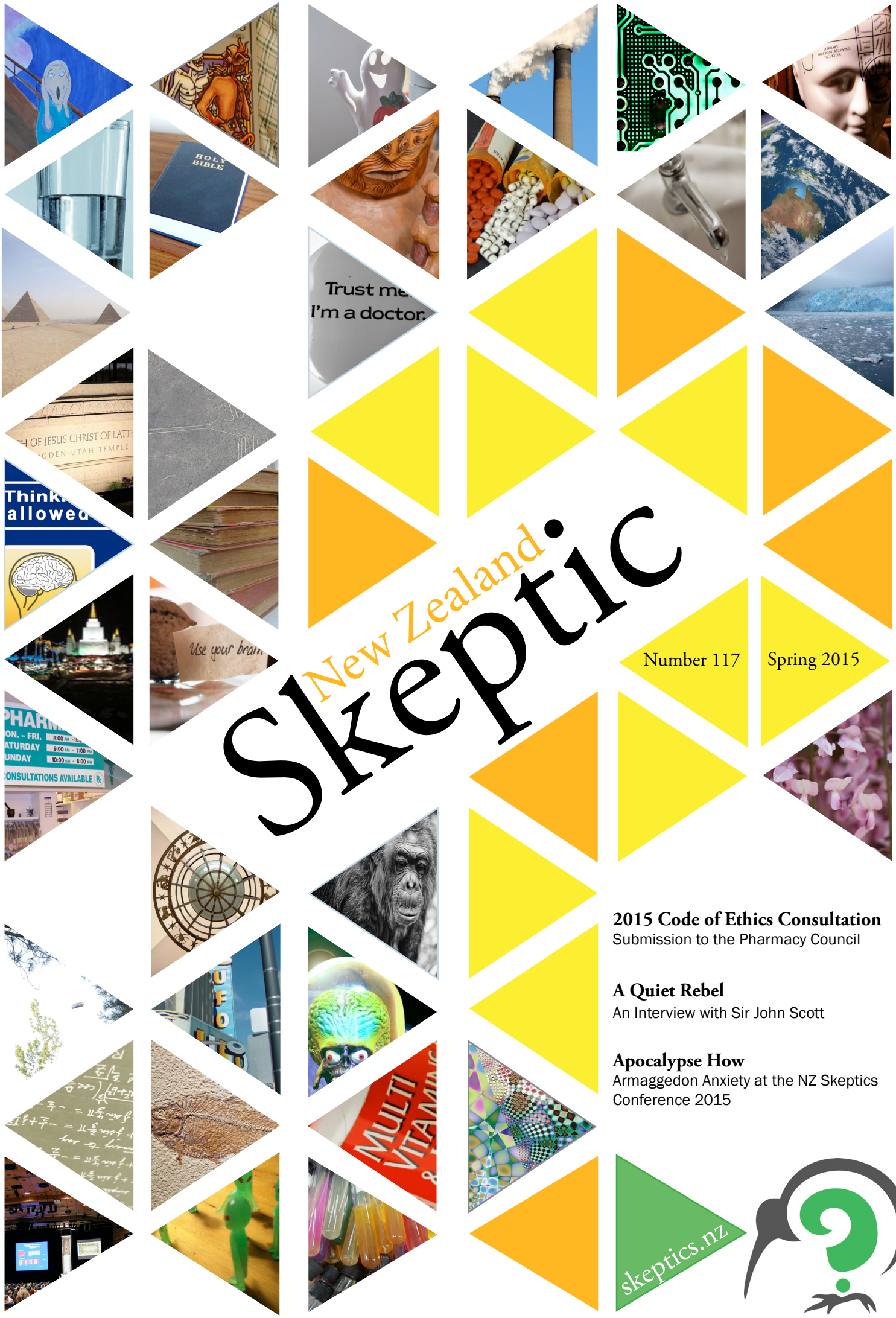

New Zealand Skeptic

Number 117 Spring 2015

2015 Code of Ethics Consultation
Submission to the Pharmacy Council

A Quiet Rebel
An Interview with Sir John Scott

Apocalypse How
Armaggedon Anxiety at the NZ Skeptics Conference 2015

ARTICLE CONTRIBUTIONS
Contributions are welcome and should be sent to:

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Deadline for next issue: 15 January 2016

Letters for the Forum may be edited as space requires – up to 250 words is preferred.
Please indicate the publication and date of all clippings for *Newsfront*.

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All references and citations for this issue can be found at skeptics.nz/journal/117

CONTENTS

THE NEW ZEALAND SKEPTICS

form a network of New Zealanders including scientists, health professionals, teachers, magicians and many others from all walks of life. Members have a variety of religious faiths, economic beliefs and political leanings, but are all interested in examining what objective scientific support there is for claims of such things as psychic abilities, alternative health practices, creationism and other areas where science, pseudo-science and shonky science interact.

WELLINGTON

Follow the Wellington Skeptics Facebook Page

Sign up to *meetup.com/Wellington-Skeptics-in-the-Pub/*

Wellington Skeptics in the Pub
When: Every second Friday, 6pm
Where: Kitty O'Sheas

Wellington SBH Activism
When: Every second Thursday, 6pm
Where: Fork and Brewer

AUCKLAND

Follow the Auckland Skeptics Facebook Page

Auckland Skeptics in the Pub
meetup.com/Auckland-Skeptics-in-the-Pub/

Auckland SBH Activism
When: Every second Thursday, 6pm
Where: Rationalist House

Skeptics in the Pub

SitP across NZ

Dunedin
When: Third Wednesday of the month, 7pm
Where: Dog With Two Tails Cafe
meetup.com/Dunedin-Skeptics-in-the-Pub/

Palmerston North
When: Second Friday of the month, 7pm
Where: The Grand
meetup.com/Palmerston-North-SitP/

Napier
skeptics.meetup.com/cities/nz/napier/

Hamilton
meetup.com/Hamilton-Skeptics-in-the-Pub/

Lisa Taylor is an ESOL tutor and university student from Wellington.
She is the Outreach Officer on the NZ Skeptics Committee.

This issue we have a Guest Editorial piece by Lisa Taylor.
Lisa is a proofreader and writer for *NZ Skeptic*, and is an active member of Wellington's Science-Based Healthcare Activism and the NZ Skeptics Committee.

Photos: Craig Shearer, 2015

In November 2015, the annual New Zealand Skeptics Conference was held in sunshine-filled Christchurch. The weekend was enjoyable, meeting up with skeptics from all over New Zealand, and indeed all over the world. I think the puzzled look on my face when Associate Professor Colin Gavaghan started speaking must have showed how little I think about accents in written text. We had 'spoken' online for a long while before the conference, but I had little to go off accents-wise. It made for an amusing few moments of confusion. In my own defence written text does not have its own accent. Accents are generally spoken about in a linguistic sense; unless someone has written something in the IPA system it would not be clear that an accent other than your own is necessarily involved – (International Phonetic Alphabet, not the beer, sorry!)

Although there was plenty of beer on the Friday night - we had the *Nerd Degree* podcast as our entertainment. We podcasters noted that they were exceptionally better organised and prepared than our own podcasts *Skepticism Today* and *the CUSP*.

Saturday and Sunday were both filled with a number of interesting speakers who simultaneously wowed and horrified us with new diseases we hadn't ever seen before.

Saturday evening had the added excitement of having the Society for Science Based Healthcare's first meeting and they are currently in the process of becoming an incorporated society. I was elected on their committee to be the Secretary. Its purpose is working on ASA complaints and other complaints about various healthcare-based issues in New Zealand – the vast majority of this is battling pseudoscience. SBH also placed a submission into the Pharmacy Council which said in part that "we only support changes that maintain the consumer's right to be properly informed about the evidence for alternative health products."

On Sunday evening we held the AGM for the NZ Skeptics. New members of the committee were voted in and I extend another warm welcome to Clive Hackett, Nichola Williams and Sheree McNatty. It is always good to have fresh blood to keep us vibrant.

When not listening to talks we were given plenty of time for mingling. I was glad for the mingling as I could then put faces to the names I regularly see on the NZ Skeptics Facebook groups. It also meant we could talk to the speakers more about their area of expertise.

A huge thank you must go to the Conference organisers who were absolute stars in their own right. I hope to see you all at the next New Zealand Skeptics Conference which will be hosted by the Southland skeptics who will host us in Queenstown / Invercargill. It will be held in November 2016. Exact dates and times to be confirmed. ❐

Letters to the Forum

Got something to say or something to share?
Email editor@skeptics.nz

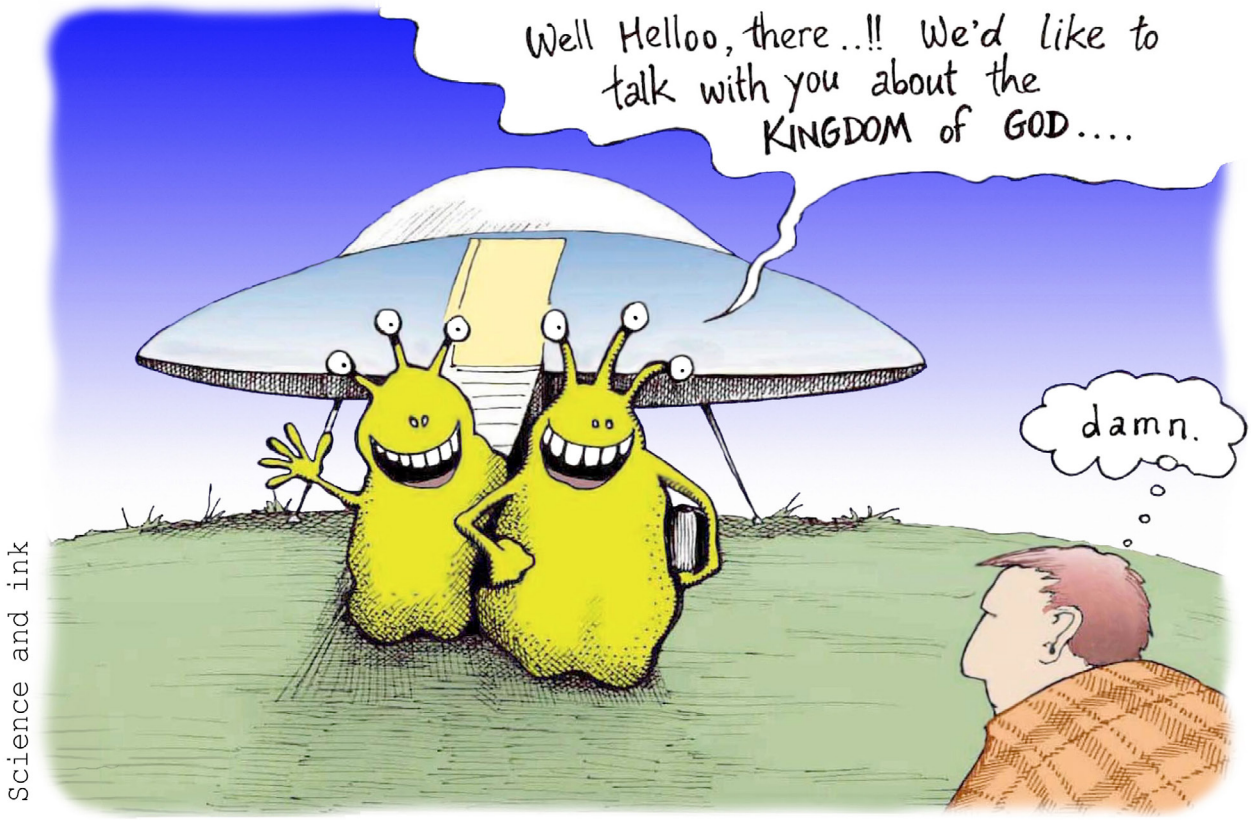
Cosmic Meditation | At first I thought this was a windup (my emphasis) – then I realised it was for real! (and happening in Auckland in September): "*Do you feel you struggle with your vitality? Are you eating healthy and doing all the right things but still feel not quite right? Or would you just like to give your precious organs an extra boost? Join us for the upcoming Cosmic Meditation to give your organs some extra care and experience a powerful evening of an energetic Cosmic Flush...of the slush in your organs.*
This unique experience is guided by the all-knowing Quantum Vortex Scalar Wave Photon Pulse (QVSWPP), the Supreme Grace of Source-Void, Shunya Bindu."
-Judith, *12 Sep 2015*

