

Skeptic

a person in a state of terminal caution

Margaret Mahy

Communicating skepticism

Science Based Healthcare

Conspiracy theories

A new Chair-entity

Skeptical Desiderata

The Kardashian Index

Good germs and bad germs

Skeptic

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Thanks for all the fish

IT'S about 25 years since I joined the NZ Skeptics, and eight years since I took on the editorship of this magazine. It's been fun, but it's time I handed the *NZ Skeptic* on to other hands, so this will be my last issue as editor. Thank-you to all who have contributed over the years; together we've covered a lot of ground. I thought I'd indulge myself a little here by looking back over past issues and some of the material in them.

Some topics never go away. Alternative medicine remains as popular as ever, and mediums are still fleecing the vulnerable and the grieving. Others, such as crop circles, may emerge, prosper for a time and then fade. A few may morph in unexpected and occasionally alarming directions. Hypnotic regression started out as a means of 'discovering' a person's past lives or alien abduction experiences (see p 5) but became more sinister when subjects began to report instances of satanic ritual abuse and, later (coupled with flawed interrogations of children), more conventional forms of sexual abuse (see *NZ Skeptic* 50, this issue p 21). The skeptical movement worldwide played an important role in highlighting the insanities of the moral panic that arose. Though the panic has since faded much damage remains, and 'regression therapists' continue to practise.

The skeptics themselves have also changed. As Martin Bridgstock wrote in *NZ Skeptic* 102, the average skeptic was once "overwhelmingly likely to be male, older than average, very intelligent, mostly conservative and grumpily critical of anything to do with the paranormal." More recently though, there has been "an influx of skeptics who are much younger, much less likely to be bearded, and who include a substantial minority of women." They are also more likely to be atheists (though there are plenty among the old school), and it is unlikely we will see another article like Dr Robert Mann's in *NZ Skeptic* 42, arguing that Christianity was the only ethical system under which science is known to flourish – something that generated a huge response in Issue 43!

But NZ Skeptics has always had members who hold a wide range of political and philosophical views, and that has helped to keep the society lively and vibrant. We might all agree that rationality is a Good Thing that we should all aspire to, but we're human, our brains are an evolutionary hodgepodge rather than perfectly designed reasoning machines, and some matters simply defy rational analysis – at least with our current level of knowledge. We won't always all agree on everything. But we (I hope) can agree that the world is an amazing place that is better understood and appreciated by assuming it operates according to natural, rather than supernatural principles, that it's okay to say 'I don't know' rather than sieze on a paranormal explanation for an unexplained phenomenon, and that these are views which are worth promoting and defending.

David

Communicating skepticism or: How I learned to stop worrying and love the Media

Kylie Sturgess

The spread of new technologies has caused an upheaval in the world of the media, but gives skeptics many causes for optimism. This article is based on a presentation to the 2013 NZ Skeptics Conference in Wellington.

AS a podcaster and a student of broadcast media, there are a few things I've noticed over the years that have led me to be more optimistic. I am optimistic because there are plenty of opportunities for the general public to influence the media and a growing number resources for those wishing to promote science and technology in general.

I think about the fantastic and influential skeptics out there – people who have PhDs like Dr Karen Stollznow and Dr Eugenie Scott, or have PhDs and do magic tricks, like Dr Richard Wiseman. I also think about skeptics who have faced and challenged pseudoscience and paranormal claims in both their personal and professional lives – people like Loretta Marron, Hayley Stevens, Sharon Hill or

Daniel Loxton. There are plenty of people, who may not have formal schooling in a field, who have taken on the challenge of doing something positive and

productive about strange and sometimes harmful claims.

All of these examples are also great people to talk to, and the discussions I have with skeptics like these (and many others) feature on my podcast, the *Token Skeptic*.

I usually define podcasts as the equivalent of online radio shows. Sometimes it seems as if everyone has a podcast; you'll find dozens of them out there covering practically any topic you care to name. Skepticism is no exception in that regard.

If you would like to know more about podcasting, or even how to start your own (and why, despite there being plenty of them, you should certainly consider doing one if you feel like it) – you can find



resources on the *Token Skeptic* website, including interviews with the likes of Dr Pamela Gay on how to get started.

I should warn you I'll be mentioning the podcast a lot – once upon a time I was the host of an atheist conference and some members of the audience tweeted, "Oh, not another one with a podcast..." As I said, there's nothing new or particularly special about being a skeptic with a podcast.

But what I do with my podcast is use it to reflect research I've done into a number of different areas, including the thesis I eventually wrote on Australian paranormal belief. If it wasn't for podcasting, it would be highly unlikely that I would have had many of the great opportunities that I've had – like talking at events like last year's NZ Skeptics Conference, networking with people and helping science communication groups.

Skeptical history

I can mention the names of 'great skeptics' and I generally assume that my audience knows who these people are too. But when I arrived in Wellington for the conference last year, I ended up chatting over coffee with Matthew, who along with Cherry were nice enough to pick me up at the airport. And when I told him about the first time I heard a parapsychologist give a talk I realised I was making a lot of assumptions.

As I started talking about the parapsychologist's research on the growth of spiritualist churches in Australia, I mentioned the Fox sisters from the

1800s. They are an example of spiritualists who eventually admitted that they did not have psychic abilities. Yet according to the parapsychologist whose

It's also very important for skeptics to learn about what kind of world we're in, the history of the field, and how people are led to believe in weird things – which includes people like ourselves.

presentation I attended, the Fox sisters never recanted their psychic powers. In her community of spiritualists, they continue to be very influential examples of spiritualists who can communicate with the dead.

I assumed that by saying "the Fox sisters" that any skeptic would know who I was talking about. Or that they may have checked out the book *The Psychic Mafia* by Lamar M Keene, which discusses these spiritualist churches in detail and how Keene himself used to work as a spiritualist before admitting all his psychic activities were achieved by fraudulent means.

In addition, I would think that most skeptics would likely know about psychologist Ray Hyman, who is considered one of the founders of the modern-day skeptic movement. He, along with James Randi, Paul Kurtz and Martin Gardner, used to believe in palmistry and was a practitioner, much as Lamar M Keene was a practitioner of spiritualism.

As Professor Hyman said in an interview with the American station PBS:

"When I first began doing palm reading for money, I did not believe that it really worked. However, I was amazed when my clients insisted that everything I was telling them was uncannily

accurate. By the time I began college, I was a true believer. I had no doubts that palmistry worked.

"When I was a sophomore in college, a friend suggested that I try and read my next client's palm by telling her the opposite of what the lines said. If her heart line indicated that she did not like to display her emotions, I would tell her that she was the sort of person who displays her emotions openly, and so on.

"To my astonishment, this client was thrilled at how accurately I had captured her personality. So I tried the same experiment on my next few clients. The results were the same! By now, I was coming to realization that whatever was happening in a palm reading session, it had nothing to do with the lines in the hand."

My thinking that skeptics in general already know these stories, have read this book or that book, or have done research into a particular field is a huge assumption on my part. I don't mean to be judgemental – this isn't anything that's unusual for any field that is growing and developing and getting new people interested in it all the time.

Finding out that skeptics are just as human as anyone else, and that people you used to look up to in skepticism are just as fallible as anyone anywhere, is an important lesson too.

I find myself thinking that I need to keep on reading and listening, and talk to more and

more people if I feel discouraged or think that I don't know enough about a topic to have an informed opinion – all of which led to my starting a podcast back in 2009.

So, communicating skepticism is not just about outreach to those people who may not know Ray Hyman's palm reading story and believe that there is something in palmistry. It's also very important for skeptics to learn about what kind of world

weight, gained a new boyfriend and is made of biodegradable plastic, all in the same sentence. (Sometimes you want to know about whether the Dark Energy Survey is really going to explain whether the universe is expanding at an accelerated rate... *and* whether Sara Tetro will host the new season of *New Zealand's Next Top Model*.)

While at the hairdressers I found an article about Australian women bonding over their

influenced by our values and the people around us.

This is where effective skepticism starts crossing over into the need to learn more about effective science communication – especially if, like me, you're of the view that skepticism is about understanding and using that understanding to inform both yourself and others about paranormal and pseudoscientific claims, especially if there's a risk of harm.



Support group: Like-minded alien alien abductees share their experiences in *New Idea*.

we're in, the history of the field, and how people are led to believe in weird things – which includes people like ourselves.

For example, before the Wellington conference started, I decided to go to the hairdresser – which is the only place I ever feel comfortable about reading the kinds of magazines that people usually laugh about. Those kinds of magazines which feature Angelina Jolie looking really upset about being photographed with a huge fluorescent banner on her face saying she's lost

shared experience of contact with alien life visiting Earth.

