for such a paltry welcome!" - Mike Hamblyn, Dunedin

Deb: "This fascinator ensures appropriate social distancing." -

Terry Delaney, Upper Hutt

Deb: "Welcome to my hen party." - John Edgar, Christchurch

Prince Charles and British Prime Minister Boris Johnson at the National Memorial Arboretum.

> Camilla: "And they call me birdbrained!" – Sorrel Bovett, Kerikeri

Deb: "It's looked like this ever since we fed her a beetroot-only diet." - PM Lynch

Deb: "Until now, crossing the road had no meaning." - Graham Dickson, Dunedin

Caption competition

THIS WEEK'S PICTU

Camilla thinking: "Time to use the hand signal for urgent rescue."

- Margaret Cannon, Palmerston North

recognising and naming animals and plants in their immediate environment and deriving some understanding of food and health benefits or

harmful aspects". A forum published in 2009 by the Journal of the Royal Society of New Zealand (pp 139-242) presents case studies of its application in several fields, including: harvest management; toxicology; landscape management; planning; biodiversity protection and species recovery; ecological monitoring; modelling; energy management; greenhouse gas emission management; environmental law; environmental philosophy; and business development.

Traditional knowledge is not only applicable at a local level. It can guide ethical and effective ways to mitigate universal and global challenges to social, economic and ecological resilience.

I agree with Heath that

we must encourage "free expression of opinion without facile dismissal and misrepresentation of facts", so I, too, thank the seven academics for raising their concerns (Letters, July 31). However, his dismissal and misrepresentation of traditional knowledge will not help forge stronger partnerships between matauranga and science.

Henrik Moller

Professor Emeritus, Centre for Sustainability, University of Otago

I am responding to the NCEA working group's proposal that Māori science has equivalence to that colossal, international body of knowledge that has given us mRNA vaccines, the computer and jet-propulsion engines. Wishing that it were so will not make it so, and to persist with such a view is dangerous to what happens in classrooms and in schools.

The teaching of any

proposition with the intention that it is believed regardless of the evidence is indoctrination and not education. Obviously, initiation into cultural heritage is important, but the development of rationality and the capacity to weigh evidence are the central competencies for personal autonomy and responsibility, and for an advanced and democratic society.

Peter Stanley, PhD (Tauranga)

Terry Locke (Letters, August 7) asks how Māori knew tōtara was a good wood for making waka. Presumably by the same process the first blackbirds released here in an unfamiliar environment after a long sea voyage must have learnt what to eat: by trial and error.

PA Williams

(Nelson)

TACKLING THE P CRISIS

A lot of people are trying to get their head around the large Proceeds of Crime grant to Mongrel Mob affiliates to help combat "P" addiction (Life, July 31). The addiction-treatment model the proponents favour - the Minnesota model - has fallen out of favour, with the national rehab unit at Queen Mary Hospital, Hanmer

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TO ENTER Send your captions for the photo above to listenercaption@aremedia. co.nz, with "Caption Competition No 423 in the subject line. Alternatively, entries can be posted to "Caption Competition

No 423, NZ Listener, PO Box 52122, Kingsland, Auckland 1352. Entries must be received by noon, Tuesday, August 24.

THE PRIZE Rick Gekoski invites readers into the enchanted world of the rare books trade as he reflects on the gems he has unearthed throughout his career.



The QI elves are a team of writers and comedians who find the answers to impossible questions, doing the research for the long-running QITV series, podcasts and spin-off books. For the next little while, we'll be running some of their finest findings: the weird, wonderful, witty and wise, from their latest book, Funny You Should Ask... Again.

Why are so few nuts actually nuts?

Scientifically, the word "nut" is defined as a dry fruit that contains a seed but doesn't split open when it reaches maturity. However, humans were eating nuts long before scientists came up with that definition; in fact, we probably started consuming them before we were even human. Today, most of us would simply define a nut as a small tasty snack that is delicious when salted or roasted.

Of the things usually called "nuts", hazelnuts and chestnuts fit the above definition, so technically speaking they are true nuts. However, cashews, almonds and pistachios are actually drupes – a fleshy fruit containing a single seed.

There is a similar muddle over the definition of a fruit. Technically, a fruit is the part of a plant that is fleshy and contains a seed, so despite usually being thought of as vegetables, pumpkins, cucumbers, tomatoes, avocados and okra are all actually fruits. However,

rhubarb is, in fact, a vegetable.

Botanists must get very frustrated when shopping in a supermarket: broccoli is in the vegetables aisle but it is also a flower, and a banana is actually a herb, although it is stocked with the fruits. Peanuts are technically legumes (edible seeds that grow in pods that split open), which brings us back to nuts, which aren't actually "nuts". It's all quite a mixed bag.

NUTTY EXTRAS

- A strawberry's "seeds" are actually individual fruits themselves, containing even smaller seeds within.
- Brazil nuts are one of the few food allergens that are sexually transmissible.

Extracted from Funny You Should Ask... Again, by the QI Elves (Faber, \$27.99), which is out now.



Allan Martin (March 5) bemoans the fact that no voices have been raised about the shutting down of the Marsden Point refinery.

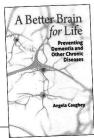
He's clearly missed the petition I started that was presented to Parliament with 18,300 signatures in December. It languished in the hands of Parliament's Petitions Committee until last week.

One would have thought the international fuel crisis resulting from the Russia-Ukraine war would have generated some urgency to put the closure on hold. Sadly, it appears not.

Chris Leach

(Leader, Social Credit Party)

Letter of the week prize



In her third book on dementia, 92-year-old Angela Caughey draws on the latest research to show what can be done to foster a healthy brain, ward off many common chronic diseases, and prevent, or at least slow down, the brain's decline.

The Royal Society Te Apārangi has decided not to proceed with an investigation into complaints it received about a letter sent to the Listener last July. The letter, from seven University of Auckland professors, raised concerns about proposed changes to the Māori school curriculum involving science. Three of the professors (including Michael Corballis, who has since died) were Fellows of the Royal Society. In a statement, the society said it had decided not to proceed as the matter was "not amenable to resolution" partly because it would have demanded "the open-ended evaluation of contentious expert opinion or of contested scientific evidence amongst researchers and scholars". However, in the panel's view, "the matters raised are of substance and merit further constructive discussion and respectful dialogue". ADVERTISING PROMOTION



Maintain to gain

Home maintenance is essential for preserving the value of your home. Make sure you've got these essentials on your weekend "to do" list.

