

*If there be a skeptical star I was born under it, yet I
have lived all my days in complete astonishment.*

William MacNeile Dixon

**The MMR hoax
Amber teething beads
Fraud or well-meaning?
ID in NZ**

new zealand **Skeptic**

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These modern versions of Marriage (left),*

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

Material supplied by email or CD is appreciated.

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A milestone

THIS is the 100th issue of the NZ Skeptic, and looking back over the last 25 years it's clear some things have changed while others, well, haven't. The earliest issue I have to hand is No. 12 from March 1989, which opens with an article titled 'Come in Homeopathy! Your Time is Up!' Twenty-two years later homeopathy is as popular as ever, despite ongoing critiques (see Newsfront, this issue). Issue 14 has a note about Nibiru, the mythical planet some believe will sweep through the inner solar system next year – at our conference last year we heard there are many who still worry about this. And No. 16 has a piece on a Nelson homeopath predicting earthquakes.

None of the examples of pseudoscience which were around in those early years of the NZ Skeptic has gone extinct – in fact I suspect once a pseudoscience appears it will continue to attract at least some support. I once read that phrenology was an exception, but www.phrenology.org is out there advocating “a positive approach to scientific Phrenology”. Even the Flat Earth Society has recently been resurrected, after a period of quiescence (theflatearthsociety.org).

But there have been changes in this publication's focus. While astrology is still very much with us, it's several years since the topic has attracted anything but the briefest mention here. There's also much less these days on psychic surgeons, New Age philosophy or telepathy. In their place are more articles on issues that don't specifically involve the paranormal, but where a critical eye is still valuable. The piece on the MMR panic in this issue is a good example, as are the ones on the Dore learning programme and fake data compression software in the last couple of issues. There are also more articles taking a wider view of why people believe in weird things, to use Michael Shermer's useful phrase.

I'd like to claim there was some kind of overarching editorial policy behind this, but the NZ Skeptic has never had the resources to commission material, and is dependent on submitted contributions. Many of these are generated by the annual conferences, so ultimately reflect trends in the wider skeptical movement. This is part of the society's evolution, which back in 2007 saw the dropping of the old formal name, the New Zealand Committee for Scientific Investigation of Claims of the Paranormal, in favour of NZ Skeptics.

We have members with a broad range of political views, and not everyone will agree with every article. As it says on the left, opinions expressed are those of the authors, and not necessarily of NZ Skeptics as a whole. In the end this publication is for the society's members. If you have a comment on an article, send it in. If you have an idea for an article of your own, let us know. The skeptical movement is all about ideas, and the NZ Skeptic is intended to foster their free exchange. May it continue to do so for at least another 100 issues.

David

The (bad) science behind the MMR hoax

Siouxsie Wiles

The world-wide panic over the MMR vaccine was sparked by the actions of one doctor who breached several standards of scientific practice. This article is based on a presentation to the 2010 NZ Skeptics conference.

EVERY few years, the World Health Organisation (WHO) publishes a series of 'death tables', a summary of how many people died in a given year and the causes of death. The tables make interesting reading. The

As a microbiologist, I am staggered by the growing anti-vaccination movement. Vaccination has to be the success story of 'modern' medicine. Just look at the benefits: vaccination can provide lifelong protection, does

risk-free, the benefits to both the vaccinated individual and the wider community (through 'herd immunity') far outweigh the risks.

What is fascinating about vaccination 'hysteria' is that different countries have different scares, even though they are using the same vaccines. One such scare, which has resulted in a resurgence of measles in a number of countries, relates to the MMR vaccine. This is a freeze-dried preparation of three living but disabled viruses: measles, mumps and rubella. In the 1990s, a British doctor by the name of Andrew Wakefield claimed there was a link between MMR vaccination and autism. He claimed to have discovered a new syndrome, which he called autistic colitis, in which autistic children were found to have a particular kind of gut disease.