One of them is a scientist; the others are teachers and accountants or clerical workers. They're all involved in a network of like-minded alien abductees, who talk about how they used to feel very isolated and afraid about how they'd be treated by the general public, until they started talking to each other and sharing their experiences.

For me this is an excellent reminder of how scientific understandings are reinforced and

Inspiring Australia

In 2010 the Australian government began an initiative called Inspiring Australia. While I'm not employed by Inspiring Australia, I've worked at events where they have been involved, such as ScienceRewired conferences.

Inspiring Australia is an Australian national strategy for engagement with the sciences. Its goals

include improving science communication and helping engage the Australian community with science. It has produced a range of programmes and expanded existing ones to help achieve its goals, including publishing reports from expert working groups, a Science Engagement Toolkit, Prime Minister's Prizes for Science and National Science Week. There is a similar initiative in the UK called the British Council, which runs science projects to communicate messages around exciting or topical

scientific issues, focusing on science and sustainability.

There are a great number of science outreach and consultation groups in Australia much as there are in New Zealand, as Elf Eldridge described in his talk at the conference (see *NZ Skeptic* 109). ScienceRewired is one of them. They have run two conferences where they have gathered together a number of these groups to discuss similar interests and goals, and even to see if united projects can be encouraged. Another is Science in Public, which train scientists to interact with the media.

But back to the UFO-believing women in my gossip magazine at the hairdresser. One of them was a scientist. In fact, there are probably plenty of creationists, global warming denialists and paranormal claim supporters who say “but I’m a scientist...” Why is there a problem?

Australian science communicators Dr Will Grant and Merryn McKinnon have said on *The Conversation* website (another great source for science outreach) that knowing science factoids doesn’t necessarily indicate in-depth understanding:

“Science literacy surveys such as these do nothing except keep academics busy, tick various grant recipient boxes and make the general public feel more disillusioned about their scientific abilities. Would a Nobel laureate in physics be able to answer biology questions? Possibly. But we don’t ask them to. We recognise it’s not their field of expertise. So why are we asking the general public questions about science unrelated to most peoples’ expertise or day-to-day lives?”

For me, such a survey firstly seemed odd, considering how popular science seems to be amongst pop culture – the most popular podcasts online include those by Dr Karl Kruszelnicki and Brian Cox and Robin Ince’s *The Infinite Monkey Cage*; both Brian Cox’s and David Attenborough’s tours sell out when they



tour overseas. I know of many scientists, artists and activists who have signed on to be a part of an app called the Incomplete Map of the Cosmic Genome, and probably everyone here thinks “Science Is F*ing Awesome” – so why is there a gap?

Dr Craig Cormick of Australia’s CSIRO has written:

“Values-based studies show there are strong and existing values that largely impact the way we think about science and technology, and any attempts to educate or inform people about the benefits or risks of any new technology will be accepted or rejected based on people’s existing values.”

We also saw this in the research that was demonstrated at the conference by Matt McCrudden, on how people may not reject the science on the basis of lacking scientific literacy or education – they often have plenty of

both both. But they have fundamental values that some science and technology clashes strongly with. So, what to do?

Communication

The interaction between online and the real world is where I like to live when it comes to science and skepticism, and contributing to both is what I work on. For example, in Australia there’s a concern about how the mainstream media communicates science. In the space of two years, 1000 journalist jobs were lost, and science reporters were particularly badly hit. That doesn’t mean that we lost all health and science coverage. And that also doesn’t mean that we as readers – and more importantly, consumers – can’t encourage coverage in the media.

I ended up contacting a journalist, who, with no skeptical group influence, created the No Jab No Play Campaign in the *Sunday Telegraph*. This campaign, which started in the state of New South Wales and called for the state government to ban non-immunised children from daycare facilities, ran for two weeks, and was then echoed by a number of other media outlets.

The stories included personal accounts of family tragedies and resilience (such as the case of Dana McCaffery, who died of whooping cough aged four weeks), and regional effects of low vaccination rates. The campaign’s prompting of political figures resulted in changed laws in support of vaccination. Other media outlets, like the *Sydney Morning Herald* and *Herald Sun*, soon echoed the pro-vaccination rally.

The journalist I contacted wrote:

Basically it started because I was searching for a childcare centre in NSW and became aware of the loophole in the law. I asked *Sunday Telegraph* editor Mick Carroll and *Daily Telegraph* editor Paul Whittaker if they were keen to let me run a campaign. They were, so I assigned reporters led by Jane Hansen to about 35 story ideas and we approached state and federal governments telling them what we were about to do. Neither had a commitment to change the law so we started rolling out the stories from May 5th.

We ran approximately 60 stories and by two weeks later, NSW Opposition leader John Robertson and Tony Abbott both said they would act. Robertson said he would introduce bills to parliament – whereupon premier Barry O’Farrell announced he’d put a plan to Cabinet that went even further than Robertson’s proposed bill. We are still campaigning for federal change – although Abbott is on board, we’d rather have legislation before parliament than a promise.

We have copped a huge amount of vitriol and nastiness but also vast support from our readers. Our heartland is western Sydney, where the vast majority of parents vaccinate. Their children’s health is put at risk by parents in wealthy parts of Sydney where rates are much lower, and in ‘alternative lifestyle’ areas like Byron Bay where rates are shockingly low.

We are proud to have changed the law but now we want to help change people’s attitudes by continuing to report the facts about vaccinations – they save lives.

One journalist became inspired and made a difference,

and she doesn’t even identify as a skeptic. Her values were what made her act, and those shared values were a bridge to others to promote action.

Of course, science and technology continues to be a political issue – and scientists will continue to comment and encourage action on political movements in a number of ways. We can do our part by not only encouraging community radio, local newspapers, donating and voting in favour of their messages, but by being media producers ourselves.

Tactics can include:

- Wikipedia editing – there’s a number of groups, started by the Royal Institution in the UK, who have done “Wiki-bombing” to improve the profiles of women in science and science topics. The same can and has been done for skeptical topics and people.
- Improving and updating existing flyers on skeptical topics;
- Creating media releases;
- Working on finding contacts who are willing to speak to the press and building a media list that can be featured for easy reference for mainstream media. I joined a number of community radio stations as a volunteer and discovered that they, and mainstream media, often enjoy good skeptical stories to feature along with news items.
- Sites like *Doubtful News* and *Snopes* collate information from around the world, and they could all use our support – it’d also be great to see more self-sustaining sites like *Freethought Blogs*, who have both provided a platform

for bloggers and pay for their efforts through advertising.

- Creating book clubs and suggesting good texts;
- Improving our general knowledge of skeptical history and celebrating those figures so they are not forgotten through events and outreach about what they have done.
- Free video hangouts and conferences could be a solution to the isolation that many of us feel in an overwhelmingly credulous world. Inclusivity – as mentioned by Dr Pamela Gay at the NZ Skeptics Conference last year – is easy to reflect in events like that one and others. Outreach means taking a step to make the changes you want to have made, and to continue in that direction if at first you don’t succeed.
- Finally, passing on information and news you find fun, interesting and enjoyable to your friends and family, because in my experience, it also helps refresh your own passion for skepticism. It’s why I podcast. It’s why I continue to be a student of skepticism. It’s why I’m here.

Kylie Sturgess is a Philosophy teacher, blogger at Patheos and podcaster at Token Skeptic, and has conducted over a hundred interviews including artists, scientists, politicians and activists worldwide. She’s the author of *The Scope Of Skepticism: Interviews, Essays and Observations From the Token Skeptic Podcast*, writes the ‘Curiouser and Curiouser’ column at the *Committee for Skeptical Inquiry* website and travels internationally lecturing on feminism, skepticism and science.

Society for Science Based Healthcare – up and running

A new group advocating a strong basis in rigorous science for the provision of safe and effective healthcare has been established in New Zealand. Mark Hanna explains.

THERE is a lot of medical nonsense in New Zealand. It's common to see large 'Natural Health' sections in pharmacies containing homeopathic products and similarly unevidenced concoctions. Listen to the radio and you'll likely hear ads for unevidenced 'Sleep Drops' or magnetic mattress underlays that purportedly offer 'Drug Free Pain Relief'. You won't have to look far to find a chiropractor who'll claim to treat anything from asthma to autism, or an acupuncturist that'll unblock the flow of the undetectable substrate of the universe with a needle, in order to cure your arthritis. You may even find them sharing an office.

Even the New Zealand government supports some of this. The New Zealand Qualifications Authority (NZQA) accredits courses on pseudoscientific topics ranging from homeopathy to iridology. The Accident Compensation Corporation (ACC) uses public money to fund acupuncture for many injury types, even when their own reviews of the literature have shown the treatments to be unsupported by evidence.