Count the Blessings | Just to bring to your attention Brian Rudman's excellent column today [NZ Herald, Brian Rudman column, 17 Sep 2015]. I know he has won an award from Skeptics before, and this deserves recognition in my opinion.
-Janelle Wallace, *18 Sep 2015*

Carrie in New York | Hi, a reliable friend sent me a link to a video [Youtube, Telekinetic Coffee Shop Surprise]. Shows how some simple 'telekinetic' stunts can be done to fool people. It came with the following comment:
"Scaring people is hard. Scaring New Yorkers is even harder."
It's clear that the folks behind the prank in this video know a thing or two about how to successfully freak out even the most skeptic seen-it-alls. And what they execute is as impressive as anything you'd find on a high-budget Hollywood set.
-Louette, *1 Nov 2015*

Your Cells are Listening | I regularly listen to my liver screaming after I have exceeded my daily alcohol limit... but seriously ... [Riseearth.com, Your Cells Are Listening] This has all the hallmarks of hokum – somebody suffering and then having an "insight" – what psychologists refer to as "the power of vivid instances". The author's chronic pain was most likely functional (ie. psychogenic) and therefore likely to respond to an attitudinal change of thinking. The reference to Backster and the Polygraph is complete nonsense considering that polygraphy is a pseudoscience. Responses of a plant to thoughts of burning it shows just how random and spurious are the recordings of a polygraph. Whenever the word "quantum" appears you can be sure the person writing it hasn't any idea about quantum theory which is frequently roped in to explain all sorts of hokum. Bastyr University promotes homeopathy as part of its degree program and that condemns any qualification as completely and utterly meaningless.
-John Welch, *3 Nov 2015*

Cartoon by Nick Kim



First Contact. The horror scenario.

Read something of interest? Share it with us.
Email editor@skeptics.nz (Please indicate the publication and date of all clippings)

Quote of the season:

> "Friends from the whole world, thank you for #PrayforParis but we don't need more religion! Our faith goes to music! Kisses! Life! Champagne and joy! #ParisisaboutLife"

-Joann Sfar, cartoonist for Charlie Hebdo

NATIONAL SCIENCE AND RESEARCH INVESTMENT STRATEGY RELEASED BY GOVERNMENT | Stuff, 5 Oct 2015 | The Government is hoping to attract more private money into science and improve how public science grants are spent. Science and Innovation Minister Steven Joyce released the Government's National Statement of Science Investment, its first national science strategy, in Wellington on Monday.

Joyce said the strategy was to support New Zealand's "very proud history" of science and innovation. It would include redesigning of the sector-specific research funds run by the Ministry of Business, Innovation and Employment, which will be consolidated into a single "more agile" fund.

As part of the overhaul, the Government will now produce three-yearly investment plans to signal how, when and why it will make investments. Close scrutiny of what investments are and aren't working was also expected, with annual system performance reports introduced.

Joyce said the changes would make the Government's priorities clearer, while collecting better data on the benefits of science and research.

"All this is about driving better use of the resources we've got, getting better performance measures, then being able to take to Cabinet and the Government a strong, empirical argument for an increase to what's already been strong investment."

Joyce said the Government wanted to "scale up" its funding for public research from $1.5 billion, about 0.65 per cent of GDP, to the OECD average of 0.8 per cent. However, it also wanted private sector investment in research and development to grow to one per cent of GDP by 2025.

"If we're really going to be ensuring that our innovative companies compete and succeed on the world stage, we've got to get our business sector through to around one per cent of GDP."

As part of the strategy, the International Relationships Fund, used to connect our scientists with overseas counterparts, has been redesigned and renamed the Catalyst Fund. While its annual funding of $9.3 million will not be increased, Joyce said changes to the fund would allow it to respond better to "emerging opportunities".

Joyce said the Government also wanted to review core funding of Crown Research Institutes, as it was "probably the funding that has the least strings attached to anybody".

"We effectively write a cheque about once a year to each of the CRIs and say, 'Do your best, come back and tell us what you've spent the money on'."

Plans to establish new regional research institutes specialising in certain sectors, as well as a "strategic refresh" of the Health Research Council, also formed part of the strategy.

Labour science and innovation spokesman David Cunliffe criticised the strategy's lack of ambition.

"There's not enough meat in the sandwich. Typically what you see with Steven Joyce is pretty documents that pull together a lot of stuff that's going on anyway.

While the Government's rhetoric around increasing private R&D investment was welcome, Cunliffe said the strategy lacked anything "that would either incentivise or force a change" to the status quo.

Scientists and others in the sector had told Cunliffe they did not feel listened to during the consultation process, with particular concern about a shortage of funding for postdoctoral fellowships that had not been addressed.

Royal Society president Professor Richard Bedford said the Government's strategy was a "very different document" from a draft statement released last year, and had addressed concerns about a lack of focus on "discovery-led research".

PRAYER TREATMENT FOR ADDICTS | Stuff, 6 Oct 2015 | Prayer is successfully treating alcohol and drug addiction in the Waikato, according to an independent report on a Salvation Army programme.

The Otago University study on the Bridge Programme, which treats 1000 people annually in the Central North Island, also found the programme's recovery rates matched leading national and international treatment programmes.

Dr Tess Patterson, from the university's department of psychological medicine, and Dr Julien Gross, from the psychology department, shared the findings of their research at a Salvation Army symposium in Hamilton on Tuesday. The researchers found an awareness of generic spirituality, not necessarily religion, improved outcomes for participants and that the vast majority of clients valued the role of spirituality in the programme.

Facilitating spiritual well-being , researchers said,

improved outcomes for those on the Bridge Programme, which was run in partnership in the Central North Island with health boards in the Bay of Plenty, Lakes, Taranaki, Tairawhiti and Waikato districts and Ministry of Health funding.

"We all know that spirituality, for a number of years, has been known to be important," Gross said. "Health professionals normally underestimate it. Clients say it's the critical thing."

The doctors, with four Otago University colleagues, asked 478 Bridge Programme clients aged 20 to 73 if they could be studied for a year and 382 consented. Of those, 65 per cent were male and 66 per cent were of European descent.

"These people were problematic users at the high end," Patterson said. Of those, 24 per cent met the criteria for major depression and 14 per cent for other types of depression.

A small number said the Bridge Programme, which people were referred to by health professionals and sometimes referred themselves, has no impact on their spirituality. Others said it was important and their spirituality had changed over the programme.

"It built more spirituality," one participant said. "It made me see better things in life than alcohol."

The programme in the Waikato is run through the Salvation Army's Addiction Services in Hamilton and in the Bay of Plenty through its Tauranga Addiction Services. It employs 40 health professionals in the Central North Island.

Salvation Army Waikato/Midland Bridge Programme director Rob Revan said some clients used a community-based day programme while others required residential treatment.

"Everything is running at capacity," he said. "With this research we will look at how we can do better."

The study found clients who completed treatment experienced a statistically significant reduction in harmful substance use and improvements in their physical and mental health. There were also improvements in clients' perceived quality of life and a reduction in criminal activity and other negative consequences related to substance use.

"Spirituality is a key component of the Bridge Programme," researchers said. "It is expressed through Recovery Church, prayer, spirituality lifters... other, more subtle spiritual aspects of the programme include a focus on meaning and purpose beyond addiction."

Recovery Church is a service aimed at recovering addicts.

'INTO THE RIVER' BAN LIFTED BY FILM AND LITERATURE BOARD | Stuff, 14 Oct 2015 | The New Zealand Film and Literature Board has lifted the ban on Ted Dawe's controversial teen novel *Into the River.* In a decision that was far from unanimous, the president of the board expressed the collective felt the actions of the censor were "illegal".

Board president Don Mathieson delivered a dissenting minority report but the remainder of the board voted to allow the book to be sold without restriction, saying a previous ban on under-14s was no longer justified.

The conservative campaign group Family First are outraged at the decision, with national director Bob McCoskrie describing the ruling a "loss" for New Zealand families.

Award-winning author Ted Dawe on the other hand, couldn't be more "thrilled" and "delighted" by the decision.

"This whole thing has been so entrenched in politics with all the publicity, in many ways I feel as though it's the end of the line for the book now. It can finally do it's job, what it was always supposed to do.

"I believe in freedom of speech, and freedom of expression. Everybody should hold an opinion. Family First are entitled to theirs, just as I am to mine. I don't subscribe to theirs, but they're certainly entitled to one," said Dawe. "Many argued that an R-14 restriction wasn't a ban at all. Of course it was a ban, it was restricting readership. If you're restricting the reader, nobody's going to read it."

Dawe, who felt the ban and subsequent politics surrounding his book detracted from the novel itself, was initially "surprised" by Family First's extreme reaction.

"As an artist, it's our job to hold a mirror up to society. It's not always what we want to see. We have no problem criticising Australia, criticising their history, particularly regarding race relations, yet when it comes to here at home, we expect a very PR version of our own country."

MYSTERIOUS BUBBLES SPOTTED IN WAIKATO RIVER | Stuff, 19 Oct 2015 | An unexplained bubbling in the middle of Waikato River has kept many Facebook users guessing. But the mystery has been solved without a jet ski, or taniwha in sight.

A minute-long video captured by Martin Smith showed a sudden spurt of bubbles in the middle of the river, near The Point in Ngaruawahia. The video has been seen about 160,000 times by Monday morning and shared just over 3000, according to Facebook.

The bow fisherman was stumped as to what it could be - although after he posted his video on Facebook he got suggestions including a freshwater whale.

But the real cause is more mundane: routine cleaning linked to the water treatment plant, the Waikato District Council said.

Smith caught sight of the river's unusual behaviour on his way to work on Saturday morning when he looked back from the nearby bridge.

"Initially I thought it was a jet ski, how they nose dive a jet ski into the water and blow the water back up," he said. "When I never saw anything come up I did a U-turn and went back. I actually thought I'd witnessed a boat going under."

After watching the bubbles a couple of times the Ngaruawahia resident of about eight years decided it was like nothing he'd ever seen, despite frequent bow fishing at The Point.