On the outside

Learn how to look after the cladding particular to your home. For example, plaster homes need to be washed with warm water and a soft brush while timber weatherboards need to be painted every seven years or so. Washing your home a couple of times a year is a good idea. You should pay particular attention to your window sills - aluminium windows can shrink and let water in. Keep hinges exposed to the elements lubricated to help prevent corrosion, and always keep vegetation off your home, as that's where moisture sits and how it gets into your home. Always keep your gutters clean and clear.

New homes need work, too

A good house builder or developer will leave you with information about how to maintain the home, so make sure you get this before you pick up the keys. Preventive maintenance is always better and cheaper in the long run.

If you've recently purchased Usually, you will have a building report. Use it to prioritise any maintenance work or repairs that need doing.

property.

trademe.co.nz/property

vast majority of adult sexual violence reported to police is perpetrated by men.

Jan Jordan, adjunct professor at Victoria University of Wellington's Institute of Criminology, sees the need to recognise that sexual violence is a manifestation of the gender inequalities entrenched in our society, including the ways we privilege men while objectifying and sexualising women. She is also concerned about boys getting their sex education through pornography, "giving a view of women as available objects to conquer".

As parents, we need to empower our children, set good examples and open up honest, healthy communication.

For the vast majority of young people who suffer sexual abuse, the perpetrator is known to the victim. Studies over many decades keep giving these horrific statistics, but nothing has really changed.

We do need to look at our legal system, but we also have to take responsibility in our homes and workplaces and be more understanding of vulnerable people. Many of those abused end up badly damaged and open to future abuse if no care is given. Surely, we can do better than this.

Emma Mackintosh (Birkenhead)

LETTER OF THE WEEK

MĀTAURANGA MĀORI

Last week, the *Listener* summarised the statement released by the Royal Society Te Apārangi on the complaints made against the three society fellows among the professors who wrote to the *Listener* last July questioning the equivalence of mātauranga Māori with science.

As you report, the panel decided that the complaint should not proceed because the question at issue needed "the open-ended evaluation of contentious expert opinion or of contested scientific evidence

amongst researchers and scholars".

This is precisely what the professors' letter had advocated, but such an evaluation was promptly shut down (with the admirable exception of the *Listener*) by the outraged responses of the society, the University of Auckland, the Tertiary Education Union and, among others, the many academics and students who signed a denunciation prepared by [scientists] Shaun Hendy and Siouxsie Wiles.

The most astonishing thing about the report released is not that the society found the matter should not be investigated by a complaints panel but that the key sentence exonerating those who wrote the letter was dropped from the statement given to the media. That sentence read: "The panel considered there was no evidence that the fellows acted with any intent of dishonesty or lack of integrity."

That the panel exonerated the scientists complained against, and that the society then decided not to release that exoneration, typifies the kind of behaviour that has led to the two surviving fellows complained against, Garth Cooper and Robert Nola, resigning from the society (the third, Michael Corballis, died shortly after the investigation began).

Other fellows, including myself, are also considering resignation, and hesitate only in the faint hope that we can somehow hold the society to defending science, scientists and open discussion about complex matters.

Brian Boyd, FRSNZ, FNZAH

(Distinguished Professor, University of Auckland)

It is interesting to learn (Letters, March 26) that the Royal Society Te Apārangi panel has dropped complaints about two fellows who signed a Listener letter last year claiming that Mātauranga Māori and

science weren't the same thing.

The panel's opinion was that the issue should be respectfully discussed further.

It is hoped that those who quickly leapt into the fray and mounted a petition against the professors who spoke in defence of science take the Royal Society's recommendations on board.

Glennys Adams (Waiheke Island)

DISASTROUS DIPLOMACY

It is valuable to have this range of items on the Ukraine invasion; it establishes what a ghastly and destructive process it is. It is nothing to be glorified or minimised, as some want to do. Also, with a clear initiator of the conflict, blame is easy to assign.

However, the background is tempting to ignore, and oversimplification can be dangerous. In this case the war was the culmination of 30 years of disastrous diplomacy.

To their credit, several US outlets – the New York Times, Washington Post and Newsweek – have run articles outlining how Western policies have triggered Russian security concerns.

We cannot properly understand this war and its resolution without recognising this issue. We may get rid of Vladimir Putin, but the issues will still remain.

A much bigger issue, however, is the fact that all involved have relied on the assumption that military power brings security. The dilemmas that strategists are faced with in Ukraine, particularly in the context of nuclear weapons, demonstrate the utter fallacy

of this assumption.

We must put our effort into developing more civilised bases for our security, so we can move away from the intrinsically destructive military option.

Gray Southon (Tauranga)

Ukrainian President Volodymyr Zelenskyy is a sure bet for the Nobel Prize, either for peace or contemporary poetry. His, "I see no sense in life if it cannot stop the deaths", and "I need ammunition, not a ride" surely rank up there with Bob Dylan, who won the Nobel for similar witty, pithy, poetic aphorisms.

Larry Mitchell (Rothesay Bay, Auckland)

DEMENTIA AND EUTHANASIA

As with RJM Gardner's letter (March 26), the debate around end-of-life choice for people living with dementia is often couched in discussions about "dignity". Life with dementia is deemed unacceptable and assisted suicide is presented as the only solution.

But in the words of one woman living with dementia: "However it may feel at the beginning, it is still possible to live a life of quality with dementia. Not the life you had before, perhaps, but a life full of promise."

The urgent priority is for people living with dementia to be able to access the support and services to enable them to live well. That is why getting the Dementia Mate Wareware Action Plan funded and implemented by government cannot wait. Talk is not enough.

If the debate around

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urban and rural people, as evidenced by the turnout of 60,000 at our protest in July and the estimated 100,000 in 70 towns last month. Support will continue to grow as more people realise we have genuine issues and are passionate advocates for the environment and workable solutions.