Despite the regulations in place to protect the public's

right to make informed choices about their healthcare, medical nonsense is flourishing in New Zealand. Pharmacists are bound by their industry code of ethics not to sell or promote products without "credible evidence of efficacy", health testimonials in ads are banned by the Medicines Act, and unsubstantiated representations in trade are banned by the Fair Trading Act. Yet you don't have to look far to find examples of any or all of these.

In many cases the problem is that the regulations aren't actively enforced. If no one brings violations to the attention of the regulators, they will be left alone. Even when they are pointed out, sometimes the body in charge of dealing with it simply doesn't have the resources to spare. There is a very real need for activism in this area.

In an effort to turn the tide of medical pseudoscience, a new activist organisation has been founded. The Society for Science Based Healthcare exists to protect your right to make informed choices about your healthcare.

The society is a group of experts and activists working to counter this mountain of

misinformation, and to support healthcare options that are based on science such as vaccination and community water fluoridation. Primarily, we make use of the current regulatory framework in order to remove misleading medical claims from advertisements and publications.

Although the society was only founded in June this year, we have been collaborating as a group for months prior to that and have accomplished a fair deal in that time. Here are a few examples of our successes from earlier this year:

A chiropractic business called Vital Chiropractic made a number of claims regarding chiropractic on their website, including that:

"those with back pain, sciatica, headaches, [insert condition here] usually feel a whole lot better when they are under Chiropractic care"

and that:

"Chiropractic is SO good at boosting the immune system that people under regular chiropractic care have an immune system that functions 200% better".

Upon seeing these claims on their website, we laid a complaint with the ASA on the basis

that they did not seem to be supported by evidence. Although the advertiser attempted to provide evidence to support its claims, the ASA's complaints board ruled that what they provided was "not sufficiently robust" to substantiate their claims, and therefore ruled that the claims be removed.

In May, a US business called Osmosis Skincare generated a fair amount of media attention about what they were saying was an "innovative new technology" for preventing sunburn. All you had to do was take some of it with some water a short time before heading out into the sun, and you'd be protected from UV radiation. The odd part, though, is that this product is just plain old water, albeit with a sprinkling of pseudoscience. We laid a complaint with the ASA regarding these claims, on the basis that they were unsubstantiated and that they abused scientific terminology, applying a smokescreen of pseudoscientific jargon like "isolates the precise frequencies needed to neutralize UVA and UVB". In response to the complaint, the company responded that an "independent clinical trial" (which predictably turned

out to be a laughable mess) was due to be completed in the US soon, but they didn't have any evidence at the time. As such, the ASA upheld the complaint and these products have since been removed from their New Zealand website.

In June, New Zealand's largest 'natural health' store Health 2000 stated in their bimonthly free magazine/catalogue that the influenza vaccine is an "onslaught of toxins and mercury". We challenged them on this fact, informing them that the flu jab in New Zealand doesn't contain thiomersal (known in the US as thimerosal), the mercury-based preservative whose safety is supported by years of epidemiological evidence. Under threat of having the complaint escalated to the Press Council, the editor of Health 2000's publication promised to print a "clarification" in their next issue clarifying that their characterisation of the flu vaccine was wrong, which they have since complied with.

We're looking for people who are willing and able to help us with this work. If you're an expert in a relevant field, or you want to try your hand at some activism, please get in touch with us. If you know someone

Recent successes

These are the latest claims taken to the ASA by the SSBH, with their outcomes and names of the submitters.

Romoco Wellness website
(Settled: Mark Honeychurch)

Rainmaker H2O website
(Upheld: Gold)

In-Sync Minerals in New Zealand Journal of Natural Medicine magazine (Upheld: Gold)

Woolrest Biomag Google ads and website (Settled: Mark Hanna)

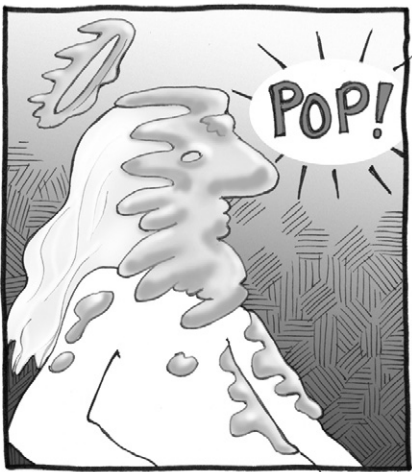
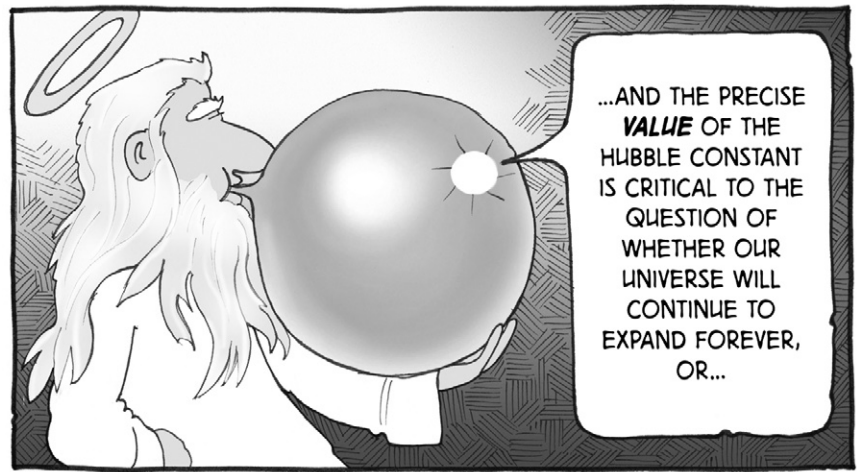
NZ Bowen Therapy in New Zealand Journal of Natural Medicine magazine (Settled: Simon McAuliffe)

else who might be interested, let them know we exist and want their help. You can contact the society via email at sbh@sbh.org.nz, or read some more about us on our website at sbh.org.nz

Mark Hanna is a consumer advocate from Auckland who recently co-founded the Society for Science Based Healthcare. You can read about his activism at honestuniverse.com or follow him on Twitter at [@HonestUniverse](https://twitter.com/HonestUniverse)

Parallel

by Nick Kim



‘Orphan Conspiracies’ in need of a good home

The Orphan Conspiracies: 29 Conspiracy Theories from The Orphan Trilogy, by James & Lance Morcan. US\$5.62 (Kindle Edition), Amazon. Reviewed by David Riddell.

LANCE and James Morcan are a New Zealand father-and-son writing team who have between them produced five novels. These include *The Orphan Trilogy*, a series about a group of genetically enhanced superhumans raised from birth to do the bidding of a shadowy elite who secretly control the world. Sounds far-fetched, although Goodreads members have rated the first in the series, *The Ninth Orphan*, at #7 on the site’s list of Best Spy Novels – just behind *The Girl With the Dragon Tattoo* and just ahead of *Smiley’s People*. On the other hand the entire trilogy rates only 255th equal on the Conspiracy Fiction list (Dan

Brown holds the top two spots), so I’m not sure how credible that ranking is.

In the course of researching background for their books, the Morcans say they explored “all sorts of alternative concepts” and sought out people who could enlighten them about these. Many readers have asked how much truth there is in the conspiracies they describe, and *The Orphan Conspiracies* sets out to answer those questions.

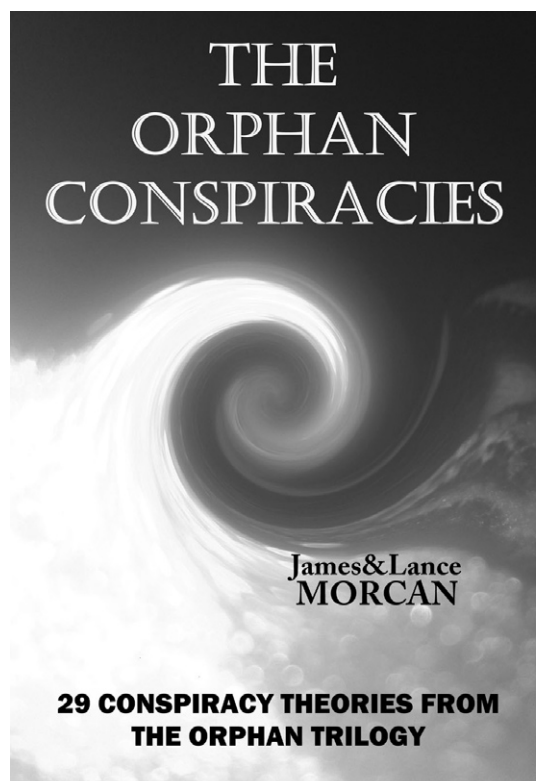
They take pains in their introduction to distance themselves from those they refer to as the Tinfoil Hat Network; probably

95 percent of conspiracy theories are pure crackpot stuff with not a shred of evidence to support them, they say. But, they maintain, there are more believable theories out there which are potentially true. Without pausing for breath and without a trace of irony they then give an example: the Establishment discredits conspiracy theories in general by disseminating the most bizarre output from the Tinfoil Hatters, so as to undermine the credibility of those “independent

researchers” who may publish awkward truths.

