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A voice from the other side

TN spite of the quality international line-up of scientists and science Lcommunicators at September's annual NZ Skeptics Conference in Wellington, it's probably not surprising that most of the media attention on the event focused on the presence of medium Sue Nicholson (see NZ Skeptic 93). Many in the audience seemed bemused to see her there, and Nicholson, for her part, didn't seem to have much idea of what the Skeptics were about. "My father, he was the most sceptic person ever, I'm telling you that," she said. "Couldn't stand black people."

The event was all very civilised, and Nicholson received a polite hearing, but it did provide a rare opportunity to pose questions to the Sensing Murder star. One, repeated on TV3's news coverage ('TV psychic tries to convince sceptics') asked her why, after 32 episodes, Sensing Murder was unable to generate any fresh information on the cases Nicholson and her fellow mediums had investigated. Nicholson responded that they had in fact solved one case, that of "Sara Neish".

While it wasn't possible to challenge this at the time, the comments on the TV3 website in response to the news item have been very illuminating. These included input from a son and a friend of the victim, whose name was actually Sara Niethe. They were adamant that Sensing Murder had done nothing to help solve the case. Sara's former boyfriend, Mark Pakenham, was sentenced in August for her manslaughter, although Nicholson and fellow medium Deb Webber had claimed on the show that she had left Pakenham's house after an argument on the night of her death, and then been murdered by another man. At the time, according to the Stuff website, inquiry head Detective Sergeant Glenn Tinsley of Waihi police said no leads had come from the show, and police did not put much faith in psychics.

Nicholson also claimed in her presentation that the Sensing Murder mediums received no feedback on the comments they made while recording the show, implying that any information they imparted must have come from the spirit world, rather than simply being reflected back from the subject as happens in a cold reading session. But the show's host, Rebecca Gibney, says in the preamble to each episode that "only correct statements are confirmed during the readings". That's all a skilled cold reader would need – if a statement is incorrect it doesn't elicit a response and the medium changes tack until s/he gets a confirmation. Further evidence, if any were needed, that Nicholson is not a reliable source of information on Lavid matters pertaining either to this world or the next.

What I've tried, what worked, what failed and why

Elf Eldridge

A lot of effort goes into science communication, but the effectiveness of much of it is debatable. This article is based on a presentation to the NZ Skeptics Conference in Wellington, 7 September 2013.



Elf Eldridge at the 2013 NZ Skeptics Conference: "If our best is not good enough, we need to get better.".

'M ELF, currently a ■ Physics PhD student with the MacDiarmid Institute for Advanced Materials and Nanotechnology. I'm not what people conventionally think of as a scientist. I grew up dividing my time between a farm in the Wairarapa and Wellington, which gives me a somewhat novel perspective on things. Growing up around animals in a farming environment gives you a relatively strong stomach for infections and autopsies and a somewhat low tolerance for pointless posturing.

My PhD work centres around the use of a New Zealand-made nanoparticle detection machine called the qNano, produced by Izon Science in Christchurch – but I try not to mention that too much due to the close proximity of my thesis deadline!

Unlike most scientists I know, I've never been really good at science and maths. I have always enjoyed learning about the world around me (when I was little my dream job was to sell ice creams on the moon), but I have always found this a complicated, tricky process and often, particularly when maths is concerned, almost completely impenetrable.

There have been many times in my studying life when I've seriously considered giving it all up and walking away. But something of a turning point for me occurred at the Transit of Venus forum at Tolaga Bay in 2011. The Transit forum was Sir Paul Callaghan's attempt to get Iwi, politicians, policy makers and scientists discussing their respective visions for New Zealand's technological future. Sadly Sir Paul didn't live to see his efforts come to fruition, leaving Sir Peter Gluckman, the prime minister's Chief Science

advisor, to run the forum. Sir Peter closed by recommending to anyone in attendance who was serious about changing New Zealand's future, that they read *The Geek Manifesto*.

I was (as is my custom) highly sceptical that any one thing in

isolation could ever bring about major change, least of all a book. But I decided that I wouldn't really feel comfortable complaining if I didn't at least read it. So I purchased a copy, and upon reading it, realised that perhaps there was more I could do to improve things. The message I took home was that the keys to change were education, inspiration and evaluation.

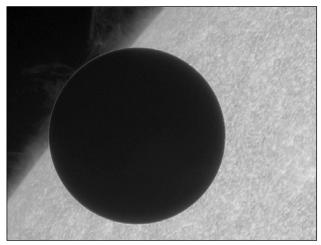
At my heart I'm an experimentalist, so I started to push myself into almost every form of science communication that I came across: blogging, podcasts, community science classes with Chalkle and Wellington Makerspace, outreach to schools, working at the Carter Observatory. More than simply science I tried also to promote critical thinking and understanding of mathematics and risk. I worked (and still do) with Te Ropu Awhina, an on-campus whanau at Victoria University that works to promote Maori and Pacific success in science. technology, engineering and mathematics (STEM), to try and reduce the achievement gap so often talked about over socioeco-

I made it a focal point also to promote STEM careers to women by introducing people to female science and engineering rockstars like Siouxie Wiles

nomic lines in New Zealand.

and Limor 'Ladyada' Fried, the founder of Adafruit.

So after all this – do I have any revelations that I can share? Only one really. And that is that I'm sceptical about the effectiveness of much of the science communication that happens in New



Events such as the Transit of Venus provide excellent opportunities for science outreach. Source: NASA Goddard Space Flight Centre.

Zealand. There is a general supposition that anything is better than nothing, which I think is far from clear. Especially if it's not studied and tested, which much science outreach and communication in New Zealand is not.

By 'tested' I mean optimised and improved, not simply the collection of statistics on the number of students visited. And it's crucially important that we not only do outreach, but that we get better at it, because the more we learn about psychology the more obvious it becomes that some of the basic assumptions around outreach are wrong.