Jamie McFadden

Groundswell NZ

SCIENCE IS SCIENCE

Since the subject of mātauranga Māori was raised through *Letters* in July, a global response has been building against the ludicrous move to incorporate Māori "ways of knowing" into New Zealand's science curricula, and the frankly appalling failure of the Royal Society of New Zealand to stand up for science – which is, after all, what the society exists to do.

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.

If a "different" way of knowing worked, if it satisfied the above tests of being evidence-based, it wouldn't be different, it would be science. Science works. It lands spacecraft on comets, develops vaccines against plagues, predicts eclipses to the nearest second, dates the origin of the universe, and reconstructs the lives of extinct species such as the tragically destroyed moa.

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

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for? What else is the rationale for its existence? I hope you won't think me presumptuous as an outsider (who actually rather wishes he was a New Zealander) if I encourage you to stand up against this nonsense and encourage others to do so.

Richard Dawkins, DSc, FRS

Emeritus Professor of the Public Understanding of Science, University of Oxford

RADIO TO THE RESCUE

Following on from Tom Frewen's excellent "Medium and the message" (Letters, December 4), I think RNZ's Paul Thompson can't be living in the real world to be so sure of the digital future for radio.

In the real world, to mention only three events from our small rural town, a car crashed into a power pole (nearly a full day without electricity); a severe wind storm uprooted trees on to power lines (four days out); a heavy snowfall broke trees and lines (10 days out and no water because of the useless pump). Without electricity, there's no internet and your cell-phone battery will soon be flat. We won't even mention the Alpine Fault that's due to rupture any time. Thank goodness for our old battery-powered radio to keep us informed and in touch.

Dominique Davaux-Guthrie (Waimate)

THE BEATLES REVISITED

How thrilling is to see footage of the four amazing young Liverpudlians taking the world by storm. Thank you so much, Sir Peter Jackson, you are an amazing filmmaker ("Magical history tour", November 27).

Growing up with rock 'n' roll was freeing enough, but the Beatles really captured a dizzyingly high music genre for us. Dance, sing and watch. Brilliant! Viv Webby

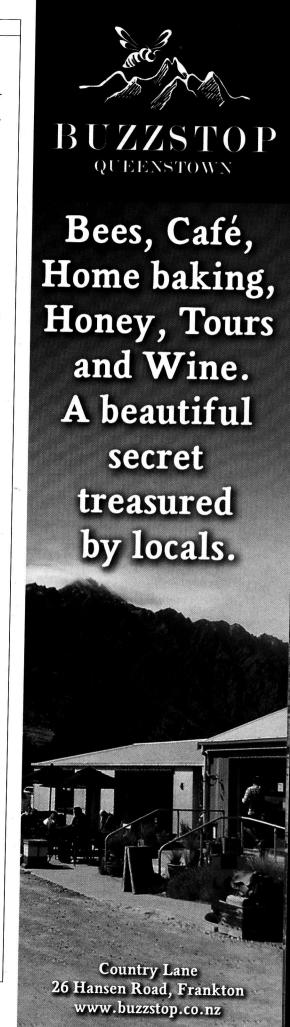
(Lovin)

(Levin)

DEMOCRACY UNDER THREAT

As an American lawyer (and permanent Kiwi resident) living most of the year in Auckland, I found Charlotte Grimshaw's Diary (November 13) on the looming threat of fascism in the US to be scarily on point.

Things were getting bad before Donald Trump. However, his populism and arrogant public-be-damned posturing have amplified the divisions among Americans. Not unlike the appeal to followers of Adolf Hitler, many of Trump's allies prey on unfounded "hope, gullibility,



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'

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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





Singer Sir Rod Stewart chats with Prince William.

WINNING CAPTION Hans Zindel, Palmerston North

FINALISTS

Christopher Luxon: "I intend to keep the focus on our Key assets." – Dean Scanlen, Whangārei

Luxon: "We are going to increase National support by this much!" – John Mills, Christchurch

Nicola Willis (thinking):
"Rule No 1, Luxie,
never demonstrate
a measurement with
thumb and forefinger ..."

Kate Highfield, Hastings

Luxon: "So, we measured

them and I won because Simon's is only this big."

- Paul Hoek, Feilding

Luxon: "Yes, I know she follows me everywhere this closely and says nothing ... but I am CEO." – Alan Hough, Bethlehem

Willis: "As a well-grounded high-flyer, he's now our foxymoron." – Alan Belcher, Christchurch

Luxon: "Well, about this long, actually, but my wife wasn't keen on the blue colour." – Brian Farrant

Caption Competition {listenercaption@aremedia.co.nz}

TO ENTER Send your captions for the photo at left to listenercaption@ aremedia.co.nz, with "Caption Competition No 441" in the subject line. Entries must be received by noon, Tuesday, January 4.

THE PRIZE *Home* is a collection of more than 200 original recipes by Australian chef Stephanie Alexander. Each recipe is a finely crafted tribute to her passions and preferences for produce and flavour.



be able to spot its own. **Gerard Dunne**(Auckland)

BUILDING PRESSURE

Our small, isolated economy is at the mercy of global forces. Nowhere is this more evident than in the soaring cost of building materials ("Through the roof", December 11), Rapidly expanding UK and US construction sectors, dislocated oceanic supply lines and now creeping monetary inflation all put upward price pressure on the cost of building homes. It is misleading for any government to foster the mirage of its "control" over these price levels. Like a deluded ancient maritime king who once thought he could turn back the tide, the Government's posturing is doomed to come to naught.

Larry Mitchell (Auckland)

DISABILITY SUPPORT

I am hopeful the new Ministry for Disabled People will substantially improve the lifestyle of people with disabilities. It is long overdue that the support funding is to be moved out of the health arena.

I am also hopeful the specific needs of people with an intellectual disability will be acknowledged and understood. As Laurie Wesley notes (*Letters*, December 11), their needs are diverse. By observing what has happened to support services in the past decade, it's clear something has gone wrong.