He went home for his camera and uploaded the footage later the same day. "I just wanted to know if anyone had seen it before and knew what it was," he said. "There's been all sorts of speculation on taniwhas, submarines, fresh

water whales, bull sharks, you name it."

He was amazed at the response, which included hundreds of friend requests from people he didn't know.

Smith was later told by the Waikato District Council that it was a more practical reason: the water treatment plant.

"The filter is being backwashed," waters manager Martin Mould said. "This is standard operational practice and a regular occurrence when cleaning the pipes, so nothing unusual or untoward."

The backwashing happened twice each day automatically, for about 30 seconds each time, but it could happen more regularly if monitoring showed it was needed, he said. The bubbling often happened at the Huntly treatment plant, but it couldn't be seen by public.

Smith said the bubbling was occurring every five or ten minutes on the day he took the video.

"It's hard case because I spoke to a number of people that have lived here all their lives and they've never seen it... It's just one of those things - you've got to be there to see it."

And the element of mystery in the video had caught people's attention, Smith thought.

"If people had realised what it was straight away, I don't think it would have reached the numbers [of views] that it did," he said. "The mystery's solved and the views are dying back."

MORE STRANGE SIGHTINGS ABOVE KAIKOURA | Kaikoura Star, 26 Oct 2015 | Is it a bird? Is it a plane? Is it a drone, microlight, helicopter or balloon?

Not according to Kaikoura resident Debbie Smith who inadvertently photographed the strange phenomenon over the skies last week.

Smith was taking a photo to help with an oil painting. It was not until much later, while going through the photos on her computer, that she realised she had captured two unusual objects in the picture.

"The distance I was standing was so far away that it would be far too big to be a drone. Neither object appears immediately before or after in the sequence of photos I took, and no balloon could move so quickly out of frame."

She did not hear any noise at the time, and she would have noticed if it had been a regular moving object like a bird, Smith said.

"Whatever it is, it must have moved fast."

She contacted Tauranga's UFOCUS group who were very excited when they saw the photo and sent it on to a technical guru for analysis.

Kaikoura's resident astronomer, retired Canterbury University professor Larry Field, inspected the image and even after some image enhancement admitted it looked a bit strange.

It did not conform to the standard drone that looked like a flying saucer because the gear was on top rather than underneath, he said.

This was not the first time Kaikoura's skies had been the subject of such debate - the Kaikoura Lights were famously spotted in December 1978 by a cargo aircraft as well as an Australian TV crew.

In April 2012, things got exciting again with numerous sightings of a strange floating light, until that was debunked, the lights turning out to be paper lanterns.

Then in December 2013, footage of an object flying over the peninsula was posted on YouTube by photographer Martin Kantor. In the end it was presumed to be a bumblebee flying close to the water.

NATURAL HEALTH STORE 'MISLEADS CONSUMERS OVER HOMEOPATHY' | Voxy, 17 Nov 2015 | The Advertising Standards Authority has ruled that ads for homeopathy from New Zealand natural health store HealthPost were misleading.

The Society for Science Based Healthcare complained about three advertisements from HealthPost. The ASA has released its decision to uphold two of these complaints, and to settle the third after the misleading claims identified in the complaint were removed.

The upheld complaints were about two homeopathic products, "Cramp-Stop" and "Colic Calm".

HealthPost had advertised Cramp-Stop as being able to prevent and treat muscle cramp. Neither HealthPost nor the manufacturer of Cramp-Stop, NZ Natural Formulas, was able to supply credible evidence for the claims. The ASA ruled:

> as no substantiation had been provided to support the strong therapeutic claims made, or adequate evidence to support the comparative claim, the original advertisement was likely to mislead the consumer.

Colic Calm was advertised as being proven effective in treating colic. However, neither HealthPost nor Colic Calm's manufacturer were able to supply evidence to back their claims up. As such, the Advertising Standards Authority ruled that:

> as no substantiation had been provided to support the efficacy of the product in helping a "baby's digestive system adjust to new foods and help relieve stomach upset caused by infant teething" it was likely to mislead the consumer.

The complainant, Daniel Ryan, says "It's disappointing that these products have been misleading consumers and exploiting their lack of knowledge that these are nothing more than the placebo effect." Ryan further notes he was happy with the outcome of the complaint, and hopes to see to see more upheld complaints against bad health claims for homeopathy.

The ASA also settled one and upheld two other complaints from the Society for Science Based Healthcare, regarding misleading claims in health ads.

Complaints against homeopathic business Healing Haven and New Zealand online pharmacy Pharmacy Direct, which was advertising ear candles, were upheld.

HealthPost removed strong health claims about a product called Noni Juice when it became clear they were not supported by evidence, resulting in the complaint being settled.

A complaint regarding misleading claims made by Red Seal about dental fluorosis in an ad for their fluoride-free toothpaste was settled, when they removed the claim voluntarily. ❐

Submission to the Pharmacy Council

In early October the NZ Skeptics submitted a response to the Pharmacy Council's consultation on a proposed change to their Code of Ethics. It had recently been pointed out to the Pharmacy Council (by the Society for Science Based Healthcare) that many pharmacies sell unproven health products, in breach of their current Code of Ethics. The Pharmacy Council's proposed solution is to alter their code to remove the part of the clause that is being breached.

In preparation for our submission, we asked all the skeptics on our Alert mailing list to visit their local pharmacy, ask about homeopathy and report back to us with their findings. We'd like to thank all our members who helped us out. The following is our submission to the Pharmacy Council.

The Pharmacy Council's Code of Ethics 2011 appears to be a well written document which puts the wellbeing of the patient front and centre. This can be seen throughout the code, and is embodied in the very first clause:

> 1.1 Take appropriate steps to optimise medicines-related health outcomes for the patient as a fundamental principle of pharmacy practice.

The existing clause 6.9 of the code gives a good level of protection to patients, in that it states that pharmacies should not supply products where there is a lack of evidence of efficacy.

> 6.9 Only purchase, supply or promote any medicine, complementary therapy, herbal remedy or other healthcare product where there is no reason to doubt its quality or safety and when there is credible evidence of efficacy.

In the Pharmacy Council's Consultation Document, the proposed new wording of clause 6.9 of their Code of Ethics splits healthcare products sold in pharmacies into two broad categories: *medicine or herbal remedy*; and *complementary therapy or other healthcare product*.

The reason for this split appears to be an effort to relax the code for the second class of products (complementary therapies and other healthcare products). Effectively, this would remove the code's requirement for there to be "evidence of efficacy" before these products can be supplied by a pharmacist. Instead, the new code only requires that "sufficient information about the product can be provided". As it stands, the existing code appears to be in place to protect patients; any weakening of the code is going to reduce this protection, and that can only be a bad thing.

The Pharmacy Council's vision is "Safe Effective Pharmacy Practice". We believe this proposed change in the Code of Ethics would compromise the "Effective" part of this vision, by making it more likely for individual pharmacies to sell products that do not meet any reasonable standards of credible evidence, and could therefore be reasonably considered to be ineffective.

In the "Background" section of the consultation document, the Pharmacy Council says:

> Over a number of years there has been much debate and discussion regarding the promotion, supply and sale of complementary and/or alternative medicines by pharmacists. This debate has primarily focussed on the efficacy of these therapies.

Given that most pharmacies appear to sell at least some complementary/alternative health products, we presume that this debate and discussion has been around whether pharmacies should stop selling these unproven remedies. The document goes on to say that "Over the past 12-months the level of sector and public interest has notably increased". We are glad to hear that the Pharmacy Council is aware of the concerns people have about the sale of alternative health products, but are concerned that their proposed solution, although it is technically a "fix" for the problem, is a step in the wrong direction.

The Pharmacy Council is faced with the issue of pharmacies' actions conflicting with their Code of Ethics, and changing the code appears to us to be the wrong choice out of the two obvious options the Council has to choose from to help resolve this conflict.

Instead of relaxing their Code of Ethics, we think that the Pharmacy Council should instead consider either putting in place an effective program that is able to ensure pharmacies are abiding by their existing Code of Ethics, or delegate this important function to another organisation that is better suited to the task. We think that a code of ethics that carries no incentive for compliance is not a code that is likely to be adhered to. The following paragraphs show that the existing code has not been followed by what appears to be a significant number of pharmacies, and that there is a need for active management of compliance to the code.

We have a concern that the Pharmacy Council's expectation that "Pharmacists should be able to advise patients about the general use, current state of evidence, associated effectiveness and any safety issues relating to complementary and/or alternative medicines" is unrealistic given the current state of the pharmacy industry, and as such we tasked people around New Zealand with visiting their local pharmacy to ask about homeopathy. We chose homeopathy because there is a strong scientific consensus that homeopathy has no efficacy beyond the placebo effect, and there is no plausible mechanism of action:

"NHMRC concludes that there are no health conditions for which there is reliable evidence that homeopathy is effective" - Australia's National Health and Medical Research Council

"Pharmacists should not sell, recommend, or support the use of homeopathic products" - Royal Australian College of General Practitioners

"PSA does not support the sale of homeopathy products in pharmacy" - Pharmaceutical Society of Australia

"The Royal Pharmaceutical Society believes that there is no evidence from randomised controlled trials for the efficacy of homeopathic products beyond a placebo effect, and no scientific basis for homeopathy" - UK Royal Pharmaceutical Society

"By providing homeopathy on the NHS and allowing MHRA licensing of products which subsequently appear on pharmacy shelves, the Government runs the risk of endorsing homeopathy as an efficacious system of medicine" - House of Commons Evidence Check

"it's an ineffective treatment. It's basically giving a glass of water or a sugar pill to patients, and I think you would consider that unethical" - New Zealand Medical Association Chair

We found that around half of the pharmacies visited had staff that were willing to promote or supply homeopathic products without adequately explaining the current lack of evidence. Worrying statements that were reported to us fell into several broad categories. Firstly, there were recommendations from pharmacy staff:

"It brings the body back into homeostasis"

"I have had a number of people tell me it really helped"

"I asked if it was good - she said that it was very good. I asked if it was effective - she said that they were all effective and that the store sold a lot of those products. I asked if it was as good as prescription medication. She said that the sleeping aids would not knock you right out, but otherwise they were all superior to prescription medication. I asked why they were superior, she said because they can never do any harm and that many prescription remedies cause liver damage and / or addiction."

"When asked if they were as effective, she said that it has to do with your belief system."

"When asked how the homeopathic remedy that she could order in for me works she said that it would help my body to heal itself."

"The staff member told me that these products worked, and that science was starting to show this. She dismissed the idea that they only work as well as placebo, and insisted that they have a real effect."

"I was told by a staff member from behind the prescription counter that homeopathy works, and that its extensive historical use was evidence of this. I was also told that the number of customers they have buying homeopathic products was testament to its efficacy."

"different to normal medicine but with a mix of ingredients that would help"

"I asked about homeopathic sleep drops on the shelf below and was told they definitely work."

"The pharmacist told me that the Weleda Cold & Flu remedy would absolutely help with a cold, and with flu symptoms as well. He said that I should take a large initial dose that would help me recover quicker." "he has no problem with recommending the Weleda products to customers."