Most outreach is done on two assumptions: that people make better decisions with better information (which is demonstrably rubbish even within small groups of friends) and that the audience retains the information imparted to them during the outreach. Yet we know (read Wikipedia's article on 'Confirmation Bias' for some references and interesting reading) that challenging a person's belief can simply reinforce it. We know that the memorability of a piece of information

has more to do with how it's presented than its factual content. And we know that the repetition of myths reinforces them – even if they're repeated while in the process of debunking them.

Yet we persist in traditional outreach and communication practices, with the defence often posited: "We're doing our best". Well, unfortunately, if our best is not good enough, we need to get better, not simply

to keep repeating the same crap and expecting miracles. After all Albert Einstein (or perhaps it was a Narcotics Anonymous pamphlet from the 1980s) once defined insanity as repeating the same mistakes and expecting different results.

We need people's help to make connections, to learn and to improve – both as individuals and as groups concerned with promoting science literacy. And make no mistake, we *must* succeed in this endeavour. Failure to do so has ramifications, not only for ourselves and our communities, but for curiosity and the survival of our species as a whole.

Elf Eldridge is a PhD student with the MacDiarmid Institute for Advanced Materials and Nanotechnology, and president of the Wellington branch of the Royal Society of New Zealand.

Homeopaths agree to dilute their claims

Keith Garratt finds the NZ Homeopathic Society is capable of change.

ON 2 October 2013, I received this email:

Dear Keith,

We acknowledge receipt of your letter 16th September 2013. The changes you suggested have been activated.

Regards, Den Illing, Co-ordinator, NZ Homoeopathic Society

This brief and apparently innocuous message was for me a satisfying culmination of a long saga.

In early 2012, I noticed that on the Frequently Asked Questions page of its website, under the heading "What Can Homeopathy Treat?", the New Zealand Homoeopathic Society made the following statement:

66 Homoeopathic medicine can effectively treat a wide array of health problems, both acute and chronic. The following are just some of the conditions for which homoeopathy has proven particularly effective according to the British Government National Health Service (NHS):

Mental/Emotional problems

Anxiety states: attention deficit disorder; hyperactivity; after effects of stress, grief, bereavement; depression; panic attacks; fears; Sleeping problems: Nightmares, insomnia; poor concentration and memory loss; fatigue; neuroses;

obsessional disorders; anorexia and bulimia nervosa; psychosomatic problems; post traumatic stress.

Womens' Health

Hormonal related disorders: Premenstrual tension (PMT), menopause, painful periods, excessive period bleeding; vaginitis; candidiasis; infertility

Pregnancy: Mastitis, labour injuries and wounds, morning sickness (nausea), lack of breast milk, post-natal depression.

Joint / Musculo-skeletal

Rheumatism; polyarthritis; osteoarthritis and rheumatoid arthritis; gout; repetitive strain injury; sports trauma.

Dermatology

Most skin problems respond well to homoeopathic treatment: Eczema, psoriasis, urticaria Infections: Bacterial and fungal – herpes simplex and zoster, nappy rash, impetigo, pruritis.

Children's health

Both mental and physical well being problems are treated including: Behavioural disorders, social dysfunctional problems, recurrent acute illnesses; recurrent otitis media (ear infection); recurrent sore throats and tonsillitis; teething; colic; croup; bronchitis; enuresis; atopic eczema and other skin problems; asthma; bedwetting.

General

Chronic and recurrent illness: Recurrent Tonsillitis, Irritable Bowel Syndrome (IBS), Gastritis, Colitis, Hay Fever, Headaches, Migraines, Thyroid disorders, Sinusitis, Allergies and allergic syndromes. ME, Post Viral Syndrome, MS. Addiction: alcohol, drugs, withdrawal

Travel sickness."

This got my attention because of the serious nature of some of the conditions listed and the reference to the British NHS. I also found it interesting that this section came shortly after an explanation of the 'like treats like' principle of homeopathy. I really struggled to imagine how the 'like treats like' principle could be applied to many of the conditions listed.

I asked the society to provide references for NHS reports on the effectiveness of homeopathy for any of these conditions, and to authoritative peer-reviewed research on the effectiveness of homeopathic treatment for them. I had no response.

I also made an online search. At that stage, the NHS website had little to say about homeopathy, and I could find no confirmation that the NHS found it to be

"particularly effective" for any of the listed conditions. An enquiry to the UK Department of Health elicited the following somewhat disturbing statements:

"For your information, the House of Commons Science and Technology Committee carried out an examination of the evidence to support the provision of homeopathy on the NHS. The Committee's report was published on 22 February 2010. The Department considered its findings and recommendations and published a full response.

"The Department of Health will not be withdrawing funding for homeopathy on the NHS, nor will the licensing of homeopathic products be stopped. Decisions on the provision and funding of any treatment will remain the responsibility of the NHS locally."

The committee's report can be seen at www.publications.parliament.uk/pa/cm200910/cmselect/cmsctech/45/4502.htm

My next step was to lodge a complaint with the Advertising Standards Authority. In due course, I was notified that my complaint would not be put to the full board because the society's website is not an advertisement. This prompted me to lodge an appeal in which I laid out my concern in greater detail. I included this comment about the decision:

"This seems to be at odds with your own Code of Practice at page 16, where it states:

"The word 'advertisement' is to be taken in its broadest sense to embrace any form of advertising and includes advertising which promotes the interest of any person, product or service, imparts information, educates, or advocates an idea, belief, political viewpoint or opportunity. The definition includes advertising in all traditional media and digital media such as online advertising, including websites."

My complaint and appeal was then referred to the full ASA board, which in August 2012 ruled in a split decision that the website was outside its jurisdiction.

More recently, I discovered that the NHS website has changed, and now has much more specific comment about homeopathy. This prompted me to write the following letter to the NZ Homoeopathic Society on 26 September:

On the Frequently Asked Questions page of your website under the heading "What can homoeopathy treat?" there is the following statement:

"Homoeopathic medicine can effectively treat a wide array of health problems, both acute and chronic. The following are just some of the conditions for which homoeopathy has proven particularly effective according to the British Government National Health Service (NHS)."