Thirty years ago, I was heavily involved with IHC Rotorua. We provided day support services for more than 100 adults. These services were diverse in nature in an attempt to meet the needs of individuals and their families. As an example, we operated a commercial plant nursery, lawn-mowing services, a sewing shop in the CBD, and a woodworking factory. A team of workers travelled to a local sawmill where they had their own support staff working alongside other

workers. In conjunction with the polytech, we had trained coaches so people could be supported in mainstream jobs.

We also had a sensory day room where those with severe disabilities were cared for in a stimulating environment. All these have now gone.

Is the new Ministry for Disabled People going to address this failure? Is it, as Wesley suggests, the effect of well-meaning and impressive-sounding goals and philosophies that fail to take into account people's individual needs? Maybe it's time to go back to the individuals and families involved and ask if they are okay.

Roger Pedley

LETTER OF THE WEEK

FARMING SOLUTIONS

Gary Taylor, as chairman and executive director of the Environmental Defence Society, is qualified to argue environmental matters, but not to make broad generalisations about farmer politics (*Upfront*, December 11).

Groundswell has four basic principles that are quite different from those in Taylor's article. For a start, it seeks to halt and rewrite unworkable regulations, such as those involving resowing after winter crops and the degree of slope. Groundswell wants a stronger advocacy voice on behalf of farmers and rural communities, and I agree there is a problem. Federated Farmers punches well above its weight, but the levy organisations, Beef + Lamb New Zealand and DairyNZ, don't.

The rural sector needs a single united voice and Groundswell has taken steps to achieve that. It is also seeking solutions to environmental issues that are tailored to regional/district differences.

Groundswell's final principle is to "support the hundreds of grassroots initiatives like Catchment and Landcare groups, QEII covenants and biodiversity and conservation trusts", which is surely positive for the environment.

Taylor failed to mention that urban areas are also a major source of pollution. It is also interesting to note that the Paris Accord specifically excludes food production, without which our economy would be stuffed.

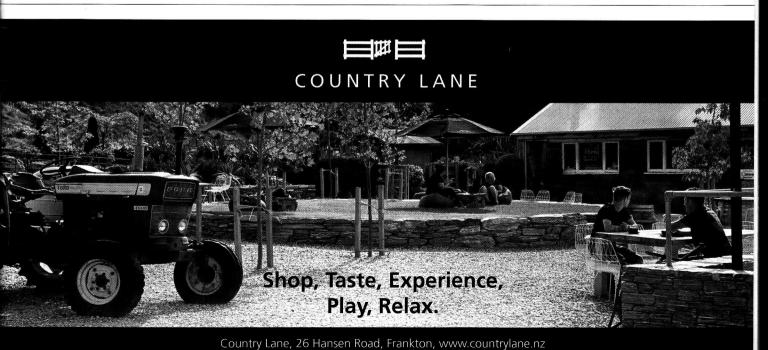
I'm not a member of Groundswell, but I respect and support what it does for provincial New Zealand and the country as a whole.

Alan Emerson (Masterton)

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Choice of words

SUMPER HOLDAY SOJE - ZWEENS' TVE

SUMPLIFIED TO THE SOURCE SOURCE

Many thanks to Hannah Moritz for her eminently sensible *Upfront* ("Playing the Nazi card", December 18).

Forty years ago, I spent six months in the company of a number of concentrationcamp survivors with telltale tattoos.

One woman I met back then had a different story to tell. When Hanke and her family were being rounded up, a Ukrainian SS soldier (let's not forget them) took a shine to a gold watch she'd recently been given for her 18th birthday.

When she refused to give it up, he beat her with a rifle butt and left her for dead in the street in the snow. She was rescued by Polish neighbours (gentiles) and spent the rest of the war in one of the ghettos, ready to jump out of her third-storey window if the Gestapo came calling.

At least she survived. Her entire extended family perished in the camps.

Godwin's Law (from 1990) reads: "As an online discussion continues, the probability of a reference or comparison to Hitler or Nazis approaches 1."

I'm not sure if it's simply a particularly noxious stupidity, malice or ignorance of history, but people who spout nonsense comparing our Government and Hitler's Germany should be instantly disqualified from any civil debate about Covid 19 or "freedom".

Graeme Simpson (Rotorua)

ACRONYM ODDITIES

The 15 Quick Questions in the December 25 issue offered four options for the meaning

of NFT. We resorted to our AMIS (Acronym Management Information System) and discovered that it is a TLA (Three Letter Acronym) meaning "Non-fungible Token".

Leaving aside our comprehensive ignorance of cryptocurrencies – our spare funds, if any, reside in an SMD (Sub-Mattress Depository) – NFT had another meaning to us. In the southwest of England, medical practitioners were apt to write NFT on a patient's notes if no further investigation of assorted eccentricities and oddities was warranted – viz Normal For Tiverton.

This admittedly pejorative and unacceptable abbreviation gained some scientific support recently when DNA analysis of remains of the exhumed inhabitants of a medieval Tiverton cemetery revealed negligible differences in the gene pool then and now.

In modern times, though, with the possibility of patients getting their hands on their notes, NFT has gone the way of the paediatricians' FLK (Funny Looking Kid). It's probably for the best.

Kemble Pudney & Jane Quinn (Hamilton)

LETTER OF THE WEEK

MULTICULTURAL NEW ZEALAND

Naomi Simon-Kumar is correct when she says, in "For the good of society" (December 18), that despite profound demographic changes, "most of our institutions and cultural conversations still see things through the bicultural lens", thereby making groups such as Asians either invisible or, at

best, of marginal importance. An example of this is the Covid vaccination rates where, despite being the second-highest ethnicity by number (and having consistently the highest vaccination rate), Asians have rarely figured in briefings or media reports.

A key issue is that the bicultural designation, especially when government-mandated, benefits the two parties so designated whereas multiculturalism necessitates concessions of privilege that a group may be unwilling to concede.

If we want to have a cohesive, inclusive society, we need to move away from the narrowness of "pure" biculturalism and embrace the new New Zealand multicultural reality and all the wonderful complications it encompasses.