The book is divided into 29 chapters, each outlining a particular conspiracy, or set of conspiracies. The first is on false flag operations, in which a country’s political and/or military leaders stage an attack by an enemy in order to justify their own aggression. There are several documented accounts of such events, although one of the best examples, the staged assault on a German border radio station at Gleiwitz¹ used by the Nazis to justify their invasion of Poland, is not mentioned by the Morcans. Rather, they frame recent tensions with North Korea in these terms, and provide considerable detail on the Gulf of Tonkin incident² which led to the ramping up of American military involvement in Vietnam. However although declassified documents now clearly show that the Americans fired first, and that a second alleged attack by North Vietnamese naval forces never happened, to me the incident looks more like cock-up than conspiracy. Certainly the Americans didn’t profit from it in the long term.

This chapter also has some interesting material on Operation Northwoods³, which involved plans drawn up by



the Joint Chiefs of Staff to assassinate Cuban émigrés, sink boats of Cuban refugees, hijack planes, blow up a US ship, and orchestrate terrorism in American cities, all to be blamed on Fidel Castro as a justification for intervention in Cuba. The plans were real enough, but they were rejected by President Kennedy in 1962, and Joint Chiefs chairman General Lyman Lemnitzer was transferred to another job a few months later. “The following year, Kennedy was assassinated in Dallas, Texas, while Lemnitzer was appointed Supreme Allied Commander of NATO,” the Morcans (correctly) state. “Go figure!” they add.

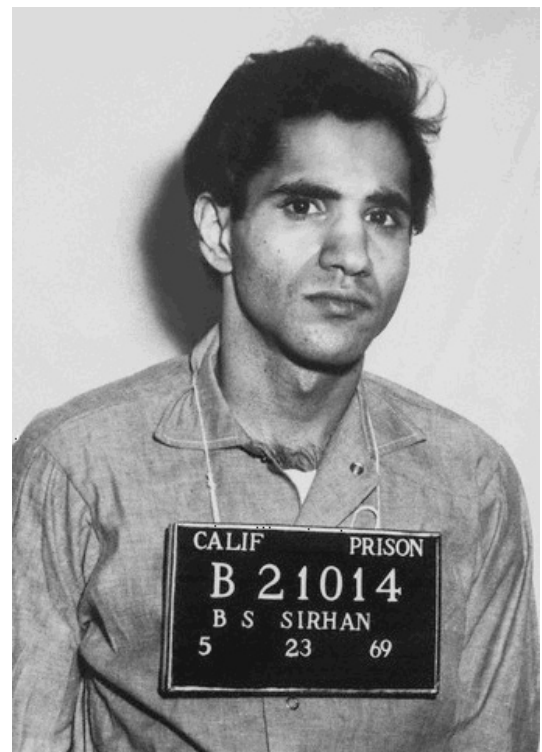
The next chapter on mind control starts fairly solidly with the Nazi Lebensborn⁴ programme, which is well-documented although it involved conventional indoctrination techniques on young children rather than ‘brainwashing’ of adults. The authors slide from this by way of Project Paperclip⁵ (which after World War II relocated German scientists, many of them Nazis) to America’s Project MK-Ultra. This latter programme, also well-documented in spite of the CIA destroying most records of it in 1973, investigated mind control and interrogation techniques, including attempts to erase personalities of subjects and construct new ones. Sadly, the researchers became very adept at the former but never managed the latter, leaving many of their experimental subjects severely damaged⁶. The programme’s director, Sidney Gottlieb, concluded his work had been useless⁷.

The Morcans, however, are not so sure. In later chapters,

with minimal evidence, they suggest assassins such as Lee Harvey Oswald, Mark Chapman (Chapman’s victim John Lennon, being prominent in the peace movement, was evidently a major threat to the establishment) and Sirhan Sirhan were mind-controlled “real-life Manchurian Candidates”, acting under the influence of subliminal commands, possibly embedded in JD Salinger’s novel *Catcher in the Rye*. They portray Sirhan as being in a “hypnotic state” the night he shot Robert Kennedy, and ignore statements he has made in intervening years⁸ that he killed the presidential candidate because of his support for Israel (Sirhan is a Palestinian).

Rather more interesting is the Morcans’ take on John Hinckley Jr, who attempted to assassinate Ronald Reagan. They point out, apparently correctly⁹, that Hinckley’s father was a personal friend of George HW Bush – who would have become president had the assassination attempt succeeded. His brother was due to have lunch with George W Bush the day after the shooting. Fascinating stuff, though surely if the Bush family had prior knowledge they would have taken steps to distance themselves from Hinckley’s family in the period around the event? Or perhaps the Bushes are cleverer than they appear, and that’s just what they want us to think...

That’s about as good as *The Orphan Conspiracies* gets.



Sirhan Sirhan: Crazy lone gunman or mind-controlled Manchurian Candidate, or something else? Photo: California Department of Corrections.

While continuing to mock the Tinfoil Hatters, the authors’ evidence for their claim that a shadowy “Splinter Civilization” secretly controls global affairs for their own benefit repeatedly strains credibility.

Take the chapter on suppressed science. This has plenty of material that is very familiar to skeptics, such as the supposedly suppressed discoveries of Nikola Tesla, free-energy machines repeatedly quashed by the scientific and industrial elites, HAARP, and of course cold fusion. All these claims have been thoroughly debunked. Another chapter describes the work of “leading Japanese scientist” Takaaki Musha (who wrote the book’s Foreword); he claims “superluminal tunnelling photons” in microtubules in the brain explain human intelligence, and could lead to the development of

Welcome to 'enlightenment'

HERALD on Sunday (17 August) reporter Russell Blackstock has been along to check out Avatar – not the movie, but a self-improvement course founded by an ex-Scientologist.

Blackstock's "induction into self-empowerment" began at the organisation's first New Zealand event in Auckland's Mercure Hotel, with two "Avatar masters" whispering into his ears from either side. "Would you like to rise above the sorrows and struggles of the world and see them as they really are?" one asks.

"Would you like to experience the state of consciousness traditionally described as enlightenment?" the other adds.

Avatar, whose headquarters are in Orlando, Florida, is believed to have more than 100,000 followers in more than 50 countries. It is alleged to use multi-level marketing techniques to recruit young newcomers, who may go on to spend thousands of dollars on courses. On offer at the Mercure event were a nine-day international programme costing \$3050, or a two-day workshop for \$402.50. Blackstock didn't sign up for either, but did attend a free one-hour session featuring a video of Avatar founder Harry Palmer addressing a conference.

"I'm going to tell you about impressions," he began, before launching into a tale about dinosaur feet imprints found in a desert creek alongside others left by early humans. "Let me now tell you a story about two frogs stuck in a pit," he continued. This

was followed by another yarn about a lion cub that had been adopted by a flock of sheep.

Before forming Avatar in 1986, Palmer and his partner ran the Elmira Church of Scientology, until the church sued them for trademark infringement. In 2005 the Florida Department of Health found he used the term 'psychologist' illegally and made him sign a cease-and-desist agreement.

Otago University psychology lecturer Jackie Hunter says Avatar looks very warm and fuzzy on the surface. "When you delve a bit deeper, it is all largely based on a concept of 'me, me, me'," he says. "Focusing almost solely on oneself, however, is unlikely to bring anyone much true happiness; just the opposite."

Blackstock also reports how a distraught Kiwi couple said they felt "helpless" watching a close family member rack up tens of thousands of dollars of debt after being introduced to the Avatar programme. "She looked like someone who had just had a mental breakdown or was sedated. Beside some obvious changes in her behaviour, her critical thinking was non-existent. She was acting like a robot."

The couple say their relative has now left Avatar and is recovering from her experience.

Skeptics look beyond belief

The *Sunday Star-Times* (1 June) has published a lengthy

profile on the Skeptics by freelance journalist Jeremy Olds

"Magenta-haired" Auckland University microbiologist Siouxsie Wiles said it felt like Skeptics was the wrong name for the group "...we're critical thinkers."

Olds described the society's inception in 1986, and earlier struggles with names. "[T]he late Bernard Howard ... recalled in an 1999 editorial: 'We were worried about a name for our new baby – a snappy New Zealand Skeptics or a lengthy dignified New Zealand Committee for the Scientific Investigation of Claims of the Paranormal, on the US model.'

"They went for the latter, but brevity soon won out."