This is followed by a list of some 75 conditions, including many serious illnesses.

This statement and the list appear to be completely at odds with the NHS website at http://www.nhs.uk/conditions/homeopathy/Pages/Introduction.aspx#whenused.

The NHS website includes the following:

"A 2010 House of Commons Science and Technology Committee report on homeopathy said that homeopathic remedies perform

no better than placebos, and that the principles on which homeopathy is based are 'scientifically implausible'. This is also the view of the Chief Medical Officer, Professor Dame Sally Davies." and "There has been extensive investigation of the effectiveness of homeopathy. There is no good-quality evidence that homeopathy is effective as a treatment for any health condition."

I find it very surprising that your claim regarding the NHS still appears on your site, as it appears that it has no basis in fact, and is actually in complete contradiction of the NHS information. Given that many of the conditions listed are very serious and that sufferers may be desperate to find a treatment of proven efficacy, I believe that it is very unethical for a supposedly professional organisation to include this misleading and apparently false information. Given the apparent falsity of this claim, it gives no confidence that other claims on the site regarding the efficacy of homeopathy are any more credible.

Can I suggest that the statement quoting the NHS is removed from your website.

I had no real expectation of a positive result and was planning my next moves. It was therefore a pleasant surprise to receive the message from the society that I quoted in the opening paragraph of this article. It is pleasing that the NZ Homoeopathic Society has recognised the need to at least move some way to moderating its more extreme claims.

Following a 30-year career in the public service, Keith Garratt spent some 10 years as an international environmental management consultant. He is now semi-retired in Rotorua.

Peddling wellness

Peter Clemerson

A 'Wellness Festival' provides a couple of hours' entertainment, if not much more.

THE stallholders at Porirua's inaugural Wellfest in August were a mixed bunch. Among the 50 or so displaying their wares to the credulous, the curious, and the occasional skeptic were some who were probably innocents, searchers and idealists. Others could best be described as performers, tricksters, and self-deceivers, but how could you tell the difference? There was even the odd semi-legitimate business.

Among the innocents, one might place some of the Share International people (shareinternational.org) who, besides wanting a fairer share of the world's resources to be allocated to the poor, assured me that we are on the cusp of a change that takes place every 2300 years. A new age of Aquarius is replacing the old age of Pisces, and the evidence is to be seen in the Occupy movement and the Arab Spring. New energy from the cosmos is descending upon us. As ever, there is a proclaimer of the newly arriving age, this time in the form of Maitreya, slowly emerging through occasional appearances somewhere in the world other than where you are and in unexpected guises. His body of Love and Light will ensure him life till



the end of the new Aquarian age. Unsurprisingly, more details of his radiance are available, this time from the books of his prolific champion, one Benjamin Creme, at just \$45 each. Cheap at double the price!

For the doubtful, crop circles provide evidence of the incoming energy.

It's easy to mock, isn't it? The distress most of humanity experiences in everyday life has caused great angst among those manning the stall and they have responded by searching for some movement somewhere that offers hope. They were obviously sincere, well meaning and explicit in their search for a leader

or teacher who has an answer, who can bind humanity together so that we cooperate in union rather than fight and compete. Such hopes invite vulnerability and it was sad to see nice people taken in by mysterious ghostly figures whose carefully managed distance protects them from scrutiny.

There was yet more energy cast upon the world at the Sukyo Mahikari stall where you are invited to receive 10 minutes of True Light at no cost, but do leave your contact details for a follow-up. I revealed myself to be a skeptic and asked if it would still work. Yes, of course, and would I like to sit down next to another visitor who was half way through his session, with a practitioner waving her arms over him and delivering a chant. I was pleased to do so, told my new acquaintance my name and closed my eyes as requested. My chanteuse commenced and after a few minutes of what I later learned was Japanese, I was left in dark and nearly silent contemplation of how long 10 minutes is. On completion I asked in what way was I changed. Well, I might have diarrhea later that evening! Diarrhoea? Yes, this is the way the True Light gets rid of the toxins in your body. Well, I had no diarrhoea. Apparently, I was already toxin-free.

Still in need of healing? Try Light Sound, the Vibration Healing provided by Marie Jarosch, who stands over her clients (\$20 for 20 minutes) waving her arms and hands over their prone bodies, delivering what sounded to me like gibberish. The lady from the neighbouring stall (Victim Support) and I watched intently. Yes, we agreed, Ms Jarosch was one of the weirder practitioners.

But not so weird as the folk at the Soul Voice stall whose wailings had earlier intruded upon my contemplations chez Sukyo Mahikari. Here I watched two ladies waving hands in the air, keening and shouting incomprehensibly over their prone client (\$10 for 10 minutes) lying apparently comfortable, half hidden behind a screen but visible enough to appear pain-free. Their colleague explained: it works on different parts of the body or on various emotional blockages. Language gets in the way and sound has

NEARING ZERO

by Nick Kim

"Change of plan. The policymakers say they're only willing to listen to the science if we can present our ideas in simple bullet-point format."

to do the work, getting rid of the obstructions. If I have not explained this well enough, my deficiencies can be overcome through the purchase of books, for as little as \$45 or an audio CD at \$25.

Still unwell or confused? Try Craniowares where another lady,

I had no diarrhoea.

Apparently, I was already toxin-free.

this time called Liz, was laying her hands on the shoulders of her horizontal client, apparently manipulating the bones and muscles, while gently delivering her talking cure. She looked bored but shouldn't have done at \$80 for 60 minutes.

The same rates were charged by Jennifer Kearns who provides spiritual consultations at \$40 for 30 minutes. I might have been tempted but fortunately she was absent, possibly away with her spirits but more likely gone to lunch. And so one progresses from stall to stall. 'Free Spinal Screening' at Kelly Chiropractic, 'Zero Balancing' by Ann Kershaw at \$20 per 15 minutes, lose weight at the Virtual Gastric Band programme or enjoy a psychic workshop with Sharron Bakker and Karen Ainsworth-Kopa for as little as \$50 per half hour, etc. etc.