"She said that Arnica was an absolute must-have, and then proceeded to take me to a section and offer me several bottles of different concoctions, all of which had 9c or 10c after them, which I recognised as the symbol for incredible amounts of dilution."

"The pharmacist confirmed this was a homeopathic product and then started out by saying they had several mothers that swear by this product."

"was recommended a homeopathic sleep remedy"

"I was told that homeopathy would help with a cold, and that it works 'holistically'. I was also recommended vitamin C, echinacea and aged garlic to treat the symptoms."

"Three products were recommended for a cold. I was told it worked for the staff member's son, better than any other medicine. I was told that echinacea would definitely treat my cold."

"I was told that homeopathic Weleda Echinacea would help lessen the length of a cold, and that homeopathy helps by boosting the immune system. The staff member also tried to sell me high dose vitamin C and a Go-Vir supplement."

Next were staff members who weren't sure what homeopathy was. (In fairness, some of these pharmacies didn't stock homeopathy):

"he was almost totally ignorant of the subject and thought it had active ingredients"

"the assistant had little knowledge or awareness about homeopathy thinking this was instead 'natural' or 'herbal' and directed me to these products instead"

"the younger ones simply had no idea what any of these things were"

"the staff member didn't really seem to know what I was talking about"

"She said because they were natural, I asked her if she knew what was in them or how they worked. She said she would get her manager"

"the assistant had to ask the Pharmacist as she didn't know what homeopathy was"

"She said she wasn't sure, but she thought homeopathic was probably different to natural"

"I was told that there's no chemicals, and instead it's plant extracts."

Several pharmacies were happy to recommend visiting somewhere that would give a more positive outlook on homeopathy and/or a greater range:

"they didn't stock that product, but I could find it at Health 2000"

"suggested I come back tomorrow when the expert on homoeopathy would be in the shop"

"the assistant had little knowledge about homeopathy and referred me to a natural health food shop"

"if a customer wanted homeopathy products she would refer them to a local homeopathy dispenser"

"She recommended "Health 2000" for a greater selection"

"Suggested Simillimum [a local homeopathic dispensary] if I was after homeopathy"

"I was redirected to a local spiritual/natural health store for more range, and told that I would get good advice there."

The full text of the reports we received accompanies this submission as an attachment (named "1.NZSkeptics_Homeopathy-Reports.pdf").

It seems that some pharmacies did not stock homeopathy, but a significant number of others did have homeopathic products on their shelves and in most of these pharmacies staff were willing to offer homeopathy as a viable treatment, with no information offered about a lack of efficacy. It was only on further probing that a subset of these staff members were then willing to share their thoughts that homeopathy isn't generally understood to be effective.

In the main, the reports we received painted a picture that many pharmacies are selling ineffective health products, and that staff are either reluctant to speak their mind about their lack of efficacy or have a mistaken belief that it works. This is echoed by a recent statement attributed to the Pharmacy Council's chairman:

Pharmacy Council chairman Dr Andrew Bary said the rules as they stood were "unworkable" and many pharmacists, including himself, were already selling complementary medicines, even if they didn't believe their claims.

This statement concerns us as it suggests that even the head of the Pharmacy Council does not take the Council's Code of Ethics seriously. With the code being an important patient protection mechanism, we're disappointed to see it so readily disregarded.

Given the evidence we collected of pharmacies offering not just homeopathy, but also other unproven treatments, we wonder if it would be wise for the Pharmacy Council to consider running their own "secret shopper" visits to New Zealand pharmacies to ensure a consistent high standard of service.

As well as these pharmacy visits, a quick search of New Zealand pharmacies online showed a worrying number of pharmacies outright promoting homeopathy for sale. Examples of homeopathy being promoted by these pharmacies online are:

"A popular service we provide are concise acute homeopathic consultations"

> "a range of homeopathic medicines to treat a wide range of illnesses and concerns"
>
> "Homeopathic remedies offer gentle solutions to common complaints without the nasty side effects of many drugs"
>
> "an all-natural allergen-free homoeopathic formula that provides soothing support for wind, colic, upset stomach, bloating and hiccups"
>
> "[Homeopathic] tablets help the body cope with tobacco cravings and are a useful substitute for cigarettes"
>
> "Weleda ARNICA 30C… Used to treat bruising and sprains"
> "Treatments such as homeopathy… may be great avenues to consider if you're suffering from chronic illness."

More information about these websites accompanies this submission as an attachment (named "2.NZSkeptics_ Homeopathy-Online.pdf").

Pharmacies are in a privileged position in today's healthcare industry, where the advice of pharmacy staff is trusted by patients. This position has been well earned, with a long history of highly trained professional pharmacists and other pharmacy staff giving valuable advice to patients. The Pharmacy Council's Code of Ethics says as much in the introduction to Principle 6:

> Patients, colleagues and the public place their trust in you as a pharmacy professional.

This trust will inevitably extend to the products on a pharmacy's shelves - many people will believe that if a pharmacy is selling a product, there must be good evidence of efficacy. People will assume that because pharmacists are known to have the best interests of their patients at heart, they would not be willing to supply anything lacking in clinical evidence of efficacy.

The Pharmacy Council consultation document clearly states that:

> In instances where there is credible evidence to suggest a specific complementary and/or alternative medicine/ product lacks efficacy, pharmacists should not promote or recommend its use.

We agree with this, and think that it would make a valuable addition to the code if "supply" is added. This paragraph regarding products where there is evidence of a lack of efficacy would make a good counterpoint to the existing clause, which talks of products with a lack of evidence of efficacy.

Additionally, as a part of this new clause, we would like to see provision for either the Pharmacy Council or another related body to maintain a list of classes of products where it is deemed that there is credible evidence of a lack of efficacy. This list would both help pharmacies to avoid unintentionally breaching the Council's code of ethics, and would save individual pharmacists having to do their own time consuming research into these products. It is much more efficient, and would be a much more robust solution, if this research was performed once by a group of experts under the care of the Pharmacy Council, and that information was then shared with all pharmacies.

The document says that "It is not Council's intention to endorse or prohibit the supply of any particular complementary and/or alternative medicine or product". Whereas we understand that not endorsing a product is a wise stance, prohibiting the supply of products or classes of products that are ineffective, or even just recommending that pharmacies refrain from supplying them, would seem like a good way to ensure that pharmacies can easily abide by their Code of Ethics without having to try to figure out the Pharmacy Council's intention. We support any measures the Pharmacy Council take that will make it easier for pharmacies to interpret the Council's various codes, and it seems obvious that there is a need for clarity regarding clause 6.9 of the Code of Ethics.

Finally, the Council's consultation document says that "Pharmacists must also respect patients' rights to freedom of choice or autonomy in relation to their treatment options". We hope that the Council understands that people's freedom of choice would not be removed if pharmacies stopped selling unproven treatments. There are many other avenues in New Zealand where patients would continue to be able to purchase these products. As an example, pharmacies generally don't sell therapeutic magnetic bracelets, as these are considered not to be efficacious, but they are still available for New Zealanders to buy at alternative health stores and online sites.

In conclusion, we do not support the Council's wording of the proposed supplementary clause to section 6.9 of the Pharmacy Council Code of Ethics 2011. We are concerned with the Council's motivation for making this change, and would prefer to see the current wording both kept and enforced. We would also like to see a different supplementary clause (6.9b) to the Council's suggested clause added:

> 6.9a Only purchase, supply or promote any medicine, complementary therapy, herbal remedy or other healthcare product where there is no reason to doubt its quality or safety and when there is credible evidence of efficacy.
> 6.9b Do not purchase, supply or promote any medicine, complementary therapy, herbal remedy or other healthcare product where there is credible evidence to suggest it lacks efficacy. A current list of these categories of products can be found on the Pharmacy Council website.

This submission has been prepared by the NZ Skeptics, and is approved by its Committee. ❐

A Quiet Rebel

Sir John Scott

26 June 1931 - 20 October 2015

| by Robert Woolf and Steven Galbraith

In December 1952, letters appeared in the *Otago Daily Times* reporting sightings of Unidentified Flying Objects across the length of New Zealand. The story was apparently quite convincing, as the correspondents were relatively respectable people scattered widely around the country.

Of course it was a hoax, but one that required a significant amount of preparation. Nowadays, with email and social media, one could set up such a prank fairly easily, but in the 1950s the work entailed was considerable. Who would go to the trouble to orchestrate such an elaborate hoax? Why choose the *Otago Daily Times* as the target? And why pull the prank in the first place?

John Scott was an undergraduate medical student at Knox College, Otago University in 1952. He and a circle of friends were angry at the conservative attitude of the *Otago Daily Times*. They didn't like its politics, as it represented the right-wing establishment. As he put it "the *Otago Daily Times* led the charge for the National party." They wanted to do something to discredit it as a reliable source of news.

In an interview earlier this year with NZ Skeptics, John well recalled the events of 1952. He told us that UFOs were the talk of the time, and that there had been "silly articles" about them in the *Otago Daily Times*. John and his circle were unconvinced about the existence of UFOs and thought that these columns were nonsense. So they decided it was timely to perpetrate a hoax and embarrass the newspaper.

John told us: "I wrote instructions. I sort-of controlled it all. We worked out there'd be three in one part of NZ and two in another. They'd go down the coast and back. We had the speed, number, what have you. Because everybody had a bit to write." They had assembled a group of confederates that included university students, doctors and so on.

Everything went smoothly - the designated night was clear and everybody played their part. The *Otago Daily Times* fell for it hook, line and sinker.

They did not feel the need to reveal the hoax at the time, and for many years no one talked about it. Ken Nichol, in response to an article in the Christchurch Press, did reveal that it was a hoax in 1978. But many people then, and even today, were not convinced.

By then, John was focussed on his career in medical research and administration.

"By this stage I'd begun to be interested in medical policy and I was really left-wing. I was very suspicious of the doctors and their motives, and most things they did. In medicine, the more I learned the more corrupt I reckoned it. So I was always on the side of the reformers in medicine."

He dedicated a large part of his career to these goals.

"My motivation ... was to try and keep medicine reasonably clean, in terms of motivation; how it was organised; how it financed itself. It wouldn't fleece the public. Wouldn't be dishonest." Working at the Medical School in Auckland gave him the opportunity to influence the next generation of medics "I was teaching medical students and they had to have a good example, so I tried to give it to them."

So where did this quiet rebel with his strict moral principles come from?

John Scott was born in Auckland in June 26, 1931. His father was a schoolmaster, teaching maths at Seddon College in Auckland and his mother had an arts degree with honours from Canterbury University. John felt he was lucky to have such intelligent parents. His mother had grown up "as a wealthy aristocrat from Canterbury". Her family owned a large amount of land, but they gradually

lost it all, starting when her father died around 1918, and through the Depression. When John was growing up, his mother's left-wing tendencies were apparent and she "quietly raised me to be like a Fabian" (socialist).

His mother's influence was very important. She was impressed by Edward Sayers and his foreshadowing of a national health service. John was also impressed by the idea of public health: "the concept to her was common sense, and me also".

The family moved south from Auckland when John's father was appointed head of Palmerston North Technical College. His mother worked in the Patriotic Shop in Palmerston North.

"We used to walk to and from the shop on Friday. She worked in the shop and we would walk and talk politics. I was indoctrinated if you like."