He also claimed to have found that the appearance of symptoms of autism coincided with MMR vaccination, and children with autistic colitis had measles virus in their guts. His findings were based on a study of 12 children



Ouch: Vaccination could prevent four million deaths annually, yet opposition to the practice is growing, in part as a result of panics such as that generated by the MMR hoax.

figures published for 2004 show that a third of all deaths worldwide were due to infectious diseases, a staggering 15.1 million people¹. Of these, four million may have been prevented by vaccination.

not rely on correct diagnosis or treatment being available and can avoid some forms of autoimmune disease that can be triggered by infection. As the saying goes, prevention is better than a cure. While it is true that vaccines are not 100 percent

with developmental and intestinal problems, published in the *Lancet* medical journal in 1998². Nine of the children were diagnosed with autism. The children were believed to have been developing normally and then suddenly regressed, and parents were asked to recall how close to the time of MMR vaccination the symptoms appeared.

The study suffers from a number of crucial flaws, not least the lack of blinding or control groups, or potential for parents to incorrectly recall the appearance of symptoms. It also turned out that Andrew Wakefield had numerous conflicts of interest: he was receiving money from lawyers looking to build a case against a vaccine manufacturer, had submitted a patent on an alternative measles vaccine, breached ethics compliances and even paid children at a birthday party for donating blood.

The journalist Brian Deer was instrumental in bringing all of these conflicts to the public's attention and has maintained a website (briandeer.com/mmr-lancet.htm) summarising his investigations into Wakefield and the MMR debacle. Recently, the *British Medical Journal* (*BMJ*) commissioned Deer to write a series of articles summarising his findings³⁻⁵. In 2010, Andrew Wakefield was found guilty of misconduct and struck off the medical register in the UK and the *Lancet* finally retracted his paper.

In an editorial accompanying one of Deer's articles, the *BMJ*'s editors asked:

"What of Wakefield's other publications? In light of this new information their veracity must be questioned. Past experience tells us that research misconduct is rarely isolated behaviour."

Wakefield had numerous conflicts of interest: he was receiving money from lawyers looking to build a case against a vaccine manufacturer, had submitted a patent on an alternative measles vaccine, breached ethics compliances and even paid children at a birthday party for donating blood.

What of his other work? Indeed, the *Lancet* paper was just the first in a series of papers by Wakefield attempting to link autism with measles. One of the things he showed was that measles virus could be detected in the guts of autistic children using a technique called the polymerase chain reaction (PCR). PCR is a fantastic technique used to amplify very small amounts of target genetic material to generate over a billion copies. In

a nutshell this means PCR can take something that is undetectable and make it detectable. However, one of the downsides of such a sensitive technique is that it is very easy to contaminate, so proper controls are really important. For those who want to know how PCR works, there are some very nice videos online ([youtube/eEcy9k_KsDI](https://www.youtube.com/watch?v=eEcy9k_KsDI)).

One of the crucial things needed to carry out PCR is a set of very specific 'primers' which recognise the region of genetic material that you want to amplify (Fig 1). You need primers to each end of the region of interest and then PCR amplifies the bit between the primers. So if the primers match the wrong region, you will end up with a large amount of the wrong thing, a classic case of garbage in, garbage out. So the important things to remember are:

1. The primers need to be specific so that they only amplify what you are targeting and nothing else.
2. You have to be very, very careful not to contaminate the reaction.



Figure 1. Sequence of genetic material for amplification. Highlighted sequences are specific sequences matched by primers.

To make sure the primers are specific and nothing has been contaminated, it is crucial to include a number of controls alongside the samples being tested:

1. A negative control which has water in place of any target genetic material which will tell you whether you have had a contamination problem or not.

2. A negative control which has control genetic material that does not contain any of the target sequence which will tell you if your primers are specific enough.

3. A positive control which has genetic material that does contain the target sequence which will tell you if your reaction has worked.

So, you have your samples and your controls, the PCR machine has done its dash and you are left with a little tube filled with billions of copies of the target sequence (or none if the sample was negative...). This can then be visualised by gel electrophoresis and you are left with something like the picture in Fig 2.