The Skeptics were said to be enraged when Stratford psychics Alex and Donna Fairclough claimed to have helped locate missing person Stephen Murphy (*NZ Skeptic III*). Spokesperson Vicki Hyde told a local paper the comments were irresponsible, because the psychic industry exploits the vulnerable. "It gave [psychics] a legitimacy they don't deserve," she recalled.

"I don't really care what they have to say. We know the truth and that's the way it is," Donna Fairclough responded.

"Jeers like hers don't faze the skeptics, though, who believe criticism leveraged against them is mostly based on misperception," Olds wrote.

“They say, ‘skeptics? Oh, they pooh-pooh everything and they’re nasty to people and they refuse to believe anything,’” said Viki Hyde. “And we say, there’s a difference between belief based on faith and belief based on evidence.”

Gold (whose founding of Skeptics in the Pub was also described in the article) said he agreed: “The term can have negative-sounding connotations attached to it. People tend to hear ‘skeptic’ and think, ‘Cynics – you guys don’t believe in anything – you’re just there to debunk knowledge,’ when it’s kind of the complete opposite.”

Astrologer didn’t see that coming

A Petone man who claims to be a famous Indian astrologer has been caught out in a sting by a local journalist (*Hutt News*, 19 August).

The reporter paid an initial \$20 consultation fee for some career advice from Pandith Balraja Swami, who counted turned-over sea shells, traced the lines on his palm, and dropped a pinch or two of coloured powder on his forehead. The reporter was told his job prospects would greatly improve, there would be money, marriage and maybe even babies.

But there was a catch. The reporter had too much bad black magic standing in his way, and it would take the astrologer at least three prayers totalling \$450 to heal him. Cash up front was required. Sensing the reporter was hesitant he lowered the fee to \$300; his son offered to go with

the reporter to collect money for a deposit from an ATM.

One of the astrologer’s customers had contacted the *Hutt News* the previous week; Atamira Te Paki said she had gone to see Pandit Balraja Swami after reading an advertisement in the paper. She was only charged \$10 as an initial consultation fee, but was then told it would take three prayers at \$150 per prayer to cleanse her black magic.

Sue Nicholson (!) warned people to be cautious and said she would like to test him. “I get a lot of Indian people come to me because they have been frightened by other Indian astrologers and I say: ‘Don’t even bother’.”

The *Hutt News* has declined to take any more advertising from Pandith Balraja Swami.

Hamilton fluoride battle over

The seemingly interminable battle over the fluoridation of Hamilton’s water supply (see *NZ Skeptic* 108-112) may finally be over (*TVNZ*, 3 September).

The Hamilton City Council says Safe Water Alternative NZ (SWANZ), a group established to lodge a judicial review to test the council’s decision to resume fluoridation, has now withdrawn from the review.

A High Court hearing set for 9 September was cancelled and fluoride will remain in Hamilton’s water supply. The council says as part of a settlement, it will not seek costs from SWANZ.

SWANZ says it wants the council to provide unfluoridated water stations for the almost

12,000 people who voted in a referendum last year against having fluoride added to their water. The Hamilton metropolitan area has a population of 212,000, so it seems an even 200,000 are at the least not too worried about fluoride. In which case, good luck with that.

Dad wants public to fund dodgy treatment

Another call has gone out for the public to fund treatment at a dodgy overseas clinic (*NZ Herald*, 17 July).

Auckland father of two Luke Elliott (33) wants \$30,000 to travel to the US for injections of Etanercept, an anti-arthritis drug, into his neck, in the hope it will restore his life after a stroke nine years ago left him unable to speak and with limited movement. The treatment is offered by Dr Edward Tobinick, a registered medical practitioner who has been using Etanercept in this off-label manner for about 14 years. There have been no proper trials of the treatment, and just a week after the *Herald* article’s publication, Dr Tobinick sued Dr Steven Novella (soon to be seen at this year’s NZ Skeptics Conference), along with the Science-Based Medicine website and SGU (Skeptics Guide to the Universe) Productions, for an article he wrote about it on the SBM site in May 2013.

Dr Tobinick’s claims and practice raise many red flags, says Dr Novella. “In my opinion he is using legal thuggery in an attempt to intimidate me and silence my free speech because he finds its content inconvenient.”

From Page 11

self-aware computers. Furthermore, if “an individual’s brain can connect with the superluminal field which is part of all other living organisms, then it may be possible for that individual to come from an awareness of what has been termed the *universal brain*.” Enough said.

Then there is Ormus, a substance fed to the orphans in the Morcans’ novels to enhance their mental and physical functioning. It’s not clear why this is a conspiracy, but there are hundreds of websites promoting various formulations of this white powder which purportedly consists of “monoatomic” forms of gold, rhodium, iridium, copper, platinum and other metals. These can supposedly become superconducting under certain conditions. Ingesting small quantities is said to have effects including “[s]lowing aging, assisting mental wellbeing, replacing gray hair, improving eyesight, re-growing missing teeth, increasing body immunity and correcting damaged DNA”. It’s even reported to have caused a cat to regrow its amputated tail.

RationalWiki¹⁰ on the other hand describes it as “a fictitious group of substances ... They definitely do not contain any gold or other precious metals, which is in fact a good thing, because water-soluble forms of precious metals are very toxic.”

The greatest value of *The Orphan Conspiracies* may be as a reference for those wanting insight into the minds of conspiracy theorists, though it’s far from a comprehensive treatment of all

the theories out there. Nothing on the Moon Landing Hoax, 9/11 as an Inside Job, Chemtrails, or Barack Obama’s birth certificate, for example. It could also do with better references for some of the claims made, though in the



The Federal Emergency Management Agency (FEMA) has roles which include providing caravans as temporary housing following natural disasters. Conspiracy theorists accuse the agency of running a network of secret prisons. Photo: FEMA.

age of the search engine this is less important than it was.

More serious is the selective quoting of some sources. For example when discussing alleged secret prisons set up to detain anyone deemed a threat to national security the Morcans cite RationalWiki as saying:

“There are several videos purporting to show footage of the camps, as well as shots of ominous-looking fences and webpages listing locations of over 800 camps, allegedly all fully guarded and staffed full-time despite being completely empty.”

They omit the next sentence which reads:

“In addition to the implausibility of such a massive conspiracy being kept totally silent, the evidence is damaged by the fact that the videos and pictures actually

depict everything from National Guard training centers to Amtrak repair stations to North Korean labor camps.”¹¹

Disclaimers at the end of almost every chapter stating they could be totally wrong about all they’ve just written, or that they’re merely reporting the ideas of others, don’t really cut it either.

Just occasionally there’s a snippet that may give the reader pause, and yes, there are undoubtedly powerful individuals and groups who use their positions to further increase their wealth and power at the expense of the rest of us. But if the conspiracy theorists (among whose numbers the Morcans definitely sit despite their protestations) really want to convince us our destiny is ruled by sinister secret overlords, they’ll have to do a lot better than this.

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Skeptical Desiderata

Bo skeptically amidst the lies and the guile, and take comfort in whatever rationality there may be.

As far as possible, without being an asshole, question established orthodoxies and fatuous argument. Speak your truth quietly and clearly even to the dull and ignorant, for though it conflicts with the evidence, they too have their story.

Avoid creationists and climate change deniers, for they are vexatious to rational argument and their minds are lost. You will argue with them in vain and become bitter.

Enjoy your small victories. Keep interested in your local blogs and groups, however humble; they are the force that propels the changing attitudes of our time.

Exercise caution in your medical choices, for the world is full of quackery. But let this not blind you to what progress there is, and remember that many persons strive for scientific rigour. Everywhere life is full of enquiry.

Be yourself, unless evidence suggests that you should be otherwise. Especially, do not feign knowledge you do not have. Do not be skeptical about love, even though it can be couched in terms of evolutionary psychology, for you shall have less fun.

Take kindly the counsel of the years, gracefully surrendering the falsehoods of youth, and remember that confirmation bias still plies its trade within you. Nurture an appreciation of being wrong, for you undoubtedly still hold to some cherished untruth.

Do not distress yourself with religious fundamentalists. Their convictions are born of their time in history, and it is for the world at large to leave them behind.

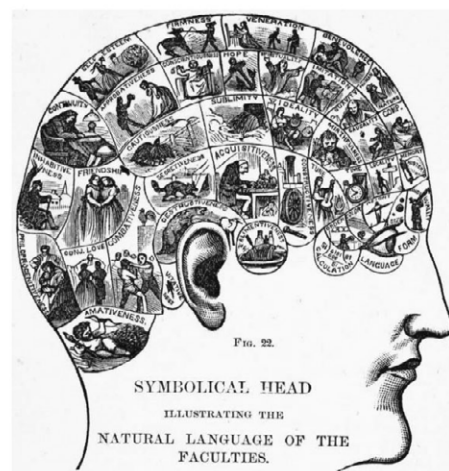
Beyond a wholesome questioning, be gentle with yourself. Write that blog entry, but try to get outside too.