John was very bright at school and his parents supported his academic interests.

"My IQ was very high. Didn't impress my father one little bit. He knew an IQ was just a set of numbers." He attended Palmerston North Boys High and then, for the last two years of high school, John moved back to Auckland to attend Mt. Albert Grammar School. He recalled some excellent teachers, and told us he was in a very bright class.

"I was nowhere near Dux, I was about 4th or 5th."

He was attracted to mathematics and science (two of his father's cousins were professors of mathematics in England). Initially John thought of studying engineering, but he spent a holiday standing in mud taking levels with a surveyor and "decided engineering was not for me, so I drifted into medicine. My mother had carefully prepared the ground."

He spent his medical intermediate year in Auckland in 1949, followed by 1950-1954 at the Medical School at Otago University. On completion of his studies he had a junior research post in Auckland with John Eccles (later a Nobel prize winner) followed by a registrar job at Auckland Hospital.

In 1958 he went to the UK to conduct medical research. He worked for two and a half years in Birmingham with John Squire, who was an excellent scientist and wonderful supervisor: "He wanted to get to the truth. He didn't kid himself." Rather than accommodate his data to his expectations, he would not be satisfied with ambiguous results. "He'd say "ok that's no good"' and would start again. He was a great man - he was influential."

During this time he worked on lipoproteins, an area in which he established himself as an authority, and was awarded a Doctor of Medicine degree from the University of Birmingham.

John returned to New Zealand in late 1962. He was invited by Douglas Robb and Derek North to help set up the Medical Unit (research facility) in Auckland. He continued research on lipoproteins, as well as teaching and clinical work. His group was the first to show that cholesterol is transported around the body on lipoproteins. His research contributions are well documented elsewhere. As John puts it: "I settled down. Set up a medical unit in Auckland. Derek North and I worked along independent lines: he was a superb organiser, and it was research I liked."

As his career progressed he took on more leadership roles (including Head of Department starting from the late 1970s). John also became interested in medico-legal matters, such as investigations into the conduct of senior clinicians in the hospital.

"I was always prepared to put my head above the parapet and line up my colleagues if I felt they were not behaving ethically." Some of these cases are still embargoed.

"I was always prepared to put my head above the parapet and line up my colleagues if I felt they were not behaving ethically."

Milan Brych (born 1939 in Czechoslovakia) entered New Zealand as a refugee in the late 1960s and claimed to have a medical qualification. He was charismatic, managed to obtained a position at Auckland Hospital, and was soon claiming miraculous success with cancer treatment. Before long he had established a devoted following of former patients.

We asked John about the amazing ease with which Brych got accreditation as a medical practitioner in NZ. John's opinion is that he deliberately hoodwinked senior members of the hospital management. "He works on people very hard. Finds out all about them and their weak points, then he manipulates them. He's got quite a good mind."

Thus a proper verification of Brych's credentials was never performed. "He works quietly away. He works very hard I understand. People think he's a playboy, but he's a lot more than a playboy."

John first heard about Brych after a trip overseas: "I came back and heard about this miracle, but I said miracles don't occur".

Once John's suspicions were raised, he checked up on Brych's claims. "The sequence of events was: I got suspicious of Brych; I questioned him; he was found wanting; I challenged him; he reacted badly. So then I shadowed him. He and I paired off."

However, Brych still had important supporters within the medical establishment who did not doubt his miraculous claims.

"They were hoodwinked."

John recalls that Brych "carried on making millions. Salting it down." It was the dishonesty and corruption, rather than the pseudoscience, that particularly offended John. Brych represented the worst of the corruption in the

medical establishment he had been fighting all his career. So John systematically began to prepare a case against Brych.

"I carried on gathering information. I delved into his background a bit, both in NZ and in his homeland. Anything really. A terrible picture emerged."

After confronting Brych "I found out he was a pretty nasty man. He began to attack the family here, in the house."

John was under huge pressure to back off because of the large amount of time he was spending on investigating Brych. Some colleagues advised him to step back and leave it alone. But John felt he had an international responsibility to stop Brych practicing in NZ. He felt that for the honour of New Zealand's credibility he had to act.

John then went to Europe to investigate Brych's background. He said that Czechoslovakia in the 1970s was a dangerous place to raise difficult questions with the establishment.

"This was big-time politics. Up against the Czech government, secret police, you name it."

Luckily John had some helpers within the country.

"Eccles put me onto Krooter. He's the real hero. He was married to a French woman and couldn't really be touched by the government." (Editor note: We have not been able to confirm the accuracy of this.)

John was then interrogated by Czech government agents. This was a most unpleasant experience. He has tried to obliterate this memory of this and did not want to talk about it, adding that "They took me away in a helicopter. It was horrible."

Despite the travails faced by John in his fight against Brych, he was heartened by support from some most unexpected quarters. He recalled a very helpful woman at the British Embassy in Prague who had worked at Bletchley Park and, it was rumoured, had been Alan Turing's "girlfriend".

She and John continued a correspondence for quite a long time.

"All sorts of people like that popped up along the way. They were fascinating. I was kept going by it. I think they admired that I was prepared to take this on."

John also very much appreciated the support he got from the skeptical community during the worst of the Brych years: "I've been very grateful to the skeptics and the support they gave me over the critical time. It was very important."

John returned to New Zealand having gathered further evidence to support his case against Brych. He said that some medical colleagues were still credulous, noting that "Scales started falling from some of the eyes, but hadn't fallen from others."

John was ultimately successful in his campaign to get Brych struck off the medical register in New Zealand and he was sent packing. Brych then went to the Cook Islands and John eventually drummed him out of there.

Then he went on to the USA: "He was trying to set-up in Texas." John contacted colleagues in the USA and provided them with information about Brych.

"Well, the Americans rapidly got onto that and kicked him out. He came back to New Zealand, then we kicked him out. Landed in Australia, settled in Britain. And in Britain he's quietly working away. Still seeing patients."

At the time of the interview John was in his 80s and had suffered several periods of serious illness.

"I've thought I was going to die three times already. I've stopped apologising to people for my imminent death which then turns into recoveries."

John's clinical and rational approach to medicine continues: "I don't indulge in witchcraft and so on. I'm on orthodox treatment." John mentioned that one of his home-carers is training in homeopathy "I can talk to him while he helps me. I couldn't budge him on some things."

Regarding so-called complementary medicine John told us "I learned to pick out the good bits and to challenge the bad bits."

On summing up his life's work, John says "I was never afraid to speak out for the standards I believed in, even if it meant I was criticised by members of my own profession. I spent much of my life trying to change the views of sections of the medical and legal profession. I did have an agenda to see that the medical profession in New Zealand became responsive to the health needs of the country, to build their responses on empirical evidence and ... to be what the community needs, not what the profession needs. You seek to leave behind a better world than when you started."

One regret John has is not been more public and outspoken in his opinions. "I'm sorry I left it until this late in my career to talk to people".

John's wish is that his vision of an ethical and honourable medical profession will continue to be nurtured.

"I'm trying to make contact with a few students I want to carry the torch. Someone's got to carry on." ❐

"I've been very grateful to the skeptics and the support they gave me over the critical time. It was very important."

Luke Duane Oldfield is a postgraduate student at the University of Waikato. His Masters dissertation is an examination of interest group involvement in comparative politics systems and the consequences for public health policies. When he's not reading, writing or eating burgers there's a high chance he's watching cricket.
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Making Sense of Fluoride is a society that includes scientists, skeptics, teachers, health professionals, students and other individuals, all who have looked at the science and advocate that fluoridation is a significant public health initiative.

The anti-fluoride circus made a new home this spring in the Coromandel locality of Thames (population 6,700). This circus did not feature any elephants though, or monkeys, or even humans performing under duress, neither were there any dramatic highwire acts or somersaults, unless you were to count the verbal gymnastics of those seeking to remove artificial fluoridation from the town's supply. In the hours before the referendum results were released, the Advertising Standards Authority found that Fluoride Free New Zealand (FFNZ) and their supporters had made a series of misleading claims during the campaign.

Aside from the usual scaremongering and complacency in Thames there was a significant issue for us: unlike the previous referenda in Hamilton, Whakatane and Hastings, the Thames ballot was a 'stand alone' postal vote. According to Sivaneswaran (2010), postal votes of this nature typically produce a lower turnout than what could otherwise be expected. Traditionally, these sorts of votes have been favoured by the anti-fluoride groups already known for their savvy organisational skills (Armfield, 2007). The introduction of competing expert opinion has, in the past, been enough to run roughshod over a bewildered public health bureaucracy as a core group of anti-fluoride voters outnumber an apathetic and/or uncertain constituency (Martin et al, 1995).

A disenfranchised public was another concern. In his New York Times bestseller *What's the Matter with Kansas* (2004), Thomas Frank outlines the vicious feedback loop of dwindling economic prosperity that has fed outrage toward government and contempt of even the most innocuous of public health interventions, creating even larger social problems - resistance to community water fluoridation (CWF) is mentioned on three occasions. While Kansas may seem a world away, some of the same problems have besieged Thames in recent years, such as structural changes in the economy that have hurt employment prospects. As such, it's important that proponents of evidence-based initiatives, such as CWF, remain wary of what ideological drivers the anti-fluoridation lobby seek to employ. If the referendum had been reframed as a debate on the role of government in society, we run the risk of confronting a disenfranchised constituency and their proclivity toward populist rhetoric over science, referred to in social psychology as the 'alienation' hypothesis (Sapolsky, 1969).

Fortunately, both of these fears were unrealised. A stunning 55.4% of postal votes were returned, the highest of any stand alone CWF ballot in Australasia with over 70% supporting fluoridation. It appears that other factors superceded that of apathy and a disenfranchised electorate. Firstly, evidence suggests the elderly both favour fluoridation (Holbrook et al, 2001) and are more likely to vote in postal ballots than any other demographic (Karp & Banducci, 2000). Secondly, my own dissertation research suggests that since the 1970s the status quo is usually upheld; if a community already practices CWF then it continues to, if a community does not practice CWF then it typically chooses not to start. Finally, and perhaps ironically, it is probably FFNZ themselves that should be praised for rousing the non opinion. The cameo of misleading advertising hoardings and hostile street protests seemed to raise the ire of town residents who appeared to register their frustrations by voting emphatically to retain CWF. Not to mention a core group of dentists, medical professionals and townsfolk who also did their part to ensure an abnormally high turnout with a well organised campaign of their own.

This leaves FFNZ in a rebuilding phase and underlines why Thames was important in the broader context of fluoridation politics. In previous years, they've bounced back from setbacks and built momentum through the technique of snowballing, starting with smaller towns such as Thames before knocking over larger councils. Consider the decision in July 2011 by Taumarunui (population 5,000) to cease CWF, followed by New Plymouth in October 2011 (population 68,000) and Hamilton (population 150,000) in June 2013. The considerable success of snowballing has also been witnessed abroad too as the anti movement in Colorado, USA convinced two small towns to cease CWF before shifting their sights to Denver , arguing of course that CWF was now out of fashion, an argumentum ad populum.

Back in New Zealand the pendulum seems have to swung back in our favour. Hamilton has reinstated CWF while New Plymouth and Taumarunui councils are reconsidering their position along with a divided Rotorua council who are under increasing pressure from health authorities to act.