Lane 1 contains a size standard, lane 2 is the negative control containing no genetic material, lane 3 is the negative control containing no target sequence (the very faint band is just the background genetic material), lane 4 is the positive control containing the target sequence and lanes 5 and 6 are our unknown samples (which in this case are all positive). It is important to

say here that very rarely would you see an actual gel published in a paper. Most results are just described as the number of positive or negative samples. This is important as it leaves the reader assuming the correct controls were done. But it doesn't end with gel electrophoresis. To make absolutely certain, the

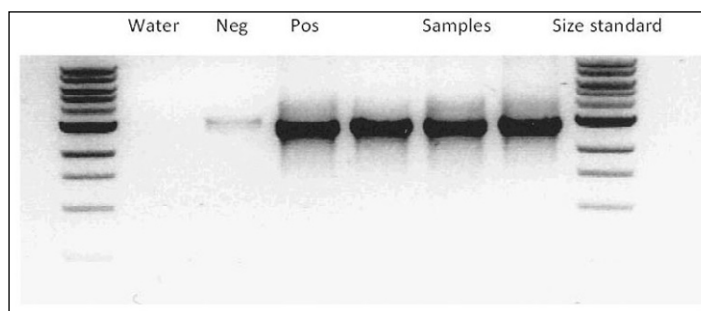


Figure 2. Visualisation of outcome of PCR reaction by gel electrophoresis.

amplified genetic material can be sequenced to confirm it is the correct thing. And if the claims you are making are wide-reaching and/or controversial then sequencing is exactly what should be done.

Andrew Wakefield hypothesised that exposure to the measles virus in the MMR vaccine was a factor in the emergence of his so-called 'autistic colitis' and that genetic material from the measles virus would be found in patients with the disease but not healthy controls. He supervised PhD student Nick Chadwick to investigate. The first paper they published (in January 1998) was in the *Journal of Virological Methods*, reporting a "rapid, sensitive and robust procedure" for amplifying measles RNA⁶. In August 1998 they published a second paper describing the use of the procedure to look for measles virus in samples from patients with inflammatory bowel disease (IBD)⁷. They

state: "These results show that either measles virus RNA was not present in the samples, or was present below the sensitivity limits known to have been achieved". They then went on to look at the children reported in the, now retracted, *Lancet* paper (that is, the ones with 'autistic colitis'). Wakefield never published these results but Nick Chadwick did write up his PhD thesis in 1998. Brian Deer has put the relevant information from the thesis on his website (briandeer.com/wakefield/nick-chadwick.htm). Nick Chadwick concludes: "None of the samples tested positive for

measles, mumps or rubella RNA, although viral RNA was successfully amplified in positive control samples". Despite this negative result from 1998, Wakefield then appears as senior author alongside a team of Japanese researchers in a paper published in April 2000 in the journal *Digestive Diseases and Sciences*⁸ where they report the detection of measles virus:

"One of eight patients with Crohn disease, one of three patients with ulcerative colitis, and three of nine children with autism, were positive. Controls were all negative. The sequences obtained from the patients with Crohn's disease shared the characteristics with wild-strain virus. The sequences obtained from the patients with ulcerative colitis and children with autism were consistent with being vaccine strains."

In 2002 Wakefield then published another, bigger study of

children suffering 'autistic colitis' with a team from Ireland⁹. They reported:

"Seventy five of 91 patients with a histologically confirmed diagnosis of ileal lymphonodular hyperplasia and enterocolitis were positive for measles virus in their intestinal tissue compared with five of 70 control patients."

Yasmin D'Souza and colleagues at McGill University in Canada published a very nice study in 2007 in which they compared the primers used by both the Japanese and Irish groups with their own primers for the measles virus on a range of IBD and control intestinal biopsy samples¹⁰. Any positive samples were verified by sequencing.

And the results? **The primers used by Wakefield and colleagues weren't specific for measles virus.** In fact, the amplified fragments were found to be of mammalian origin. What this means is that human samples should all be positive. Unsurprisingly, when D'Souza tried using genuine measles specific primers they "failed to demonstrate the presence of MV [measles virus] nucleic acids in intestinal biopsy samples from either patients with IBD or controls". They also

failed to find any measles virus in samples taken from over 50 autistic children¹¹. This does suggest that Andrew Wakefield's research conduct does not stop with the Lancet study.