You are a child of the universe, made of the same stuff as trees and stars, and whether or not it is clear to you, the universe is expanding with or without your help.

Therefore be at peace with rationality, even if your idea of it scarcely overlaps that of your neighbour's. And whatever campaign you wage to lift the veil of ignorance, remember to take time out for science fiction. Use sunscreen.

With all of its sham, chicanery and prescientific beliefs, it is still a beautiful world.

You are a skeptic, so be happy.



By Matthew Willey, with apologies to Max Ehrman

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.

Interview with the entity

This year the NZ Skeptics Annual General Meeting was held separately from the conference, on 7 September in Wellington. Among the business attended to was the election of a new chair-entity, Mark Honeychurch, replacing Gold who takes on the new role of Head Geek, responsible for technological support. The NZ Skeptic took the opportunity to ask Mark a few questions about himself, and his vision for skepticism in New Zealand.

I CAN tell from your accent you're not from around here; can you tell us where you're from?

I'm from the Isles of Scilly, which is a small group of islands off the south-west coast of mainland England. They're still part of England, but it's pretty remote there and the population is only around 2000. After leaving the Scillies, at 16, I spent two years at military college (Welbeck), followed by four years at Bristol University, where I was bored to death by a Mechanical Engineering degree and quit the army. Since then I've lived and worked in both Sydney and London, as well as travelling a fair amount.

And what brought you to New Zealand?

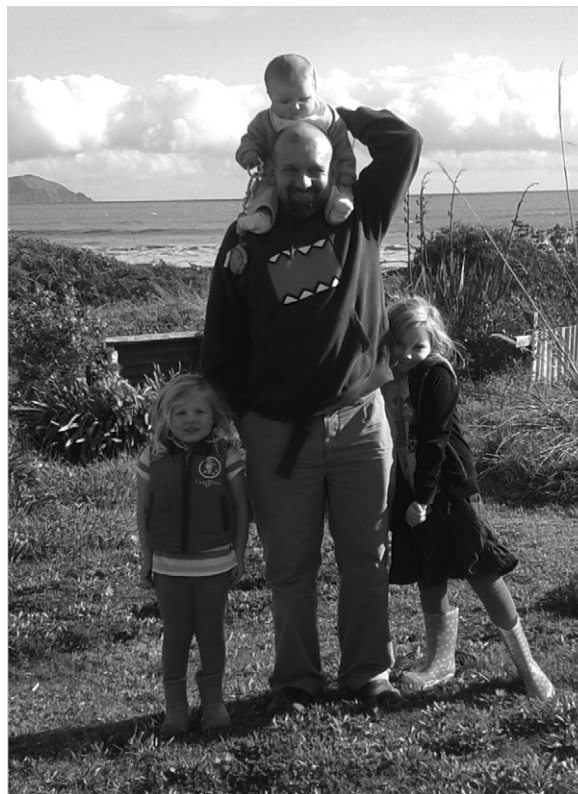
My wife and I were on one of our long travelling jaunts, and New Zealand was our next stop after spending just under a year in the Middle East (where we visited countries including Iran, Azerbaijan, Syria, Lebanon and Jordan). New Zealand was meant to have been a year long stop on the way to South America, but nine years later we seem to still

be here - with citizenship, three Kiwi kids and a mortgage!

What, for that matter, brought you to skepticism?

I guess I've always been enquiring and had a love for science. Back in secondary school,

to tell me that the Earth was very young and that God made everything. Despite the lack of knowledge I had in this area at the time, I tried my hardest to argue with them about issues they brought up such as Piltdown Man and carbon dating.



Mark Honeychurch, with Abigail, left, Amelia and Rebecca.

when I was about 13 or 14, one of the local churches organised for some evangelical youth leaders to come over to the islands and talk to us at school about Jesus and Creation. I was very surprised that they were trying

Were you involved with the skeptical movement back in England?

I was more a member of the geek community in England, although there's a lot of crossover between the two. I was skeptical and enquiring about things as they crossed my path, but I didn't actively go out looking for nonsense.

How long have you been part of the NZ Skeptics and what issues have you been involved with?

I joined the organised skeptical movement about three years ago, and was introduced to the Skeptics Society via the Wellington Skeptics in the Pub meetings. From there I went on to help organise last year's Skeptics Conference, and it was during this time that Gold suggested I should pay my dues and join the Skeptics Society. At the AGM last year I put my hand up to

join the committee, and found myself taking over the video librarian role. As a committee member I've taken stock of how the society is run, and have tried to suggest changes where they seem sensible.

What issues do you see as being the primary focus for the NZ Skeptics in the short to medium term?

In the immediate term, I think there are several internal areas of the society that we need to focus on. Firstly, the website is starting to look old hasn't been loved for quite a while now. Gold is doing a fantastic job of preparing a new website, which we hope to have up and running in the near future.

Related to the website, there are several areas such as membership and the journal that we are hoping to make simpler and more accessible by using both the website and other online tools available to us.

With regards to looking outwards from the society to what is happening in New Zealand, the committee has a few plans for how we can make a positive difference.

Robert Woolf is looking into setting up a more formalised structure for the society to be able to offer skeptical speakers to local groups.

Lisa Taylor has joined the committee and has taken on an outreach role. As part of this new role, we hope to make sure we are sufficiently inclusive of members and non-members who aren't bearded white males (who I have nothing against, as I count myself amongst their ranks).

I hope to foster greater ties with other skeptically aligned organisations in New Zealand and overseas, such as the NZARH and the Australian Skeptics. We also have Skeptics Society committee members who are central members of the Humanist Society, the Society for Science Based Healthcare and Making Sense of Fluoride, as well as the founder of the NZ Skeptics in the Pub movement. I hope that this will help us to work together where possible on some of the more pernicious problems we face.

In the longer term, there are many charlatans out there whose claims need to be challenged. The Skeptics Society is ideally placed, with Vicki and Michael as media spokespeople, to be a respected doubting voice whenever woo makes the news. It was great to hear Stephen Price (Nicky Hager's lawyer) talk at this year's SkeptiCamp in Wellington, with his advice on how best to avoid being sued for defamation. I'm now keen to see the society carefully pick the most egregious examples in NZ of people and organisations making a fast buck off the unsuspecting public, and mount organised campaigns against them.

It's obvious from your contributions on the committee that you have a strong technical background; how do you see the society making use of the technological tools that are becoming available?

You're right about my background – I work in IT, and am currently employed as a hardware engineer. I think there are a lot of good tools that are freely available online, and the Society has already started adopting

them. We use Google Hangouts for our monthly committee meetings, Google Drive for collaboratively working online and Trello for organising events such as the conference. Beyond this, there are other tools we are checking out, such as Slack and Loomio, that may help us to communicate better on a day-to-day basis, and Matt Beavan, our treasurer, is currently evaluating online financial packages (Wave and Xero) to manage our accounts.

What do you do when you're not at work or being skeptical?

Apart from the time I spend with my family, I'm a member of the Humanist Society council and I'm helping them to adopt online tools to improve management of their website, newsletter, membership and other day-to-day tasks. I'm also one of the founders of CoderDojo (coderdojo.org.nz), which is a club where we teach kids how to code for free. We only have one club up and running so far, in Porirua, but we're gaining momentum (we're currently oversubscribed by around 100 percent for each session) and are hoping to expand in the near future.

What is your star sign?

I'm going to have to add a shameless plug here. On Skepticism Today (skepticism.today), which is a podcast I'm a member of, we have a competition where we are given several astrological predictions for the previous day. Without being told which star sign each horoscope is for, we have to guess which one we think best fits our day. Tune in to find out my star sign!

Yet another science metric – the Kardashian Index

Siouxsie Wiles doesn't find too much humour in a supposedly satirical paper.



TWITTER exploded recently after Neil Hall, a professor at the University of Liverpool who studies the genomes of the parasites that cause malaria and sleeping sickness, published a (supposedly satirical) paper in the journal *Genome Biology*. Rather than read his paper, I recommend you read the annotated version by Red Ink¹. But first, here's the abstract:

In the era of social media there are now many different ways that a scientist can build their public profile; the publication of high-quality scientific papers being just one. While social media is a valuable tool for outreach and the sharing of ideas, there is a danger that this form of communication is gaining too high a value and that we are losing sight of key metrics of scientific value, such as citation indices. To help quantify this, I propose the 'Kardashian Index', a measure of discrepancy between a scientist's social media profile and publication record based on the direct comparison of numbers of citations and Twitter followers.