So what's the matter with Thames? Well, the pressures facing regional New Zealand remain; however the referendum result suggests we can comfortably overcome a disenfranchised electorate and a significant non-opinion, provided our message is clearer, better coordinated and seemingly more credible than that of our opponents. Hardly a groundbreaking message, sure, but no one really knows where the FFNZ circus is headed. Will we be as ready at their next stop? ❐

From the NZ Skeptics Conference November 2015...

Apocalypse How

or: How I Learned to Stop Worrying and Avoid Armageddon Anxiety

| by Vicki Hyde

Remember all those times when the world came to end? No? Well I do, because in 18 years of leading the New Zealand Skeptics, I was called on almost every time to comment on whether we'd really cop it from the next rendition of the rapture, the approaching asteroid, global goobies, sociopathic software, eugenics and genetic engineering, planetary patterns or yes, even gay marriage.

We're not dead yet. But it's not for want of enthusiasm in the armageddon arena. Claims that the end of the world is coming hit the main headlines pretty much every 18 months, and they can result in people selling houses, taking kids out of school, giving businesses away, euthanizing their pets; all on the basis of some bloke's biblical numerology or alien contact or precognitive vision. And, when they get it wrong – which is every time so far – the True Believers wait for the recalculation and revise the timeline for the next arrival of Armageddon.

There's a long list on Wikipedia for end-of-the-world dates. One early example concerned some apocalyptic Anabaptists who took over the German town of Munster in the 1530s. It did not end well. One man declared himself to be the Messiah of the last days with Christ set to return real soon; he went on to take 16 wives; instituted summary execution; and he and his cronies lived the high life while the rest of the town was left to starve. It ended in a bloody siege in 1535, with the ring-leaders ripped to pieces with red hot tongs and their bodies hoisted up in cages to rot; one had his genitals nailed to the town gate to serve as a salutary example.

Not that the example took. In 1843, the Second Coming predictions of New York farmer William Miller spread far and wide – thanks in part to 600,000 promotional newspapers distributed across New York alone. When nothing came of that prediction, Miller followed it up with revised dates for spring 1844, then a re-re-revised date of October 22 1844.

Even with the well-publicised failures under his belt by that point, Miller's prophecy saw 100,000 people get ready for the end of time that October day. When that came to be labelled the Great Disappointment, for obvious reasons, it still didn't seem to dim the enthusiasm for further predictions of Christ's imminent arrival, such predictions being made by the various spin-off groups and other visionaries in 1874, 1914, 1959, 1975….and so it goes.

Miller's efforts inspired the formation of the Jehovah Witnesses and Seventh Day Adventists; the Bah'ais picked up some of his ideas. Possibly the most notorious spin-off was the Branch Davidians, one off-shoot of which was wiped out in the 1993 Waco Texas stand-off led by David Koresh who believed the world was doomed by a coming nuclear war.

More recently, American Christian radio broadcaster Harold Camping got a lot of attention, and a lot of donations, predicting the rapture for May 21st 2011, with the destruction of the world to follow via fire, brimstone and plagues culminating on October 21st that year. What wasn't so widely publicised were his earlier contentions that Judgement Day would arrive on March 21st 1988 and then September 6 1994.

As per common practice, yet another reinterpretation followed when the 2011 rapture failed to arrive. When asked would he return the money his company had taken in from those people he had taken in – said to be as much as $40 million dollars – Camping's response was "We're not at the end. Why would we return it?"

Perhaps some comfort can be derived by noting that Camping's Family Radio network was said to have suffered significant loss of assets, staff and revenue. As for other consequences of Camping's Great Disappointment, I guess I can be pleased that I saw only saw two reports of suicides related to the fears that man raised. One Russian teenager hung herself terrified that she was not righteous enough to be one of the saved: "Whales are trying to beach themselves and birds are dying – it is just the beginning of the end," she wrote in her last diary entry. "We are not righteous people, only they will go to heaven, the others will stay here on Earth to go through terrible sufferings. I don't want to die like the others. That's why I'll die now."

Apocalyptic visions have not been restricted to those with religious fervour – every time a planetary alignment comes up there are predictions of gravitational waves shredding the Earth, and nearby comets are also good news for doomsayers.

Science writer John Gribbin is still embarrassed by his 1974 book *The Jupiter Effect*, which predicted major catastrophes on Earth based on planetary alignments. That prediction was set for March 10 1982, eight years from publication, so the book sold well, at least in its initial print run. When the Earth failed to fall apart on time, Gribbin and his co-author put out a book theorising that the effect had actually taken place in 1980 with little show for it, though they did claim it caused the eruption of Mount St Helens. By 1999, Gribbin became one of very few apocalypters to actually say he was sorry he had had anything to do with his doomsday idea.

A more plausible doomsday was that predicted as a result of the Y2K bug. After all, there were reasonable grounds for concern and identifiable mechanisms to create the widespread problems predicted as a result of the failure on the part of software developers to look far enough into the future.

We'll never know how much of that was averted by the measures taken to ameliorate the issue – something which global pandemic warnings have to contend with as well – but we do know that some of the anticipated outcomes occurred, albeit at a very small scale. My main memory of Y2K fallout is of coming home late from the Split Enz concert in Auckland that night to find my kids all collected together around their grandmother's bed waiting, as one put it, "to hear the sound electricity made when it died".

In 2012, I had lots of correspondence from school students, many doing assignments on the Mayan calendar which was thought to have predicted the end of the world for December 21 2012. Some were genuinely concerned that there was something in the hype, and were clearly looking for some reassurance.

The idea went that the Long Count calendar put together by some very talented ancient Mayan astronomers would run out after 5,126 years, somehow causing a global catastrophe. I spent much of that year pointing out that my office calendar ran out every year but that didn't mean I didn't have to get back to work after the New Year holidays.

Then the calendar apocalypse was joined by the alleged rogue planet Nibiru said to be heading towards Earth on a collision course. Then this all got jumbled up with Nostradamus predictions, Christian, spiritualist and even Native American beliefs. Predictions of reversals of the Earth's magnetic field were conflated with claims that the poles themselves would tip over. Solar storm watchers expected something big to happen and, if that wasn't big enough, the Solar alignment with the galactic centre or possibly the Milky Way Dark Rift was going to zap the entire galaxy. All this stuff was going down on December 21 2012. Remember that?

Closer to home, some time this month three mountain-sized asteroids are to create massive earthquakes and 600-metre high tsunamis wiping out everyone around the Pacific unless they move 500km inland. This information was apparently provided by "conscious aware light energy beings" who kindly urged that the warning be passed on to people in positions of authority in New Zealand.

Consider this your warning – you have a choice, stay here and wait for the impact or head for Twizel now. Actually, not even Twizel is going to help….

As a susceptible teenager I was hooked on the British drama series *Survivors*. While most of my teen confreres were worrying about getting enough tartan in their life to attend the Bay City Rollers concert, I was worrying about how to make matches and whether I could talk a fortified village into taking me in despite my appalling eyesight.

Of course pandemic concerns haven't gone away, what with SARs, swine flu and bird flu. I confess to sniggering a bit when my husband stocked up on Tamiflu and bought a box of face masks, just in case – though the latter did come in handy in the sewage dust-storms we had after the February earthquake.

I did get taken to task by one radio listener late last year, who chastised me for my "relaxed approach" to the exponential threat of Ebola. He went on to say:

> Top hospitals seem taxed to handle one or two cases, and fail at that. How would they handle 10, 100, 1000, 10,000? I would've thought with your knowledge of the 14th century Plague, 1918 flu epidemic etc you might be somewhat more realistic/pessimistic.

My response was to say that I was not particularly sanguine about Ebola, but that I did have concerns about kids here in New Zealand who were having panic attacks about the potential for catching it due to the over-hyped way in which it was being reported – and a time when we have distressingly low rates of immunisation and distressingly high rates of child poverty and abuse.

It's sad, I told him, that it has really taken having one case in Europe and a couple of cases in the US to get some solid research into possible vaccines and better treatment programmes for what has always been an African-based disease, no doubt helped by a couple of popular movies/books on Ebola (and its cousin Marburg) which has meant that it had some "presence" in the Western social meme.

Yet the single biggest simple thing we can do to reduce mortality in Africa is widespread distribution of mosquito nets to prevent malaria. Really cheap, really easy, really under-supported.

And I reminded him that Ebola is relatively hard to catch compared to many infectious diseases; measles has around 8 times the transmissibility for example, and killed 122,000 people in 2012; 2.6 million annually before widespread vaccination came in. But relatively few of those deaths occurred in the West, so we tend to ignore it as a health issue.

As of the time of writing, the models for sustained growth suggested 10,000 cases per week by the end of that November – I concluded that I'd walk out on a limb and predict that it wouldn't get to that. I guess I continue to be optimistic about people's ability to react and respond appropriately to major threats.

Let's hope I'm right! I said. And, yes, I was. That time. But the epidemiologists tell us that there will be come a time when the fears will be justified. Whether from antibiotic-resistant bacteria, superflu strains or maybe a

really nasty Ebola variant, there is the chance that we will one day face the same kind of challenges our ancestors did in plague-ridden Europe or smallpox-ridden Oceania.

I'm often asked why apocalyptic visions capture the hearts of some as well as the headlines. As a species we have a negativity bias which makes us imagine the worst is going to happen. That has its uses, evolutionarily speaking, in making us a little more cautious about things, but it also has its problems.

We're also prone to paying attention to authority figures, and giving up our autonomy to those who seem to have the answers. Not so good if the answer is to leave this earthly plane to join the alien spacecraft hiding behind the approaching comet. Thirty-six people died that way in the Heaven's Gate cult led by Marshall Heppelwhite.

Of course, you can see the benefit to those authority figures – usually, but not always, males. There's immense psychological power and a good deal of egoistic, economic and sexual goodies to be had. They may genuinely believe they have secret information from God, aliens, ancient civilisations. But they may also be suffering from delusional paranoia. Jim Jones was a highly dangerous example of that, and 918 people died as a result.

What these apocalypters present is a sense of certainty about the future. They appear to have a line to special knowledge and this attracts people, especially the psychologically vulnerable or the under-educated.

Personally I think it's pretty culturally offensive for people with no knowledge of Mayan mythos, anthropology or cultural practices to reinterpret that civilisation to suit their own ends. In much the same way that was done to them by people supporting the ancient astronaut claims of the likes of Erik von Daniken, or the apocalyptic pseudo-geology of Graham Hancock.

I do have some optimism for the future – as more and more of these events are promulgated through the internet, more and more of them are seen by everyone to be false alarms. *Snopes* has done a lot to explain many of the urban legends out there, as have people like Phil Plaitt with his *Bad Astronomy* site. There is hope that such stories will increasingly be filed under the weird news category, not as national news. This may be inoculating the digital generation through a form of desensitization therapy. Or, to put it less technically: familiarity breeds contempt. Of course, as a conscientious skeptic I do have to allow for a smidgen of uncertainty. It would be arrogant to assume we know everything and can, ourselves, predict the future with absolute certainty.