On the hardware front, you can ionise your water with 'alkalines' for improved health if you buy your equipment from *ionza*. Then you can reverse it for further improvements in health with equipment from Wellington Water Filters. Presumably you can toggle between them for infinitely improved health. And you can do all this for under \$1500.

Yes, there was much nonsense, but frankly, it was amusing: listening, watching, receiving, participating and even arguing where medical claims are too blatant to ignore.

The two-day fair at the Te Rauparaha Arena (admission \$10 or \$5 if booked in advance) drew a moderate attendance, with about 100 present while I was there. An organiser informed me by email that there was sufficient enthusiasm from the stallholders to hold it again next year. I'll be back for more then.

Peter Clemerson has retired from a career in IT and is now studying for a PhD in Evolutionary Psychology at Massey University.

Slice of heaven?

Alan Moskwa

A best-selling book claiming to present evidence of life after death may not be all it's cracked up to be.

RECENTLY read an article ("Heaven's Gate", SA Weekend Magazine, The Advertiser, December 8, 2012) written by a US neurosurgeon, Dr Eben Alexander III, in which he describes having a near death experience (NDE). This changed his scientific view of the mind and consciousness – the "most staggering experience of [his] life," he said.

He claims that during a bout of bacterial meningitis, for seven days, he had a "complete absence of neural activity in all but the deepest, most primitive portions of [his] brain". But he claims that for those seven days, he "not only remained fully conscious but journeyed to a stunning world of beauty and peace and unconditional love". He says this was not "a brainbased delusion cobbled together by [his] synapses after they had ... recovered". But he does remember a period when his mind began to "regain consciousness" and remembers "a vivid paranoid nightmare in which [his] wife and doctors were trying to kill [him], and [he] was only saved by a ninja couple after being pushed from a 60-storey cancer hospital".



He later claims to be "as deep a believer in science, and the truth-respecting values that created it, as [he] ever was". But he wishes to tell of this "world beyond the body", and has written a book about his experience, titled *Proof of Heaven: A Neurosurgeon's Journey into the Afterlife*.

Well, what can we make of all that?

Being somewhat old and computer-illiterate, and not having the time to investigate, I have

no knowledge of this man's upbringing, or his religious beliefs, or anything about him but this article. But I do know my own upbringing, and have knowledge of more than half a dozen NDEs which I have personally experienced myself. Not the same as his, but NDEs nevertheless. Allow me to comment on his story by using my own as an example.

I was raised a strict and obedient Roman Catholic in the 1950s

To Page 12

Iridologist's neglect led to 'avoidable' death

A TE Horo iridologist breached the code of human rights and failed, as a health-care provider, to give a Feilding grandmother proper care, the Human Rights Comission has said (Dominion Post, 27 August).

Yvonne Maine, who was reportedly afraid of hospitals and avoided going to the doctor, had been treated by Ruth Nelson for various ailments over several years. In 2008 she revealed to Nelson a scalp lesion which had been diagnosed by a GP as a harmless cyst nearly 40 years earlier. Nelson was repulsed – it was "rotting and oozing pus" and had "eaten half [her] head off", she told the Health and Disability Commissioner (Dominion Post, 4 September, 2012). She admitted recognising that the lesion "looked cancerous" and that it was beyond her ability to treat, but she continued to do so anyway. Nelson is not a registered natural health practitioner and has no qualifications

The treatments included washing out the lesion with colloidal silver and picking out dead skin with tweezers. Eventually the pair were spending several hours together every day, and Mrs Maine rented a house close to the clinic.

After initial signs of improvement, the lesion doubled in size, smelt unpleasant and frequently bled. Mrs Maine became weak and was in severe pain. Family and friends urged her to see a doctor but she didn't want to tell Nelson she had given up on her treatments.

Nelson told her it wasn't cancer, she probably wouldn't be treated by doctors, and that she would "get a bug or swine flu" if she went to hospital. By the time she sought conventional treatment 18 months later, the lesion had grown to 15cm by 20cm and had eaten through her scalp, exposing her brain. She had major surgery in 2009 but died the following year.

Plastic surgeon Swee Tan said it was horrifying to see such a large cancer essentially neglected in this day and age.

New Zealand Medical Association chairman Paul Ockelford said Mrs Maine's death was "tragic and avoidable", and highlighted the issue of whether natural therapists should be regulated. At present, anyone could say they were a naturopath.

Fluoride to return

The Hamilton City Council is likely to respect a recent referendum and resume adding fluoride to the city's water supply (*Waikato Times*, 14 October).

The council voted to cease fluoridation in June (see NZ Skeptic 108), a move which earned it this year's Bent Spoon Award from the NZ Skeptics (see p 13).

This was in spite of widespread public support for the practice, as shown by the results of a referendum in 2006 and confirmed in the recent referendum held in conjunction with the local body elections. The pro-fluoridation vote in both cases was around 70 percent.

A concerted anti-fluoride billboard and mailout campaign appeared to have little effect, unless it was counter-productive. Said one commenter on the Waikato Times website: "For me it wasn't big DHB advertising that swung me to vote pro Fluoride, it was the anti-fluoride brigade's actions: Insisting that the Uni chemistry department keep science out of the debate, the personal attacks, and the stated refusal to accept public opinion if the referendum didn't go their way."

Neon on the mend

Neon Roberts, the English boy kidnapped by his New Zealand-born mother, who wanted alternative therapy for his brain tumour (*NZ Skeptic 107*), is recovering well after finally completing his radiotherapy (*NZ Herald*, 10 August).

His long blond hair is gone, he has lost weight and he gets more tired than he used to, but the beaming smile and glint of hope in his eyes say that he is doing well, the *Herald* reports. Neon's last scan was cancer-free and his family say his bravery is an "inspiration" as he continues chemotherapy.