Ummm, communicating through social media is "gaining too high a value"? That's hilarious. In my experience, being active on social media is given no value by the majority of the establishment (ie silverbacks like Prof Hall). And as to citation indices being a "key metric of scientific value"? Of value to other academics maybe. But science is valuable outside of academia too, and citation indices will rarely capture that.

To calculate a scientist's Kardashian Index (K-index), Prof Hall says we first need to calculate the number of Twitter followers a particular scientist should have, using the following equation:

$$F = 43.3C^{0.32} \text{ (Eq 1)}$$

Where F is the number of Twitter followers and C is the number of citations.

The K-index is then calculated using a second equation

$$\text{K-index} = F(a)/F(c) \text{ (Eq 2)}$$

Where F(a) is the actual number of Twitter followers the researcher has and F(c) is the number they "should" have given their citations.

As Prof Hall explains:

"...a high K-index is a warning to the community that researcher X may have built their public profile on shaky foundations, while a very low K-index suggests that a scientist is being undervalued. Here, I propose that those people whose K-index is greater than 5 can be considered 'Science Kardashians'..."

Prof Hall did a "preliminary proof-of-concept study" using a "randomish selection of 40 scientists". You can see how they scored in Figure 1 of his paper (see next page).

Prof Hall goes on to conclude:

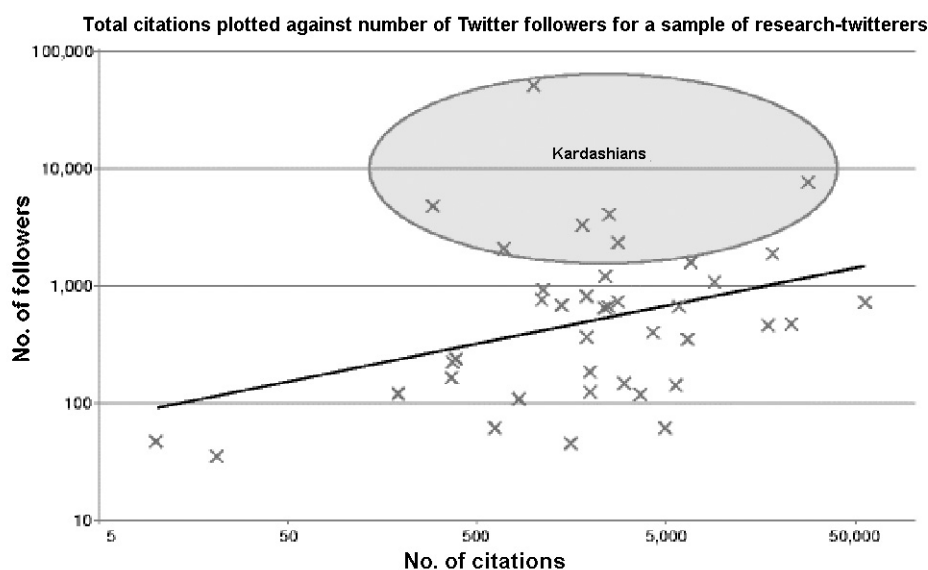
I propose that all scientists calculate their own K-index on an annual basis and include it in their Twitter profile. Not only does this help others decide how much weight they should give to someone's 140 character wisdom, it can also be an incentive – if your K-index gets above 5, then it's time to get off Twitter and write those papers.

Dr Michelle Dickinson, our very own Nanogirl² worked out her K-index and scored 35, the same as Prof Brian Cox. Both clearly need to get back to writing their papers.

There are so many things wrong with Prof Hall's piece it's hard to know where to begin. Red Ink's great annotated version of his paper points out some of them¹. Dr Kate Clancy has also written a nice post³ explaining why this bit of fun isn't actually funny and Dr Keith Bradnam has turned it on its head suggesting the Tesla index as a measure of scientific isolation⁴.

sense of humour. Ms Kardashian is famous for being famous and not ashamed in the slightest. But she is hardly alone. In fact, she appears to be just one of a new breed of such celebrities.

That Prof Hall chose to name his index after a vacuous woman is a wonderful example of everyday sexism. Make no mistake, while Prof Hall's piece is supposedly satirical, it is a snide



Plotted: the Kardashian Index in practice. From Hall (2014).

What really makes my blood boil about Prof Hall's new index is that he named it after Kim Kardashian, who according to Wikipedia is a reality TV star famous for being the daughter of OJ Simpson's defense lawyer, a friend of wealthy socialite Paris Hilton and star of a sex tape. She is now a successful businesswoman with several clothes lines and fragrances to her name and an estimated fortune of \$45 million.

Ms Kardashian's most recent venture is a smartphone game in which players have to build a career in Hollywood, accumulating wealth and fans. You have to give it to her. That lady has a

swipe at those with a passion for communicating science using a derogatory association with a woman to do so. And he got his paper published in a peer-reviewed journal where it will no doubt provide ammunition to those who already belittle the work science communicators do, all with a citation to back their bigotry.

The light at the end of the tunnel though was the #AlternativeScienceMetrics hashtag that was spawned on Twitter, and storified by @mcdawg⁵. The proposed alternative science metrics include gems like these:

- From @Protohedgehog: the Sean Bean Index, measuring the number of times you write a great paper, only to have it killed by peer review;
- From @IanMulvany: the George Lucas Index, how often a later paper totally invalidates earlier work that you did;
- From @OSIRISREx: the Viral Factor: how many times your research is misinterpreted into a factoid on a pop social media page;
- From @quicklyround: the Ulysses Factor – papers cited by everybody but that nobody has actually read to the end;
- From @LouWoodley: The Lindt Factor – the number of bars of chocolate needed to make the “minor revisions” requested;
- From @Koalha: Sacrificial Efficiency: number of accepted papers / burnt out grad student.

Jason McDermott discusses the pros and cons of some of them on his blog⁶.

Which would get your vote?

Dr Siouxsie Wiles is a research scientist with a background in medical and environmental microbiology. She has made a career out of combining her twin passions of bioluminescence and microorganisms. This article is based on a post from her blog, *Infectious Thoughts*.

Links

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Climate science: why the uncertainty?

I NOTE the raft of letters in the last magazine on anthropogenic climate change (ACC). While I, on the committee, am perfectly happy with the position statement and scientific consensus. (ie, Mankind is generating large quantities of CO₂, – this entraps solar radiation and causes temperature to increase) I don't understand the massive spread and uncertainty of this increase: 1 to 5 degrees. Hundreds of percent? In fact you can easily find other scientists that say 0.7 to 8 degrees, and even a couple more that claim these figures are half what they should be! They all claim they have good data. Who to believe? Can't climate science please do a little better?

Lets compare it with quantum electrodynamics (like ACC, not a trivial science). Just a few years after Chadwick discovered the neutron, Paul Dirac predicted the magnetic strength of the electron to within 0.007 percent of its modern value. Maxwell's electromagnetic equations were developed in the 1860s after three years of hard work (*sans* PC or 'app' – gasp!) and are as precise today as in 1865, and are as precise to as many digits as one can afford to buy. Einstein predicted how tiny changes in gravity will alter time, and it took 43 years for atomic clock technology to develop to prove his theory within one percent.

I have also seen, in this debate, a common enough trick by pundits. It's a special technique called 'unit-hopping'. Some will quote in tonnes of carbon, some

in tonnes of CO₂ (they are not the same!). Some use ppm, some a percentage, and so on. This seems cunningly designed to confuse and confound everybody from newcomer to veteran. Just when things are starting to make sense, the pundit quickly hops to a new unit, so it's hard to follow the line of reasoning.

And obsfucation is a common enough trick. For instance, our WWF claims that if we all had one car-less day each week, changed to CFL/LED lighting and turned off un-needed appliances, we would "have a big impact". Well, they throw about some very large numbers indeed (quite correct ones to be fair, but almost certainly designed to impress the statistically-challenged) but then omit to state their figures work out to about a one percent saving. Well, to me, one percent is not, and never will, be "big". I do all those things, and much more, but still consider my contribution minuscule compared with the 'elephants in the corner of the room'.

So why all the name-calling, angst and vitriol? Well, the uncertainty, the unit-hopping, and the plethora of experts leading to confusion and doubt about their error budgets hardly help. But I also believe a partial answer lies in the cognitive dissonance between the desire to talk about it, and the unpleasant shock of having to actually do something (more simply: lots of hui but little dui). I see one answer in the excellent book *Heat* by George Monbiot (No 1 arch-enemy of

ACC deniers). He points out the changes the world needs to make are possible, but only just, and with consequential dramatic lifestyle changes, but it's political suicide for any government to order this.

The comment at the top of the right hand column on page six of *NZ Skeptic 111* illustrates this quite well: "... a social scientist stood up and said that we were all wrong because the real question is how society actually responds to major issues. There was a bit of a stunned silence and the chairman changed the subject". What a party pooper!