Julius Williams

(Palmerston North)

KNOWLEDGE AND SCIENCE

The chorus of approval (Letters, December 25) for Richard Dawkins' pronouncements about mātauranga Māori, is, like Dawkins himself, out of tune. No one has argued that science and mātauranga are equivalent; rather that they are different, sometimes overlapping, knowledge systems – in short, that they are different ways of knowing.

This is, or should be, uncontroversial. Indigenous peoples all over the world are asserting the value of their knowledge systems, and non-indigenous scholars are taking notice.

In climate science and other fields, indigenous expertise is increasingly welcomed into research universities where knowledge is produced and assessed. Covid has highlighted how we should listen to Māori if we want to avert a health crisis. Māori knowledge and expertise are fundamental to the improvement of all New Zealand's woeful social statistics.

Scientists are required to have expertise in the fields on which they comment, but those who howl about mātauranga, including most of the signatories to the inflammatory *Listener* letter, seem unabashed by their ignorance. Māori experts are not confused about the differences between mātauranga and science. It's the (principally Pākehā) non-experts who appear to be.

Professor Alison Jones

Te Puna Wānanga, School of Māori and Indigenous Education, University of Auckland

Richard Dawkins (Letters, December 18) asked who will stand up for science in New Zealand. Not the Royal Society (RSNZ), given the chilling news that it is "investigating" two of its fellows for signing the original Listener letter (Letters, July 31). It seems a misstep that the RSNZ, previously a science organisation, merged with the Humanities Council in 2010.

Some in the humanities contend that science is just one of many world-views, all equally important. Scientists, if they have studied the history and philosophy of their profession, know of the transformation when Enlightenment scholars developed the modern scientific method. Science emerged above other world-views in

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Spider monkey takes quick action to socially distance itself from politics.

WINNING CAPTION Paul Kelly, Palmerston North

FINALISTS

Spider monkey (thinks):
"Photobombed by a human
again ... sigh." - Kate Highfield,
Hastings

Jacinda Ardern: "No, I'm not turning round. It's Barry Soper trying to get my attention again, isn't it?" – Bob Richardson,
Christchurch

Ardern (to spider monkey):
"I'd stay put if I were you.
It's a jungle out there."

- Mike Hamblyn, Dunedin

Bono, left, and Matthew McConaughey at the premiere of Illumination's "Sing 2" in Los Angeles.

Caption Competition

THIS WEEK'S PICUSE

Spider monkey: "She's turning the zoo into a circus." – Rex McGregor, Auckland

Ardern: "No, I said arrange a meeting on Zoom. Why on earth would I want to meet anyone at the zoo?"

- Dean Donoghue, Papamoa Beach

Spider monkey: "Well, that's the monkey off your back." Ardern: "Yes, but there's still the elephant in the room." - Conal Atkins, Nelson

its power to understand the structure and function of the physical world.

Mātauranga Māori is clearly a rich and worthy equivalent to other cultural world-views. In Europe, traditional knowledge of nature is treasured for its enchanting stories and legacy of vernacular names of plants and animals. It is not placed equal to modern science in the school curriculum or in government agencies.

We must thank Richard Dawkins, and other foreign commentators, for speaking out on this issue, when our local intellectual climate intimidates local voices opposed to the new party line.

Brian Gill, PhD (Auckland)

Well said, Professor Brian Boyd ("A defence of truth", December 25). The Royal Society has dragged itself into disrepute in its response to the seven signatories to the now-notorious *Listener* letter. Such luminaries as Sir Mason Durie have warned about this, and it's weirdly ironical that his message seems similar to that of the seven, even if the phrasing may differ. The disciplinary procedures brought by the Royal Society against two of its own fellows (and signatories) should cease forthwith.

Still worse was the open letter signed by more than 2000 academics and others condemning the "magnificent seven"; I personally know some of the signatories and I honestly thought better of them. Indeed, in the 35 years I have been in Aotearoa New Zealand, this document constitutes the most shameful instance of academic bullying I have witnessed.

Dr Mark Stocker (Christchurch)

FARMING SOLUTIONS

Gary Taylor's *Upfront* (December 11), which disparaged farmers with concerns about the avalanche of regulations we face, needs answering.

Yes, some agricultural sectors, particularly dairy farmers, are now enjoying high returns. But a few years ago, these farmers had two consecutive years of very low payouts when practically every dairy-farm business ran at a loss. Luckily for New Zealand's economic well-being, they survived and now our nation is reaping the benefit from an upturn in world demand for dairy products.

Kiwifruit are also selling well internationally, but the orchards and packhouses are big employers and labour costs are escalating under new labour laws.

Even more worrying is the loss of production and increase in costs that will occur if the Government proceeds with its plan to stop the use of the chemical Hi-Cane, which promotes kiwifruit bud development. With climate change

guaranteeing us warmer winters, the strategic use of Hi-Cane will become more necessary if our kiwifruit industry is to remain viable.

There is also a move to stop farmers using the herbicide glyphosate/Roundup. Both Roundup and Hi-cane are important technologies that farmers now rely on. Without Roundup, cropping would need to return to earlier methods, leading to more erosion, more chemicals, more fuel, more greenhouse gases and higher costs.

Another concern are the large productive sheep and beef farms being planted in trees that will earn carbon credits for their owners so we can keep burning fossil fuels. These enterprises will

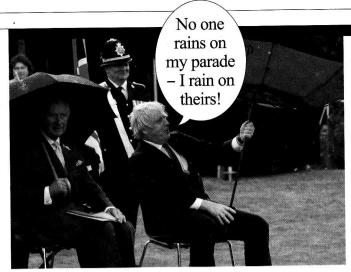
Caption Competition {listenercaption@aremedia.co.nz}

TO ENTER Send your captions for the photo at left to listenercaption@aremedia. co.nz, with "Caption Competition No 442" in the subject line.

Entries must be received by noon, Tuesday, January 11.

THE PRIZE A selected group of writers have chosen a favourite New Zealander to write an essay on. The writers include Lloyd Jones on Paul Melser (potter), Paula Morris on Matiu Rata (politician), Catherine Robertson on Dame Margaret Sparrow (health advocate), and Greg McGee on Ken Gray (All Black).