A documentary on the affair screened in the UK (*The Mirror*, 11 August) gave insights into the alternative therapies Neon's mother wanted him treated with,

including hyperbaric oxygen (see p 14). She also bought special netting to hang on his bed to "shield him from radio waves" and prescribed a list of alternative remedies including bicarbonate of soda, milk thistle, ozonated oil, goat's milk protein hot chocolates, four "Eskimo oils" and probiotics.

Oxygen bar just the thing for hangover

Speaking of hyperbaric oxygen, it may be of some use for some conditions, although it's very expensive. You can however now strive for a similar effect on the cheap by spending \$20 for 20 minutes breathing 95 percent oxygen through green nasal tubes in an Auckland bar (*NZ Herald*, 3 August).

Spaqua, billed as New Zealand's first oxygen bar, was the brainchild of Emma Leslie and Evan Seber, who "staggered across an oxygen bar in Las Vegas", and decided to bring the concept here.

Billed as a great hangover cure, or a general pick-me-up for those suffering fatigue, jetlag or the onset of a cold, the session involves breathing enriched oxygen which has been passed through wintergreen and lime aromatic solutions. Cans of 'Alcohol Killer' drinks are also available in case oxygen alone is not sufficient.

Spaqua's promotional material claims this increases energy, endurance and stamina while enhancing pain relief and "performance", and reducing stress.

"First of all, none of that is true," says Dr Kyle Perrin, a senior lecturer at Otago University who researches oxygen therapy for medical use. "Secondly, it is potentially quite harmful."

Excess oxygen was dangerous for people with serious lung disease, or who have suffered heart attacks, he said. "Your body is attuned to breathing room air and that is as much oxygen as we need."

West Coaster 'freaked out' by UFO

A man from Rutherglen on the West Coast says he saw a carshaped object on a road south of Greymouth suddenly lift into the sky in a blinding light, at about 8.45pm (*Greymouth Star*, 7 August).

"I was changing a CD as I was driving and when I looked up I saw what looked like a car without its lights on, stopped in the middle of the road outside Shantytown," Matthew Robert said.

"I slammed on my brakes and my eyes were still trying to focus, when suddenly the thing just lit up and shot into the sky. When I came to my senses I noticed that there were three other cars that had stopped on the other side of the road as well. It's weird that no one else has come forward because those people obviously would have seen the same thing I did."

Weird indeed. Mr Robert said he had been looking at the sky via his Night Sky smartphone app at home a few minutes previously. "Suddenly, what looked like a satellite started going crazy and moving all over the sky and I was trying to follow it with my phone."

Palm surgery fixes fortunes

Lines on the palm have traditionally been viewed as determining a person's fate but no longer, thanks to some enterprising Japanese plastic surgeons (*NZ Herald*, 16 July).

A Dr Matsouka, who has performed 20 of the operations, says he uses an electric scalpel to burn a shaky incision on the palm, leaving a semi-permanent scar which extends one or more of the lines to be found there. The 10 or 15-minute job costs NZ\$1820.

Most of the patients are in their 30s. Men generally want their money line or success line extended, while women are more interested in the love/marriage line. Some women don't even have a marriage line and believe that because of this, they won't find love.

Dr Matsuoka says he gave one woman a wedding line and soon after she wrote to him saying she had married; two other patients won the lottery after he extended their fortune lines.

Despite these stories, he says he isn't sure how effective the surgery really is and believes there may be a placebo effect.

"If people think they'll be lucky, sometimes they become lucky. And it's not like the palm lines are really written in stone – they're basically wrinkles."

From Page 9

and early 1960s, but eschewed religion in my early teens when my brain matured enough to begin to reason and question things. I read extensively about religion, about science and nature, about "the world, the universe, and everything". My curiosity was unbounded. I still read extensively and subscribe to numerous journals of science and skepticism

In my late twenties I began to experience irregular heartbeats. These occurred with increasing frequency, and sometimes led to 'brown-outs'. My condition was not diagnosed for a number of years, during which time I had several NDEs. As Alexander says, "most NDEs are the result of momentary cardiac arrest". The heart stops pumping blood to the brain which, deprived of oxygen, becomes unable to "support consciousness". My own case was slightly different, in that my heart did not stop beating, but would beat either very rapidly or irregularly and slowly. In both these situations, pumping is very inefficient, and the result to the brain is the same -lack of oxygen. Which is why I had the brown-outs. I never had a complete blackout.

But my NDEs were not these. It is likely, however, that the brown-outs were the cause. My NDEs were quite different, and always occurred when I was alone late at night watching television. On a number of occasions I felt myself leaving my body and floating up into the air behind myself, up to the ceiling above a bookshelf in the corner of the room. From there I would

watch myself watching the TV for a few moments, before floating back down and re-entering my body. At first frightening, these experiences became pleasurable, and I actually looked forward to the next one.

Of course, I could not normally bring them on at will, but on one occasion after re-entering my body, I did. I wanted it to continue, and immediately left my body again for the ceiling. How that happened, I cannot explain.

I am myself a medical doctor, was an academic for 20 years (which included that period of NDEs) involved in neuromuscular research. Some of the research on which I have collaborated was published in *Nature*, with a cover photograph, and revisited in their "Ten Years Later" column, again with a photograph.

I reasoned that the cause of my experiences was the lack of blood to the brain and subsequent biochemical disturbances to the electrochemical processes at the synapses between my brain cells. Very much the same as Alexander reasons regarding his NDE, and probably the obvious and correct explanations. Unlike him, I did not turn to supernatural explanations.

Some time afterwards I was diagnosed with Wolff-Parkinson-White Syndrome, a condition involving an additional electrical pathway in the heart, which produces inefficient heart rates and pump function. This extra pathway was destroyed by radio-ablation surgery. I have never had the heart problems since. I have never had NDEs since. I miss them. But I often

think of how close to death I may have been!