Given that we generate about .087 percent of the world's emissions, and that about half our emissions come from farming, mainly dairy, we can only make a large impression (mainly on ourselves) by eliminating farming, especially dairy. So yes, let's do it, that'll show the rest of the world! But this is akin to me worrying about the last two incandescent bulbs in my house: do I need to spend \$10-\$40 on CFL/LED replacements for lights that spend about one-minute per week on? Then I drive about the city, and even after midnight, the place is lit up like a Xmas tree. Worry about saving energy and our carbon hoof-print? Yeah right! The happy-talk and hand-waving is a little overwhelming.

And the committee certainly knows my views on this, but I find the most appalling hypocrisy of all is that of the darling

of parts of the climate change industry, one Al Gore, who used some 220,000 kW/hours of power in a year. I use around 6,300 pa. His excuse? That he works from home. Well, sunshine, so do I!

Lastly, I agree that Gold's phrase re "the sack" is wrong. Don't get me wrong, O' Briain is an incredibly funny stand-up, and a favourite of mine, and it does not offend me personally (after umpteen years in the military, I can be as abrasive and foul-mouthed as any drill-sergeant) but it's just plain unnecessary, in my opinion.

Anyway enough from me, I'm off to rustle some cows and then the abbatoir!

Barry Lennox
Rangiora

'Anti-catastrophic principle' is not Pascal's wager

In the Winter 2014 NZ Skeptic Hans Laven states that engaging in actions to combat climate change now, despite uncertainties, because of the expected outcome is equivalent to Pascal's Wager and thus fallacious.

However the writer appears to have misunderstood why Pascal's Wager is fallacious. Pascal's Wager is in fact a valid argument (one whose conclusion necessarily follows from its premises). If P is the probability of God existing then the expected benefit of believing in God is $P \times \infty + (1-P) \times f = \infty$ whereas the expected benefit of not believing in God is $P \times (-\infty) + (1-P) \times g = -\infty$ (where f and g represent the finite loss). Believing in God obviously has the better pay-off and given the description of the problem this is the correct result. The reason Pascal's Wager is fallacious is because it is not sound (the premises aren't true). The options are not 'believe in God' or 'not believe in God' but rather 'believe in X' where X is no-god or any of a number of gods. Additionally in many cases the belief in one god precludes the belief in others so it is no longer a binary choice. With climate change on the other hand the situation is completely characterised by it either happening or not and so the 'Anti-catastrophic principle' in this case is not fallacious.

Dr Josh Voorkamp
Dunedin

Skeptics should support consensus

I am concerned at the disproportionate number of letters denying Anthropogenic Climate Change in issue #112.

Climate Change Scientists are the primary authority on the subject of climate change and the scientific consensus supports humans causing the current escalation of climate change on Earth.

Not one of your recent correspondents was a climate change scientist and any arguments made were based on the views of a tiny minority of the scientific community.

A Skeptic would take into account this disparity, and agree with the current scientific consensus, until the experts determine otherwise.

There are no Climate Change Skeptics, only deniers of the current scientific consensus.

Matt Beavan
Wairarapa

from the vaults

Group wants cash to fight ritual abuse

Matt Conway

A new group set up to counter ritual abuse and satanic worship has applied for almost \$40,000 from the Government and the Lottery Grants Board to set up an office and send members to a conference in the United States.

End Ritual Abuse (ERA) was started by a Christchurch woman whose son was found to have been molested by creche worker Peter Ellis. She cannot be named as a

suppression order protects the boy's identity. We'll call her Alison.

Alison defines ritual abuse as organised physical, sexual and psychological assaults of child and adult victims, characterised by torture and mind control.

She alleges her son, then aged between 3 and 5, was splattered in blood and buried alive in a coffin during his time at the Christchurch Civic Childcare Centre.

... But New Zealand Skeptics spokesman Dr Denis Dutton, a vocal critic of ritual abuse believers, slammed ERA's bid for public money.

I'm sure the Lottery Grants Board would not be so foolish as to support something as whacky as ritual abuse theories. If they do, they can expect UFO abductees to be next in the queue for money." ...

– From *Sunday Star-Times*, 15 October 1994. Reprinted in *NZ Skeptic* 33

Survival in a bacterial world

*The discovery of how the stomach bacterium *Helicobacter pylori* was found to be responsible for gastric ulcers is a classic tale of revolution in scientific understanding. But the full story is far more complex – and only part of an emerging appreciation of the role played by our microbial fellow-travellers. Alison Campbell explains.*



IN their first-year microbiology lectures, our students hear about *Helicobacter pylori*, the bacterium associated with the development of gastric ulcers. This discovery eventually saw Barry Marshall and Robin Warren receive the 2005 Nobel Prize for Physiology or Medicine. The trouble is, I suspect that this is all that they hear about a story that is considerably more complex.

The story of *H. pylori* is just one part of Jessica Snyder Sachs's highly readable and thoroughly referenced book, *Good Germs, Bad Germs*, which introduces the reader to the complexities of the human microbiome: the intricate microbial ecosystems found on and within the human body.

The book begins with the harrowing tale of a young man's death from a rampant MRSA infection, and of a child living with multiple life-threatening allergies – two tales linked by the unforeseen effects of our overuse of antibiotics and our fixation on hygiene. (Actually, the former was not entirely unseen: in his

1945 Nobel Prize lecture, Alexander Fleming commented on the possibility that overuse of penicillin could see the development of resistant bacteria. Unfortunately, at the time this warning went unheeded – if indeed it was really heard – for example, penicillin was available as an over-the-counter drug in the US for almost a decade after its introduction in the 1950s, which would undoubtedly have contributed to the development of resistant strains of microbes.)

Then, after an introduction to the “war on germs” and scientists' search for the ‘magic bullets’ that would (it was hoped) allow us to vanquish them forever, it's on to “life on man”. Wherein I learned heaps, including the thought-provoking suggestion that there may be some adaptive significance to the fact that babies usually exit the vagina with their heads face backwards, towards the mother's anus. For babies guts are colonised by bacteria very soon after birth – and they may receive an inoculum of faecal matter on the way out, to join the lactobacilli from the vagina itself and bifidobacteria from breast milk.

Incidentally, while all this may sound uncomfortably gummy, there's good evidence that the gut microflora are essential for survival. Lab animals reared in absolutely germ-free conditions, and whose guts never develop a microbial flora, fail to thrive. What's more, Snyder Sachs comments that the combined action of several species of intestinal bacteria “liberate as much as 30 percent of the calories a person absorbs from food, especially from high carbohydrate meals.”

Reading on – and it was really hard to put this book down! – you'll hear about the hygiene hypothesis, which suggests that many of the inflammatory diseases that plague us today are an unforeseen result of lives that are too clean. Along with this is the ‘dirt vaccine’: the idea that vaccination with a mycoplasma may help to redirect the overzealous immune response underlying many allergies. Then it's on to a deeper look at the development of antibiotic resistance and the rise of the superbugs, which has been exacerbated by the widespread use of antibiotics in farm animals. (Encouragingly, Snyder Sachs notes that banning this use,

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bioblog

as in the Netherlands, can lead to a reduction in 'superbug' prevalence.) And finally, we look at our options for the future, and whether we can find a way to live in balance with our burgeoning microbial ecosystems.

And *H. pylori*? It turns out that this particular bacterium has been with us for at least 60,000 years, something that's been used to track human migration patterns that began when *Homo sapiens* first left Africa. *Helicobacter pylori* colonises the stomach in the first few months of life, before gastric acid secretion really ramps up, and can actually affect that acid secretion, lowering the pH enough that *Helicobacter* can survive but most other species are killed. There is a plus to this: the lowered pH reduces

the effects of acid reflux and the development of oesophageal cancer. But then, there are those gastric ulcers – which apparently didn't really become an issue until the 1830s, when this was mainly a disease of the upper classes, possibly linked to a decline in colonisation related to improved sanitation and the use of early antibiotic products. And gastric ulcers remain virtually unknown in undeveloped regions of the world such as Africa, where most people become colonised in infancy. It may be that delaying or disrupting *H. pylori* colonisation with water sanitation or antibiotics has somehow altered the immunological 'truce' that this microbe forged with our immune systems over thousands, possibly millions, of years.

I like the full, more complex story; it's so much more satisfying than the '*Helicobacter* = bad' version, and it's a much better reflection of the dynamic relationship between humans and the microbes that call us home.

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.

Reference

Good Germs, Bad Germs: health and survival in a bacterial world. Jessica Snyder Sachs (2008). Hill & Wang. ISBN (e-book): 0809016427

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Friday December 5th to Sunday December 7th, Auckland University

Special Guests: the cast of the Skeptics Guide to the Universe and US skeptical musician George Hrab.

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