FINALISTS

Boris Johnson: "Trust me, as leader, I know which way is up." – Juliet Neil, Lyttelton

Police officer musing:
"Hmm ... Charles is better
prepared for the reign than

Boris is." – Bruce Leadley, Timaru

Prince Charles thinking: "Just like his hair ... gone with the wind." - Graeme Bulling



German Chancellor Angela Merkel and Chancellery Minister Helge Braun, right, at the Mathematikum, a hands-on science museum.

Boris: "So what. I turned Europe inside out." – David Field, Rotorua

Charles: "He's only used as a satellite dish." – Richard Laimbeer, Dunedin

Johnson: "This is my new vote catcher:" – Margaret Cannon, Palmerston North

Police officer: "Typical windbag ... no surprises there." - Sorrel Bovett, Kerikeri

a new form of government, which may result in some of the 20-year "gains" being reversed. However, I take issue with the statement "because of our membership of the Five Eyes intelligence alliance, there is less need for physical involvement in troubled regions ..."

Surely it is at least in part because of our membership of this group that we got dragged into this mess, not to mention Vietnam and other conflicts. Some commentators in the UK and Europe are suggesting they will reassess their unquestioning following of the US into conflicts. Perhaps we should be doing the same.

Geoffrey Horne (Wellington)

LIVING WITH TESTOSTERONE

"Sex, lies & stereotypes" (August 14) on the role of testosterone in problematic male behaviour reminded me that in the 1960s, we were taught at school that oestrogen was the most problematic hormone. It was said to cause regular mood fluctuations that made women

unsuitable for any important role in society. I remember thinking at the time that surely testosterone was the hardest hormone to live with, as evidenced by the aggression and crime perpetrated by us males.

The good news, as the article noted, is that humans are self-reflective and have self-control. Testosterone doesn't compel us to assault, murder and rape. If we do so, it is a conscious choice.

David Shapcott (Auckland)

TRANS DEBATE

I feel deeply sorry for children, and for parents, caught up in the trans contagion that has redefined a real problem for a tiny minority, and the personal adjustment issues of many other young people, as a social justice cause (Letters, August 21). I am also angered by the health practitioners who have trashed established understandings of professional roles, and of the protection of minors, for so-called "affirmative care". As well, it is bewildering that the

present debate does not give due acknowledgement to the effects of online sites, peers, schools and the family in shaping children's development.

Attempting to change a child's sex by chemical and surgical means is blatantly "conversion therapy". And quite apart from any unwanted physiological effects of puberty blockers, it is also impossible to arrest human development without psychological consequences, as those who were late developers will likely attest. We know that achieving a mature sexual identity is a journey, and it is relevant that most individuals who initially identify as transgender ultimately adopt a gender identity that is consistent with that assigned at birth.

As with recovered memories, lobotomy and Soviet psychiatry, there's a right and a wrong side of history for health professionals (and for educators) on this one. And isn't it intriguing how the moral certainties of one time and place can so quickly be recognised as professional travesties? With respect to the slipstream for trans children, I know where I would want to be when the regret, reviews and recriminations roll in.

Dr Peter Stanley

Retired counselling psychologist (Tauranga)

SCIENCE AND KNOWLEDGE

It seems self-evident that mātauranga Māori can contribute to an understanding of applied science relating to

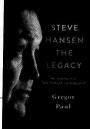
Caption Competition {listenercaption@aremedia.co.nz}

TO ENTER Send your captions for the photo above to listenercaption@aremedia. co.nz, with "Caption Competition No 425" in the subject line.

Alternatively, entries can be posted to "Caption Competition No 425", NZ Listener, PO Box 52122, Kingsland, Auckland 1352.

Entries must be received by noon, Tuesday, September 7.

THE PRIZE Gregor Paul's book on ex-All Blacks coach Sir Steve Hansen, who, in his 15-year career, oversaw an era of such remarkable success that it would be almost impossible to repeat.



Quips& Quotes

"We tell people to follow their dreams, but you can only dream of what you can imagine, and, depending on where you come from, your imagination can be quite limited." - Trevor Noah

"I believe gender is a spectrum, and I fall somewhere between **Channing Tatum and** Winnie the Pooh." - Stephen Colhert

"It is a challenge for people in high-density areas to get outside and spread their legs when they are surrounded by other people." - Chris Hipkins

"You can tell how smart people are by what they laugh at." - Tina Fey

"Bitcoins. Everything you don't understand about money, combined with everything you don't understand about computers." - John Oliver

"People will always bring up 'You're a woman, you've got pink hair."

- Siouxsie Wiles

"Ehara taku toa, he takitahi, he toa takitini." My success should not be bestowed on to me alone. as it was not individual success but success of a collective. - Māori proverb

"Age is of no importance unless you're a cheese." – Billie Burke

"I do wish to go gentle into that good night. Raging against the dying of the light is a pointless exercise, certainly after a reasonably long and very fulfilling life." - Sir Michael Cullen

10 Quick by GABE ATKINSON

1. True or false? The character James Bond has visited New Zealand at least once in the films. films? ☐ True □ False

2. True or false? Tomatoes have been a part of Italian cuisine since Ancient Roman times.

True ☐ False

3. Which of these words may refer to a dessert made with rennet and sweetened milk?

□ Jaunt □ Jamboree

Junket

□ Jaggery

4. Who was New Zealand's Prime Minister at the outbreak of World War II?

☐ Peter Fraser

☐ Sidney Holland

☐ Walter Nash

☐ Michael Joseph Savage

5. Which of these was not a character in the Little Rascals

☐ Opie

□ Spanky

□ Darla □ Alfalfa

6. Which of these diseases still infects a small number of people in the US each year?

☐ Rinderpest ☐ Bubonic plaque

☐ Polio

☐ Smallpox

7. Which musician topped the Billboard charts in the 1970s with the albums Fulfillingness' First Finale and Songs in the Key of Life?