In an interesting coincidence, I have also experienced (on another occasion, during a different illness) vivid paranoid delusions like Alexander's. Not from meningitis, but from methicillinresistant Staphylococcus aureus septicaemia (MRSA) - 'Golden Staph blood poisoning' - and a spinal abscess. I spent two months in a hospital bed and a further two-and-a-half months in rehabilitation. As in Alexander's case, the first seven days were the most interesting ones. I was obviously delirious, and had paranoid delusions as did Alexander. My delusions were, I think, more interesting than his. Unlike Alexander, I had no meningeal infection, although I did have bacteria coursing through my brain.

I was in a major, multistorey, tertiary teaching hospital in the city. Because of the dangers of spreading MRSA to others, I was in an isolated room at the end of a ward, on IV antibiotics, with strict antiseptic procedures in place. Yet, in my delirium, I imagined I was in a closet barely large enough to contain my bed, and people could walk through my room to access another larger room which in turn led to the outside. And this was all controlled by an Asian cartel dealing drugs. Just outside the ward was a cannabis plantation, and every day a car would drive up to collect the drugs. The nursing staff were involved also, and would take customers through my room to the other for their deals. I was in severe pain, but they would not give me my opiate medication because they were selling that too. I feared for my life lest they thought I would give their game away. One of the nurses had a daughter who would arrive every evening for her dinner (which was mine, which I could not eat because I was lying on my back, absolutely flat and still, because I could not move from the pain). The child would then spend the night sleeping in the adjacent room, and leave for school the next morning. I lost 22kg in weight during my hospitalisation.

Eventually, I was moved to another ward, and as the IV antibiotics exerted their effects, I came out of this delirium, my brain recovered, and I became lucid again. I still had not recovered physically. I had numerous visits from relatives, friends, and hospital staff during that period, none of which I could remember afterwards. But I could remember my delusions. The brain works in mysterious ways.

Unlike Alexander though, I think I reached the correct conclusions regarding my brain function. Quite simply, biochemical and electrophysiological abnormalities account for these experiences – both the NDEs and the delusions. These abnormalities, although very basic and simple in themselves, lead to extremely complex neuronal interactions and disordered brain function. Being an atheist, I cannot entertain a supernatural explanation. These experiences have not been sufficient for me to do that, because there is a genuine logical and non-supernatural explanation.

I suppose those with a religious bent would try to harmonise such experiences in that light. If they also had some scientific/medical background, they could try to reconcile their beliefs. But the two are not compatible. Alexander is not consistent, in stating at one stage that he had "a complete absence of neural activity" and yet claiming that he "remained fully conscious" during that period. And further on he talks about his mind regaining consciousness and remembering his "vivid paranoid nightmare". He also states that the only neural activity in his brain was in the "deepest, most primitive portions". He presumably means the subcortical regions of the brain stem responsible for the maintenance of life – not the production or memory of dreams.

I have no such delusions about my own situation. I am sure that thousands of people have had experiences similar to those described. But we haven't necessarily had any such epiphany as Alexander had.

Alan Moskwa lives in Joslin South Australia. This article was originally published in the *Australian Skeptic*.

bent spoon

And the winners are:

E ACH year the New Zealand Skeptics bestows the Bent Spoon Award for the New Zealand organisation which has shown the most egregious lack of critical thinking in public coverage of, or commentary on, a science-related issue.

This year the award goes to the **Hamilton City Council** for their decision not to assess the scientific evidence on the merits of water fluoridation and instead to cave in to a well-choreographed campaign by a small pressure group calling for the removal of fluoride from the city's water supply. This was despite a 2006 referendum in which citizens decisively supported continuation of fluoridation.

The Bravos

The New Zealand Skeptics also recognise those who have provided food for thought, critical analysis and important information on topics of relevance to our interests. There were two winners this year.

Shelley Bridgeman (*NZ Herald*) for two articles:

- Can we communicate with dead people? (12 March), in which
 Ms Bridgeman takes on the mediumship industry, from Woman's Day to Sensing Murder, pointing out their use of Barnum
 Statements, lack of successful hits and their prevailing lack of
 ethics generally.
- **Is homeopathy a sham?** (2 May), pointing out the implausibility of homeopathy and questioning its place in our pharmacies and tertiary institutions.

Darcy Cowan (*SciBlogs*), for getting the Immunisation Awareness Society's status corrected within the Charities Register (*NZ Skeptic 106*).

Under pressure

Matthew Willey recalls the days before the internet, and an old friend



Maggie had a wasting, incurable illness. If that sounds awfully sad, well, it was. But we had a great friendship and toured Nottingham pubs until I was as unsteady on my feet as she was. I would lean heavily on the handles of her chair as I pushed her back to her house after "Time please ladies and gentlemen" had been called. In the daytime we painted watercolours by the canal and campaigned against nuclear weapons, back in the days before the internet.

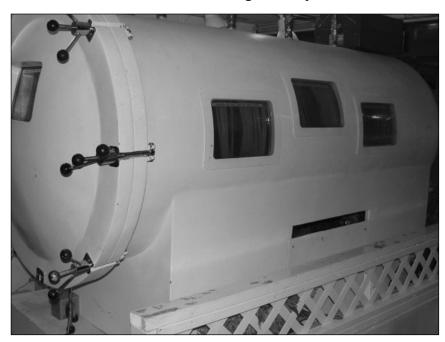
But her illness was heading in an obvious direction, and she became dependent on her wheelchair with or without the warm ale she was fond of. Then we heard about a new treatment that was being promoted by an American medical company. Posters went up advertising a lecture on 'hyperbaric oxygen treatment'. We were naturally curious.

In a crowded church hall a lecturer stood and described a marvellous new treatment, offered to us despite resistance from the medical establishment. Hyperbaric oxygen treatment, he said, was the treatment that could reverse the effects of multiple sclerosis. He showed us slide after slide of graphs, testimonials and photomicrographs that demonstrated how, by sitting in a chamber at high pressure and breathing pure oxygen, patients' brains healed themselves. He showed us many 'before and after' photographs of healed brain cells. It was the chance we had been waiting for, and we signed up for a course of treatments.