Maybe one day a doomsdayer will get it right and NASA and all the other space-watchers will have missed a huge comet hurtling towards Earth. Maybe someone will finally crack the Bible's real coded message and accurately predict the Second Coming. Maybe the next AI breakthrough will bring us Skynet and the world of the Terminator.

But I'm not going to worry about it.

What I do worry about is the many people harmed – economically, psychologically, and physically – by doomsday prophecies; far more harm has been caused by that than by the purported outcomes of those prophecies.

whatstheharm.net – a valuable resource I urge you all to bookmark – lists news reports covering over 1,800 people harmed through fears of the apocalypse – mostly murders and suicides occasioned by beliefs in the end-times, whether religiously based or New Age fantasy.

I was worried in the 90s when we had a Minister for Civil Defence who stated that he wasn't too worried about our lack of preparedness for a major disaster as the end time was almost upon us in any case.

What worries me is having my children come home frightened because a man on the bus said there was going to be more huge earthquakes in our city – he later contacted me and spoke at length about his research which sounded quite plausible up to the point when he mentioned he was waving a crystal over a map to get his data. I asked him for some specific predictions, which he supplied. I also asked him how many times he would have to get it wrong before he would begin to consider that his crystal wasn't providing any useful information. Fortunately the magnitude 9 whoppers he predicted did not eventuate, and he didn't call back.

I felt sorry for the believers who sold their businesses and their homes in New Zealand and abroad, to meet the end of the world predicted by a Korean fraudster. I guess one thing to be said for him: at least he didn't tell his followers to bring their world to a real end by mass suicide. It's been known to happen.

Mainly I believe that it is vital for people to use critical thinking skills and to take a stand when they see dangerous beliefs being promulgated unquestioningly – Western history would be a lot happier if people had done this when women were said to have no souls, when Jews were said to be murdering Christian babies, or when blacks were said to be intellectually inferior to whites.

I recently read a schlock piece of fiction positing the San Andreas fault finally letting rip – by the end of the first 24 hours there was mass rape, murder and cannibalism occurring throughout San Francisco. I'd like to think that the pop-up energy and community kindness we experienced in Christchurch from 2011 onwards are more reflective of the normal response to a local world-shattering event.

To end on a poetical footing, perhaps Robert Frost had the most lyrical warning for us as to the real danger underlying apocalyptic fears:

Some say the world will end in fire,
Some say in ice.
From what I've tasted of desire
I hold with those who favour fire.
But if it had to perish twice,
I think I know enough of hate
To say that for destruction ice
Is also great
And would suffice. ❐

Alison Campbell has expertise in the disparate fields of animal behaviour and science education, with a particular interest in students' understanding of the language of science; gaps in student knowledge (and how to bridge them); and attitudes to the theory of evolution. Read her *BioBlog* at sci.waikato.ac.nz/bioblog/

Oh sad new world,
that has such foolishness in it!

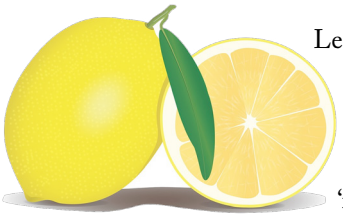
The internet is a seething pool of 'stuff', and one of the challenges faced by those using it is to distinguish useful information from foolish fantasy. And there surely is a lot of the latter! Thus we find that...

According to a BBC news story, the Indian government's Agriculture Minister has said that yogic farming would "empower the seeds with the help of positive thinking", and that this "would help improve yield and soil fertility and contribute to making India prosperous."

This has been quite widely reported, with more details of the Minister's comments given in the *Indian Express,* including this one:

> The idea is to help farmers. With the help of Rajyog [yogic practices], we should enhance fertility of the soil. It will help activity of micro-organisms in the soil too.

Somehow I can't see magical thinking having much effect on seeds, fungi, protozoa, or bacteria...



Lemons neutralise acidity. Yes, you read that right. This bit of mythinformation keeps popping up on various 'natural health' sites - (naturalbodyhealing.com/balance-your-body-ph-levels.html). These sites all make the same claims: that the stresses of modern life put the body's pH out of whack, and that various foods can fix the problem. Some even going so far as to suggest that eating the 'right' ie. 'alkaline' foods will help to prevent or cure cancer (Green Med Info: Why An Alkaline Approach Can Successfully Cure Cancer). And for some weird reason lemons are listed as a food that will neutralise that pesky acidity and set the body to rights. (The site above also lists pineapples, limes, oranges, tangerines, kiwifruit, and vinegar as foods that will make your tissues more alkaline.)

The fact that lemons contain citric acid, that anything ingested must pass through the highly acidic environment of the stomach, and that the body does an excellent job of maintaining a constant pH environment around its cells - all this is happily ignored. Luckily there are science bloggers out there who do an excellent job of addressing this nonsense - Dr Kat Day's *The Chronicle Flask* is one of them, and you should go there now and read her great explanation of why lemons are not going to neutralise acidity, and why claims to the contrary are nonsensical.

And if your DNA's been damaged by exposure to fluoride, never fear! For you can repair that damage by reprogramming water's memory, or so a commenter on the *Girl Against Fluoride*'s FB page would have others believe. You have to distill the water first:

> The forced medication [community water fluoridation] corrupts our DNA, Distilling the water clears any memory in the water, which then allows you to reprogram it.

And how does that work? Apparently you can

> reprogram the memory in it with a water proof speaker. Play the 528hz tone in the distilled water. The distilled water will absorb the vibration and change the structure of the water molecules. This water will help repair your DNA.

So here we have an example of someone who doesn't understand chemistry and also believes in homeopathy (the first is pretty much required for the second). Their thinking seems to be in line with the dangerously crazy idea, promoted by some homeopaths, that homeopathic 'remedies' can be delivered via mp3 recordings.

And the idea that water's 'structure' can be modified by good or bad vibrations seems to hark back to the claims made by one Dr Emoto, who claimed that he could distinguish between ice crystals depending on whether they'd been the subject of good or bad 'intent'. Orac did a thorough dissection of these claims back in 2009 at *Respectful Insolence* (Dr Emoto's Water Woo Metastasizes) so it would appear that some woo never changes. ❐

Steven Novella, MD, is an academic clinical neurologist at the Yale University School of Medicine. He is also the president and co-founder of the New England Skeptical Society, the host and producer of the popular weekly science podcast The Skeptics' Guide to the Universe, the author of the *NeuroLogica Blog* and founder of Science-Based Medicine.

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Low Energy Sweeteners and Weight Control

A new systematic review published in the *International Journal of Obesity* looks at the totality of evidence investigating whether consuming low energy sweeteners (LES), such as aspartame, sucralose, or stevia, is a net benefit or detriment for weight control.

In addition to providing some clarity on the answer, the review also provides some insight into how different kinds of evidence address such questions.

The question may at first seem obvious – if you consume a beverage sweetened with an LES instead of sugar you will be avoiding up to several hundred calories. Those calories add up quickly. Twelve ounces of cola with sugar has 138 calories, for example. These are foods that people generally consume on a daily basis, and so avoiding these unnecessary calories should reduce total energy intake and help reduce or maintain weight.

The human body, however, is a complex system, as is human psychology, and so we have to consider the law of unintended consequences. It is possible, for example, that when people drink a diet beverage they feel they have earned the right to consume more calories elsewhere. This phenomenon is called compensation, and there is evidence for this effect.

It is also possible that consuming a food or beverage that tastes sweet but contains no or few calories will trick or confuse the brain, separating the sensation of sweetness with the ingestion of calories. This may lead to a craving for more calories. There are also studies showing the existence of sweet receptors in the GI tract, and activating these receptors may stimulate appetite.

Types of evidence

There are basically three types of research that address the question of whether or not consuming LES results in a net increase or decrease in total caloric intake.

The first is animal studies, mostly in rats. Rats can be fed water sweetened with sugar or an LES and then given access to as much food as they want to eat (ad libitum).

The advantage of rat studies is that the experimenters have total control over the animals. They can record everything they consume, control everything they do, and record the results. The disadvantage of rat studies is that rats are not people.

There are two types of studies of LES in humans: cohort studies and controlled experiments. In cohort studies groups of people who consume or don't consume LES are followed with their caloric intake and weight tracked. The advantage of such studies is that they are plausible to do for a long period with many subjects, and they are a real-world observation. The big disadvantage, however, is that it is difficult to make any conclusions about cause and effect. Specifically, if people who are overweight consume more LES, do they consume LES because they are trying to lose weight, or are they overweight because they consume LES?

The best type of data are controlled experiments in which people are randomized and blinded to either LES, sugar, or unsweetened water. The advantage to this type of data is that you can make confident conclusions about cause and effect. The disadvantage is that they are more difficult to conduct, and therefore may be small or short term.

The systematic review

The authors of the current review looked at all three types of studies. It was their intent to do the first systematic review looking at the totality of evidence addressing this question. Here is what they found:

Rat studies generally show no advantage to LES in terms of calorie intake, and some even show a disadvantage:

> In 62 of 90 animal studies exposure to LES did not affect or decreased BW. Of 28 reporting increased BW, 19 compared LES with glucose exposure using a specific 'learning' paradigm.

For the animal studies the bottom line is that most showed no effect on body weight or energy intake. Some of the studies did show a decrease in weight and caloric intake, but these studies tended to use doses of LES 10-100 times

what a human would typically consume.

The "learning" paradigm is an interesting subset of studies, some of which do show increased weight in rats fed LES vs sugar with a moderately sweetened feed. The authors conclude that there does appear to be an effect here, but the problem is its applicability to humans. The experimental setup is contrived, exposing rats to a food source they are not used to. One hypothesis is that the LES sweetened water may make the food more palatable to the rats, so they consume more.

Incidentally, most often when I see a headline declaring the LES cause weight gain, it is this type of animal study. Let's get to the human studies to see if these rat studies are likely to be applicable.

> Twelve prospective cohort studies in humans reported inconsistent associations between LES use and body mass index.
>
> In total there were six comparisons in adults and five in children. The random effects model showed no change in BMI with LES consumption. However, there was a high level of heterogeneity [diversity] among the studies.

The bottom line with these types of studies, it seems, is that they are a wash. Results are all over the place, consistent with either random noise or various confounding factors that differ from study to study.

Human experiments were divided into short and long term studies. The short term studies looked at LES consumption on the caloric intake of a single meal. There is some variability in these studies depending on specific methods used, but the authors give this bottom line:

> In sum the results of these short-term studies comprise a large body of evidence showing that consumption of LES in place of sugar reduces overall EI [energy intake] acutely, with no indication that LES increase appetite.

So short term there is an advantage to consuming LES vs sugar, but this leaves open concern for long term compensation effects. The authors point out that these short term studies do show compensation, meaning that consuming LES was associated with consuming more calories in the following meal, but those calories were less than the calories avoided by not consuming sugar.

The long term studies were mostly in overweight or obese subjects, followed subjects from between 10 days and three years, were mostly in adults, and some were in the context of a weight loss diet. The authors found:

> In all cases, the use of LES led to a relative reduction in EI, and greater loss (or reduced gain) of BW. Notably, there was no example of a sustained exposure intervention trial where LES use led to a relative increase in mean EI or BW. This was supported quantitatively by the results of the meta-analyses of BW change, indicating lower relative BWs in LES intervention arms [groups]. Furthermore, outcomes were similar in studies with children and adults, and followed a similar pattern whether participants were blinded or not blinded to the intervention. Consumption of LES-sweetened beverages also reduced BW relative to consumption of water.