☐ Billy Joel

☐ Carole Kina

☐ Elton John

☐ Stevie Wonder

8. Which film includes the famous Sidney Poitier line:

"They call me Mister Tibbs!" ☐ No Way Out

☐ In the Heat of the Night

☐ To Sir, with Love

☐ Blackboard Jungle

9. Which fruit or vegetable was commonly known as the alligator pear until the early 20th Century?

Pineapple

□ Durian

□ Jackfruit

☐ Avocado

10. Which common English pub name was inspired by a place where the future King Charles II hid to escape Parliamentarian soldiers?

■ Waggon & Horses

Royal Oak

Beehive

☐ Rose & Crown

Answers on page 60.

such areas as the environment and society, especially within a New Zealand context. Equally, science can contribute to an analysis of mātauranga Māori, especially in discussing how much of current knowledge compares with that of 200 years ago, before the influence of any "Western" scientific methods or European traditional knowledge.

It is pernicious of Ministry of Education activists to politicise the curriculum by setting up a conflict between the values of science and mātauranga Māori. It is also disappointing that Dame Anne Salmond (Letters, August 14) should criticise the authors of the original letter (July 31) on the grounds they should not comment on matters outside their own scientific disciplines.

This simply reinforces academic silo culture and suggests we should not listen to anything she has to say outside

the area of Māori studies. That would be unfortunate. If nothing else, surely mātauranga Māori encourages people of all disciplines to sit around the table and discuss the values and consequences of scientific research.

Dr Philip Temple, ONZM (Dunedin)

CK Stead (Letters, August 21) goes to the heart of the matter in the debate over the proposed inclusion of indigenous wisdom inside the science classroom. Nobody would have a problem with traditional Māori knowledge being taught in a history or social studies class, but to place it in the science syllabus represents for many a category mistake. It is the same reason we do not include the study of creationism inside the science classroom.

If students are crying out for spiritual knowledge, as is claimed by Māori, they are at liberty to obtain that knowledge and be persuaded by that knowledge inside the marae or at other appropriate venues, but not inside a secular staterun science seminar room. Church and state need to be kept separate.

Some Māori academics have argued for a two-way approach to research, using examples that involve treating things such as the taniwha in a metaphorical way. What is instructive here is that this is exactly the same kind of manoeuvre liberal theologians play at to keep their own metaphysical enterprise afloat while living against a modern background of quasars, black holes and quantum shifts.

Peter Dornauf (Hamilton)

It is difficult to integrate science and matauranga, a current aspiration, because they have substantial epistemological differences.

Modern mātauranga emphasises integration over separation of knowledge categories, received over hypothesised interpretations and experiential over experimental practice. Science and mātauranga are thus intrinsically contradictory approaches to knowledge that resist both combination and interrogation of one by the other.

Even attempting to align theoretically rational science with matauranga faces a fundamental problem in the monolithic construction of the latter. Mātauranga is conceived as comprehensive of Māori knowledge and intellectual approaches, both of which range beyond natural and social phenomena into magic, ritual and myth. Consequently, where mātauranga equivalence with science is simply assumed, eg, in scientific publication of modern fables about Polynesian voyaging to Antarctica as if they were historical events, both approaches are likely to be compromised.

An alternative is to narrow the scope of matauranga that is brought into comparison, a suggestion with historical precedence. In the 1840s. Edward Shortland found that Māori recognised three knowledge groups: religious knowledge, myths and legends called korero tara (fables) and traditional histories. Only the last were involved in comparative analysis. Competing histories were tested in public, in effect evaluation of multiple hypotheses, to determine where land and other rights lay. Similarly rational approaches are implicit in Māori technology and economic relationships.

Returning to historical categorisation of mātauranga could make parallel consideration with science a more credible field of research and instruction than is currently

likely.

AJ Anderson CNZM, FRSNZ, FAHA, FSA

Professor Emeritus, Australian National University

This dispute has brought to the fore how intolerant much of academia and university management has become to any point of view that is divergent from that which is deemed the "acceptable norm". As the article "Sex, lies & stereotypes" (August 14) notes, "[our] cultural assumptions and beliefs inform... and ... affect the questions we pose and answers we seek" and academic institutions are increasingly ignoring reasoned, open debate in preference for ideologically based positions and black and white "answers".

Two clear cases in point are Massey University's ban/deplatforming of Don Brash and its cancellation of the Feminism 2020 event in Wellington. Life is complex yet often the response is to label contrary perspectives and those who hold them as racist, sexist or transphobic. Satires such as Monty Python's Life of Brian and Four Lions provide the best retort.

As noted in previous letters, staff can face serious employment and promotion issues if the "party line" is not vocally agreed with. This is much more in line with a country under authoritarian rule yet New Zealand universities are becoming prone to it – perhaps due to a fear of being "called out".

To be fair, though, some of the blame must lie with the influence of particular political goals on funding. If an institution has been directed to include a particular objective and has funding predicated upon its implementation, then it is obviously in its self-interest to promote it.

Undoubtedly, many will take issue with what I have written,

but universities should remember it is a very short step from banning books to burning them.

Julius Williams (Palmerston North)

FAIR ECONOMIC RETURN

Arthur Grimes ("Bringing the house down", August 28) sheets home the blame for the housing disaster to the 2018 changes to the Reserve Bank Act. He calls for changes in policy settings to hasten a fall in house prices. But no shift in the "dual mandate" for the Reserve Bank is likely to have any significant impact on the current unfair wealth inequality without radically changing the current tax settings around housing.

As Grimes notes, homeowners and investors have enjoyed vast untaxed gains in recent years. Upgrading the family home to a mansion or purchasing investment properties is a highly tax-advantaged way to accumulate wealth.

The recent Government proposals limiting interest deductions and extending the bright-line test period are horrendously complex and the suggested exemption for new builds means they are unlikely to significantly limit these advantages.

A capital gains tax is politically a dead duck. In any case, future gains may or may not eventuate and any new realised capital gains tax would be too little too late, even if the political environment was supportive. Capital gains that have accumulated already are the problem.

To correct the distorted economic signals around ownership of housing for investment purposes, a sharp shock is needed. But not one that destabilises those families tentatively on the homeownership ladder with a mortgage and impending

rate rises.