Once a week I would drive Maggie out to an industrial estate where the company had set up its chambers. The chamber was big enough for about half a dozen hopeful patients, all paying big money to sit for an hour in a high-pressure metal sphere and breathe oxygen through a mask.

Maggie would take a novel (Maya Angelou), and I would peep in and wave through the tiny porthole.

Afterwards she felt better, and we were jubilant at actually being able to do something hopeful together. Sure enough, in the following week we would see signs of improvement.



Hyperbaric chambers have a range of uses, some well-attested, others less so. This one, in the Creation Museum of Texas, simulates "the atmospheric conditions that existed before the worldwide Flood of Noah's day."

Our excitement faded over time. Improvements we thought we saw at first did not last, and her illness progressed. We stopped spending money on the treatments, and bought beer again. She could drink less and less, and the course of her illness followed an unusually steep pathway. She died as her namesake Maggie Thatcher fought to hold onto her position as Prime Minister.

We had had but one source of information. Now, in the days of the internet, I can look up Hyperbaric Oxygen on Google, and quickly find that it doesn't work. At least not for multiple sclerosis, or autism, or brain injury or a dozen other ailments

it still claims to treat. I also find websites where the same false hope is offered, with the same convincing presentations, and on the same pitiful evidence.

Nowadays I think about the money we spent, and the precious time we wasted on a treatment that arose out of nothing more than desperation and easy answers. One question would have been enough to nail those people, and that is: "Show me the evidence." I know now that a grand claim such as his requires really good evidence, and for a cure for multiple sclerosis I'd want a pile of peer-reviewed studies in proper journals, like the British Medical Journal. I would not be satisfied with a few slides and photos, not any more.

Wiser now and better informed, I am sadly aware that this is the area where predators still lurk, ready to take money off people like Maggie and myself.

We should have pocketed the cash and gone to that Talking Heads concert in London instead. I'm sorry Maggie, if I'd been just a little more clued up, we could have had more fun.

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.

climate change

Storm warning

Keith Muir responds to Barry Brill's article, A Climate of Hope, in NZ Skeptic 108.

I N HIS article A Climate of Hope, Barry Brill makes the following statement:

"It's pretty clear that the accumulated effect over the whole period until the 2.5°C level is reached (if ever) will be a positive experience."

This makes global warming sound rather innocuous, indeed, to be welcomed. A case of, buy shares in the makers of suntan cream and lie back and enjoy the heat. Sadly, it's not going to be like that and there is plenty of evidence to show that he is quite wrong.

As an aside, I am pleased though surprised to see that he

appears to accept the reality of global warming, though not its likely impacts, while the body of which he is chairman, seems to take a quite different view. A brief look at their website will illustrate this clearly (www.climatescience.org.nz)

In evidence, I will first cite the very recent report from Sir Peter Gluckman, the Chief Science Advisor to the government. His report is titled New Zealand's changing climate and oceans: The impact of human activity and implications for the future (www.pmcsa.org.nz). It is brief and written in very measured terms. It recognises the many uncertainties in so complex an area, but

is unequivocal in its view that anthropogenic global warming is real and will have major implications for this country.

Page 9 addresses the issue of climate impacts:

"While a change in the mean temperature of 1-2°C degrees may appear to be small, it is the change in the nature and pattern of New Zealand's climate extremes ... that is likely to have a much more significant impact on New Zealanders and on the primary industries on which the country largely depends."

In the summary on page 19, the report says this:



"However, these marginal benefits are likely to be small compared to the adverse effects associated with climate change on society as a whole."

Let us look at this from a different angle, that of the insurance companies. Risk is their lifeblood. Their profitability, and indeed survival, depends on their ability to evaluate risks and price them accordingly. Munich Re, one of the world's largest reinsurance companies, has compiled the world's largest database of natural disasters. Peter Hoppe, the head of their Geo Risks Research/Corporate Climate Centre said this:

"Our figures indicate a trend towards an increase in extreme weather events that can only be fully explained by climate change." (www.scientificamerican.com)

It is basic physics that the amount of water the atmosphere can hold is determined by its temperature. Thus higher temperatures equal more water vapour and this in turn means more rain/snow, but importantly, not uniformly.

The following quote is taken from the *National Geographic*, September 2012:

"As moisture in the atmosphere has increased, rainfall has intensified. The amount of rain falling in intense downpours – the heaviest one per cent of rain events – has increased by nearly 20

percent during the past century in the US. 'You're getting more rain from a given storm now than you would have 30 or 40 years ago,' says Gerald Meehl, a senior scientist at the National Center for Atmospheric Research in Boulder, Colorado. Global warming, he says, has changed the odds for extreme weather".

I could bombard you with further quotes making essentially the same point, but let me give you a real life example of how global warming is affecting peoples' lives, right now. The island of Kutubdia, lies off Bangladesh in the Bay of Bengal and it has halved in size over the past 20 years. Since 1991, six villages have been swamped by rising sea-levels and some 40,000 people have had to leave. There is no reliable sea-level data for Bangladesh, but sea surface temperatures have increased significantly. According to Sugata Hazra, head of oceanography at Kolkata's Jadavpur University, "There is a close correlation between the rate of sea level rise and the sea surface temperature"(www.the guardian.com). Forty thousand may seem like a large number, but if sea levels continue rising, as seems inevitable, that number will increase exponentially, with very great social and economic consequences.

I will finish with a brief look at the Philippines. According to an article in the *Guardian* in February this year, scientists are registering steadily rising sea levels round the Philippines and a falling water table. All this appears to increase the likelihood and incidence of extreme weather events. Mary Ann Lucille Sering, head of the government's Climate Change Commission, is in no doubt that her country faces a deepening crisis that it can ill afford. "Extreme weather is becoming more frequent, you could even call it the new normal," she said.