The results are fairly consistent, differing only in the magnitude of the effect – consuming LES vs sugar or water was associated with a reduction in energy intake and body weight. I was a bit surprised about the advantage vs water, as water is also zero calorie. This implies that drinking a sweet beverage vs an unsweetened beverage allows for lower overall calorie consumption.

Conclusion: Low energy sweeteners probably help with weight control

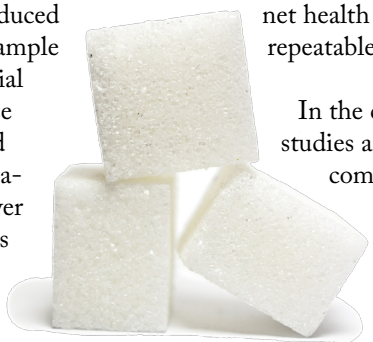
The results of this systematic review and meta-analysis are quite compelling. In my opinion, human experimental studies trump observational studies, studies in animals, or basic science studies looking at possible mechanisms.

In this case, despite confusing results from many types of studies, the best evidence consistently indicates that consuming LES results in reduced energy intake and reduced weight compared to either consuming sugar-sweetened beverages or even water. There does appear to be room for further rigorous studies, but this is the best conclusion we can currently make based upon all the evidence, and it is fairly consistent and robust.

In retrospect, and not only with the question of LES but with many health questions, these types of studies should be considered with a heavy dose of skepticism. There is a reason why skeptics and proponents of SBM don't find such studies definitive, because history has shown they are often misleading.

What is compelling is controlled blinded experiments looking at the relevant net health effects of an intervention. Until we see consistent results from rigorous studies of this type, it is best to reserve judgement. I don't find extrapolations from basic science or animal studies to be compelling – history has shown they are simply not reliable. However, such studies do serve a useful purpose in designing clinical trials and informing our choices about which interventions are worth studying.

Unfortunately, wild extrapolation from basic science is common in nutrition self-help books. Diets are justified based upon studies showing the effects of insulin, or the presence of receptors. The human body, however, is too complex to be able to draw a straight line from these starting points to a net clinical effect. There are simply too many compensatory mechanisms and feedback loops in biology. We always need clinical studies looking at net health outcomes, and they need to be rigorous and repeatable.



In the case of LES and weight control, the clinical studies are giving us a consistent answer. Initial common sense actually holds up in this case – not consuming extra calories in the form of sugar-sweetened beverages or food is a good way to reduce calorie intake and manage weight. ❐

Matthew Willey works in schools as an adviser for children with disabilities. He lives in Palmerston North with his family, who tolerate his enthusiasm for skepticism with a kindly forbearance. He is English, but losing the accent.
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With its scenic miniature railway, the National Rugby Museum and the country's second-largest ball of string, Palmerston North is often wrongly described as "the Armpit of New Zealand".

When Massey University is in session, the IQ of the city as a whole nears average, and from this rich intellectual demographic Palmerston North Skeptics in the Pub draws its intellectual muscle.

We have been running PNSitP (pronounced "penis tip") since January 2011 which, as alert readers will see, adds up to literally hundreds of monthly meetups for the group. When I say group, I mean myself; an obelisk that has stood the test of time as a cast of characters had ebbed and flowed around it.

The group goes through cycles which reflect both the vagaries of word-of-mouth and my lack of interest in creating publicity. We have had at times a very large group, with meetings of fifteen or twenty showing up for special events. (We resist unfair comparisons with a local church, which has four hundred regularly turning up to its uninsulated hall and even then paying tithes).

A notable occasion was when a Christian evangelist challenged the PNSitP to a public debate on morality: "Is there such a thing as objective morality without God?" We filled the top deck of the Tomato Café to see how this would proceed, and we were not disappointed.

To their credit, the two evangelists who turned up played by the rules. "The Bible does NOT prove your point!" we said from the outset. Whatever they offered us was to come from other sources than revelation, and they did their level best with this constraint.

That was truly a great evening, with both sides showing mutual respect, but at the same time asking very focused and interesting questions. One altercation saw the evangelist saying, "But without God you are nothing but evolved protoplasm and genetic coding within an existence that has no purpose!" and the reply was "You say that like it's a bad thing!"

Another memorable moment was provided by one member of the group challenging the fundamentalist to "disprove" his own theory that the world was carried on the back of a vast turtle, swimming for aeons through the void. The evangelist had a good stab at it: "What's holding the turtle up?" to which the reply was "It's turtles all the way down!" The evening was very challenging, frustrating, boisterous and exciting. And we all left as friends, even the turtle guy.

That guy though. A brilliant debater, fearless and quick witted, great to have at your side in a debate with evangelists, but difficult to have as a member of a group that relies on good relations. He denied anthropocentric climate change which led to a challenge to our group. Could we reach common ground with this man and his entrenched denialism? Were we the ones who were entrenched?

His presence in the group repeatedly threw out the question, are you sure you are right? How do you know that the Earth is warming as a result of man-made emissions? These were really good questions and we did our best to answer them.

But eventually he turned every topic to climate change, and began to dominate our group. I was sadly reminded of the holocaust denier David Irving, whose mastery of history and knowledge of Third Reich minutiae makes it pointless for other historians to attempt a debate. All of his skills, his knowledge, his grasp of detail and his eloquence are directed to maintaining a falsehood. It was the same with our own denier and his relentless pursuit of a single topic had driven people away. With a heavy heart we had to tell him to leave. We learned a lesson.

We have now a new rule that simply paraphrases the "don't be a dick" imperative of a lot of groups like ours. The rule is that politeness and respect reign supreme, and if you aren't persuading another member of your point of view, let it go.

This year we had a challenge that brought a lot of people out to the (now closed) African Bar. A kindly philosopher had decided he would like to offer us a chance to debate whether or not the mind and the body were two distinct entities. His assertion was that he could "prove" that the mind was not the brain. To be honest I'm no philosopher, and my head hurt as we tried to wrap ourselves around his arguments. Again, an infuriating night with people passionately arguing their position. We were swelled that night by a contingent from Wellington, and had a fiery debate, but one that remained amicable.

The group has had its high points and frankly, some evenings that were no fun at all. At the moment we are riding a high. A bunch of people who turned up for purely social reasons (and who I thought didn't get skepticism at all) turned up again and brought other people. We have people who are steeped in skepticism, and people who have only just begun to consider the question "how do I know?" The rule is that we enjoy ourselves.

Skeptics are a rather odd subset of the species, but summer is coming. The long evenings seem to draw a bigger crowd. Perhaps we will meet someone who is good at publicity, and then we'll need a hall to cram us all in, with our bottles of crafted beer or entry-level chardonnay, irreverent good humour and frantic fact-checking over the Café Wi-Fi.

So, if you have seen the second biggest ball of twine and exhausted the thrills of the rugby museum, why not seek us out? We meet on the second Friday of the month at 7pm at The Grand. Bring something to talk about. ❐

Review: BOOK

HOW TO FIND THE APOLLO LANDING SITES

By James L Chen
Springer, Patrick Moore Practical Astronomy Series
2014
Reviewed by Steven Galbraith

The Apollo mission has always appealed to me as one of humanity's greatest achievements. Over the course of one decade, NASA scientists and engineers made an extraordinary number of major technological breakthroughs (many of which have found uses in our day-to-day terrestrial lives), that culminated in the unprecedented feat of transporting humans all the way to the Moon and back. By the mid-1970s, when I was at primary school, it was quite natural to presume that progress would continue at this rate. Alas, progress did not continue as I had hoped. But the failure of the future to resemble my dreams has not diminished my respect for the Apollo mission, its wonderful scientists and engineers, and the courageous explorers who volunteered to ride a firework all the way to the Moon on the basis of their trust in science.

I think this is why, among all conspiracy theories, I find the "Moon landing hoaxers" the most disagreeable. Not only do they harbour such misanthropic distrust in people that they accuse everyone at NASA of being a liar, but worse, some of them are so anti-science as to claim that humanity could not have actually gone to the Moon.

One fact that the conspiracy theorists are required to explain is that the debris from the Apollo missions is still sitting on the lunar surface and has been photographed by satellites from a number of countries, including not-necessarily-USA-friendly nations such as Russia and China. To hold onto the conspiracy one needs to believe that all these nations are also "in on the hoax".

As I was browsing my local library, the book *How to Find the Apollo Landing Sites* caught my eye. I wondered if it was something that could be shown to your local neighbourhood Moon-landing-denier.

The book is written by a retired Engineer and passionate home astronomer. It has the quaint style of the enthusiastic amateur. But unfortunately, this book is not the panacea to Moon-landing-deniers that we might hope. Very early in the text the author informs us that one cannot actually see with home telescopes evidence on the Moon of the Apollo missions: "Despite the sophistication and technology that is possessed by today's backyard astronomer, the reader is reminded that although the Apollo landing sites can be identified, there is no hope to see the remaining Apollo relics left on the Moon. The smallest object that can be seen from an earthbound telescope is a crater the size of the Rose Bowl or Wembley Stadium."

Instead, the book is a guide to viewing the major features on the lunar surface at the general locations chosen as the landing sites of the Apollo project. The phrase "landing site" is used in this sense in the title of the book and its contents.

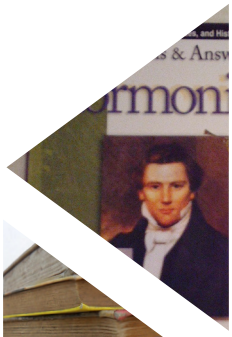
The core of the book is a sequence of 20-page chapters, one for each of the Apollo missions. Discussed are the astronauts, any technical complications in the launch or flight, the rationale for the chosen landing site, and some detail of the experiments performed and equipment used on the mission. Photos taken by the astronauts are included, as well as images of the debris around each landing site subsequently taken by a Lunar satellite

Some later chapters include discussion of the ranger (satellites that took photos of the lunar surface while in orbit around the Moon, before being crash-landed on the surface) and surveyor (un-manned lunar landers that took photos from the surface) missions.

Finally, the author ends with a chapter on future missions. Like many of us, he is disappointed that human exploration of space has not progressed as fast or as far as we dreamed in the 1970s. But he is not deterred. He writes with excitement about future missions to the Moon and Mars. ❐

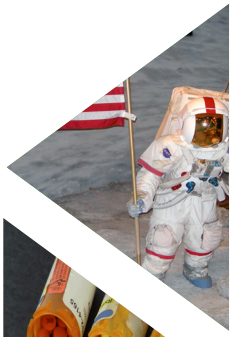
A thing is not proved just because no one has ever questioned it. What has never been gone into impartially has never been properly gone into. Hence skepticism is the first step toward truth. It must be applied generally, because it is the touchstone.

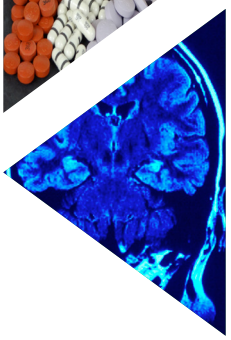
-Denis Diderot











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