Tax consultant Terry
Baucher and I suggested a
circuit breaker in our working paper, The Fair Economic
Return (FER). It is not a new
idea. It says that money held
in property should be treated
as if it were earning interest at
the bank. What is new is setting out the pragmatic way the
FER could be implemented.

So, how would it work? For each property owner, the untaxed housing income (the FER rate times net equity) would be included as part of their taxable income. Any feasible scheme would have to acknowledge the centrality of having one adequate home. However, just making the family home exempt could lead to manipulation of the system. A per-person net equity exemption would relieve the majority of modest homeowners.

One definition of insanity is doing the same thing over and over again expecting different results. That would be an accurate summary of the debates on capital gains tax over the past 30 years. It's time to do something different. We believe it's time for to try a Fair Economic Return approach.

Susan St John and Terry Baucher (Auckland)

BASKET CASE

In response to Adrian Macey's letter (August 7), the Nissan Leaf is not a vehicle, it's a shopping basket.

Alan Hayward (Cambridge)

Letter of the week



DANIEL
KAHNEMAN
MUTHOR OF THINKING, JAST AND ALONE
OLIVIER
SIBONY
CASS R.

The winner will receive this revolutionary exploration of why people make bad judgments and how to make better ones, co-authored by Daniel Kahneman.

To Paul Atkins (CEO RSNZ)

The Fellows, listed below as cosignatories, wish to express their deep concern about what has been happening within the Royal Society of New Zealand over the last year, by moving and seconding the motions below for discussion at the at the 56th hui ā-tau o Ngā Ahurei Annual Fellowship on 28th April.

Many of us have lost confidence in the current Academy Executive and Council, whose actions seemingly have brought the society into disrepute, shutting down useful debate and bringing international opprobrium from leading scientists. We are further concerned about the lack of agency that Fellows have following the many restructures of the Society over the last several years, and the spending of fellowship fees to cover lawyers' costs and, presumably, public relations consultants to defend the Society's very poor processes and actions.

In particular:

- 1. We believe that the content of the initial statement posted by the RSTA on its website in August 2021 about the controversy generated following the Listener letter on the relationship between mātauranga Māori and Science was ill-conceived, hasty and inaccurate in large part.
- 2. We are appalled at the mishandling of the formation of the initial committee set up by RSTA to investigate the complaint, the length of the process, and the handling of the publication of the outcome, which suggests both that the RSTA cannot decide whether mātauranga Māori is or is not Science, and impugned the integrity of two eminent Fellows.
- 3. It is extremely unfortunate that this process has led to the resignation from this Academy of two of its distinguished Fellows. One is a renowned philosopher of science, and the other is perhaps the strongest scientist of Māori descent in the society and is someone who has been active in supporting Māori students in education for decades, and who, along with other experts in Science, offered an expert opinion that was rejected by the Society as being without merit, and characterised as racist by members of the Academy Executive (and current and former Councillors).

We therefore move that:

- 1. Both the Society and Academy write to Professors Cooper and Nola, and to the Estate of Professor Corballis, and apologise for its handling of the entire process.
- 2. The Society reviews its current code of conduct to ensure that this cannot happen again, and in future the actions of the Academy/Council are far more circumspect and considered in regards to complaints concerning contentious matters.
- 3. The entirety of the RSNZ/RSTA entity be reviewed, examining structure and function and alignment with other international academies, and the agency given its Fellows upon whom its reputation rests.

Moved: Gaven Martin (Massey University)

Seconded: Marston Conder (The University of Auckland)

Cosignatories: (in alphabetical order) Marti Anderson (Massey University) Geoff Austin (University of Auckland) Edward Baker (University of Auckland) Debes Bhattacharyya (University of Auckland) Dick Bellamy (University of Auckland) Gillian Brock (University of Auckland) Linda Bryder (University of Auckland) Alan Bollard (Victoria University of Wellington) Brian Boyd (University of Auckland) John Caradus (Grasslanz) Howard Carmichael (University of Auckland) Garth Carnaby (University of Auckland) John Chen (University of Auckland) Mick Clout (University of Auckland) Jill Cornish (University of Auckland) Grant Covic (University of Auckland) Dave Craw (University of Otago) Max Cresswell (Victoria University of Wellington) Fred Davey (retired) Stephen Davies (University of Auckland) Alison Downard (Canterbury Univeristy) Rod Downey (Victoria University of Wellington) Geoffrey Duffy (University of Auckland) Joerg Frauendiener (Otago University)

Stephen Goldson (Agresearch) Rod Gover (University of Auckland) Russell Gray (Max Planck/UoA) Frank Griffin (University of Otago) John Harvey (University of Auckland) Bruce Hayward (Geomarine Research) Janet Holmes (Victoria University of Wellington) Peter Hunter (University of Auckland) John Harper (Victoria University of Wellington) Bruce Hayward (Geomarine Research) Manying Ip (University of Auckland) Mac Jackson (University of Auckland) Geoff Jameson (Massey University) Estate Khmaladze (Victoria University of Wellington) Bakh Khoussainov (University of Auckland) Matt McGlone (Victoria University of Wellington) Neil McNaughton (University of Otago) Miriam Meyerhoff (Oxford University) Michael Neill (University of Auckland) Eamonn O'Brien (University of Auckland) John Ogden (Emeritus Fellow) Jenni Ogden (Emeritus Fellow) Paul Rainey (Max Planck/Massey) Ian Reid, (University of Auckland)

Rob Goldblatt (Victoria University of Wellington)

Mick Roberts (Massey University)

Viviane Robinson (University of Auckland)

Clive Ronson (University of Otago)

Peter Schwerdtfeger (Massey University)

Barry Scott (Massey University)

Charles Semple (Canterbury University)

Vernon Squire (Otago University)

Mike Steel (Canterbury University)

ATS (name withheld until 28 April)

Rupert Sutherland (Victoria University of Wellington)

Jeff Tallon (Victoria University of Wellington)

Matt Visser (Victoria University of Wellington)

Jack Vowles (Victoria University of Wellington)

Joyce Waters (Massey University)

Geoff Whittle (Victoria University of Wellington)

Chris Wild (University of Auckland)

Colin Wilson (Victoria University of Wellington)