I would like to think that she will be proved wrong, but I fear she is right.

As I was finishing this, I spotted an article in the *Dominion Post* with the headline: *Storms 'fuel' more climate change*. Scientists from the Max Planck Institute in Germany have published a paper in the science journal *Nature*, in which they argue that extreme weather events could themselves cause further climate change. Dr. Reichstein, one of the lead researchers said this:

"As extreme climate events reduce the amount of carbon that the terrestrial ecosystems absorb, and the carbon dioxide in the atmosphere therefore continues to increase, more extreme weather could result. It would be a self-reinforcing effect".

I rest my case.

Scenes from a conference...

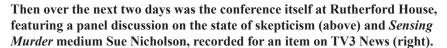
The annual NZ Skeptics Conference was held in Wellington this year. All over Wellington.





After the AGM at the Tararua Tramping Club rooms it was off to New Zealand's first Skepticamp at the Black Dog Brewery, where anyone who felt like it could get up and give a talk.











In between there was the Conference Dinner at The Royal, with obligatory speeches and award presentations...





Much coffee was drunk (left), then those who wished retired for an informal after-match function at The Old Bailey (above).

Goat glands, greed and gullibility

Alison Campbell reviews Charlatan: America's Most Dangerous Huckster, the Man Who Pursued Him, and the Age of Flimflam, by Pope Brock. Three Rivers Press, New York.



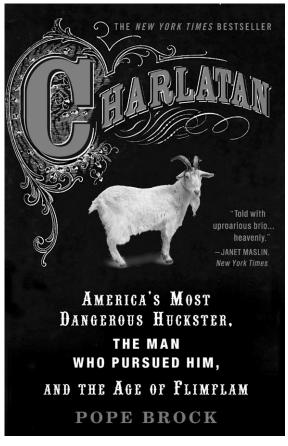
OAT glands, greed, and the Jgullibility of others turned out to be a winning combination for John R Brinkley. In the early years of the 20th century it seemed as if science could do anything, perhaps even extend life - including life in the bedroom - well beyond the allotted threescore years and ten. Brinkley saw a market there, and managed to parlay the testicles of young goats, combined with the gullibility of the vain, the impotent, and the just plain desperate into an enormous personal fortune.

Pope Brock's biography of Brinkley is both entertaining and alarming in equal measure. Entertaining, because it's quite a rollicking read. Alarming, because it highlights how easy it is for someone with a persuasive manner and a feel for the market to hoodwink an awful lot of people, and get rich doing it. For despite the fact that Brinkley had no real medical training, he somehow managed to persuade large numbers of men to part with good money (hard to come by, in the Depression years) for the dubious privilege of having the gonads of young billy goats implanted into their own scrotums. (These days, I guess people buy cialis and horny goatweed on-line instead.) We're not told what subsequently happened to the goats.

Now, the mind boggles at the sequelae of this, given the way your immune system would likely reject the goat gonads, and the likelihood of the transplants decaying anyway since they'd have had no blood supply. But nonetheless, Brinkley prospered and somehow people never seemed to hear of the folks for whom things went very, very pear-shaped. Nor was he alone in his endeavours: other quacks offered chimp glands, vasectomies and various 'electric' treatments - for rejuvenation,

as well as the more personal problems in the bedroom, but somehow it was Brinkley who rose to the top, eventually even travelling to Japan to market his techniques.

Brinkley fairly quickly set up shop in a purpose-built hospital in Milford, Kansas. You'd think that staying in one place for too long would not be a sensible move for a charlatan, but Brinkley prospered there – to the extent that he even ran for governor. Perhaps he was bringing so much money and business



into the town that people turned a blind eye to his failures. Brock describes how Brinkley built his own not-so-small empire in Milford. Having recognised the power of advertising, the good doctor expanded into mail-order nostrums for pretty much anything that ailed you, and then into the brave new world of the airwaves. When the regulators finally removed his medical licence, he simply left a couple of locums to do the operations and threw himself into expanding his radio operations, eventually broadcasting from a massive station just over the border with Mexico (to get around the US ruling that radio stations could use only 5000 watts: Brinkley deafened the southern states with his 500,000-watt transmitter). In the process, Brock tells us, he even kickstarted America's love affair with country and western music.

There was, of course, an eventual reckoning. Into Brinkley's story, Pope weaves the tale of the various medical investigators who tried to shut him down, most notably Morris Fishbein, eventually the editor of the Journal of the American Medical Association. It took years, but finally, in 1939, Brinkley had his day in court, and lost. Once found guilty of medical malpractice, he was sued by many individuals and the IRS chased him for back taxes. His radio station closed, and he died in 1942.

But why did Brinkley have such a long run? You'd think, with a 'treatment' that was worthless, reality would have caught up with him much earlier. In explanation, Brock provides the following quote from Samuel Johnson, which probably goes a long way to explain why charlatans like Brinkley have never really left us:

[W]e go with expectation and desire of being pleased; we meet others who are brought by the same motives; no one will be the first to own the disappointment; one face reflects the smile of another, till each believes the rest delighted, and endeavours to catch and transmit the circulating rapture. In time, all are deceived by the cheat to which all contribute. The fiction of happiness is propagated by every tongue, and confirmed by every look, till at last all profess the joy which they do not feel, [and] consent to yield to that general delusion.

Alison Campbell is a lecturer in the Biological Sciences Department at Waikato University. She writes Bioblog as a way of encouraging critical thinking, looking at scientific papers that are relevant to the Level 3 curriculum and Scholarship, and fielding questions from readers.

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Online Internet Health Information Survey

MSciComm student Hayley Cross of Otago University's Centre for Science Communication is conducting a survey on Diagnosing Credibility Online. It examines the use of the Internet to find health information, with the aim of developing an ibook to help people find sites with reputable information.

The survey takes approximately 10 minutes to complete, and has been approved by the University of Otago Human Ethics Committee – see www.healthsurvey.kiwi.nz

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