There is now a huge body of evidence indicating that there is no link between vaccination and autism. Despite this, Andrew Wakefield is held up by many as a hero, fighting a corrupt system with the 'evil' pharmaceutical industry at its centre. Wakefield has recently published a book entitled *Callous Disregard: Autism and Vaccines - The Truth Behind a Tragedy*. One reviewer wrote:

"Dr. Wakefield sets the record straight. It was not he who showed callous disregard towards vulnerable, sick children with autism. It was the British medical establishment, the General Medical Council, the media and the pharmaceutical industry that threw the children under the bus to protect the vaccine program. This is a book for everyone who cares about our future".

Who needs evidence, hey?

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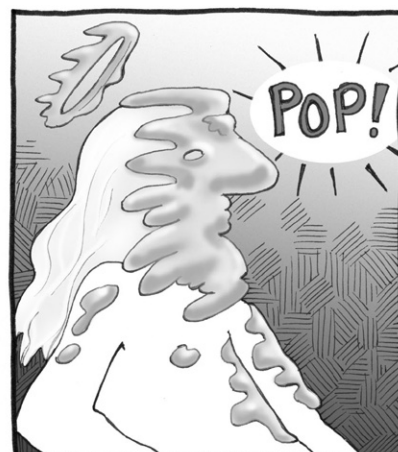
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Dr Siouxsie Wiles is a research scientist with a background in medical and environmental microbiology. She has made a career out of combining her twin passions of bioluminescence and microorganisms. After many years working in the UK, she recently relocated to the University of Auckland. Her research is currently focused on *Staphylococcus aureus* (the hospital superbug MRSA), *Streptococcus pyogenes* (the flesh-eating bug) and *Mycobacterium tuberculosis*. She is not in the pay of Big Pharma.



Amber teething beads: something to chew on

Darcy Cowan

A 'natural' way to manage teething pain has no plausible mechanism.

PARENTS, especially new parents like myself, are a vulnerable group. We tend to be full of anxiety that we are doing the 'right thing' by our children. Wherever you find a vulnerable group like this you also tend to find those who prey on such fears.

Being a new parent and a skeptic I have been on guard regarding dubious advice and practices, but so far I have actually been pleasantly surprised: I have not, as far as I've noticed, been subjected to any dubious advice. But recently I was confronted by a practice of a fellow new parent that I found a little disturbing. I'm talking about using necklaces of amber beads to reduce the pain of teething for babies.

Teething can be an especially stressful time for parents and children. The child may be experiencing pain as the new teeth break through the gums; this means an irritable child and frazzled parents. Anything that promises to relieve or prevent this harrowing time is gratefully embraced.

On to the amber beads. This practice disturbs me for several reasons. First is safety. The

necklace, if left on the baby for long periods, may pose a strangling hazard if it becomes caught on something. Most advertise that they are made to break easily to prevent this and that the beads are individually knotted onto the necklace to prevent scattering on breakage. However, this still seems to leave a broken string of beads in reach of a baby, and as most people know – anything a baby can get its hands on goes straight into the mouth. So choking is also a concern.

Now, I'm not one to be a worry wart over every little potential hazard; used correctly under parental supervision I suspect that the likelihood of a tragedy of this kind is low. But not zero. This, coupled with the low probability that the necklace actually does anything, is what worries me. The second disturbing thing is that parents are accepting that the necklaces work via word of mouth, and apparently not consulting their doctors before subjecting their child to an intervention of unknown safety and efficacy.

I have three main points I believe parents should consider before trying these beads (in

addition to the physical safety above). The first relates to basic plausibility.

There are several explanations for how the beads are supposed to work floating around the intertubes, many of the tinfoil hat brigade variety ("... it generates pain relieving magnetic field"). Only one explanation I have found makes biological sense so that's the one I'll be focusing on.

Baltic amber is known to contain between three and eight percent succinic acid. According to proponents this is released from the beads and into your baby. The succinic acid then allegedly has an analgesic effect and so reduces the pain of teething. Here is where my first point regarding plausibility comes in.

Amber is tough. Really tough. This is a material that has persisted for thousands and in some cases millions of years unchanged. Suffering through innumerable climatic cycles of heating and cooling. Yet this same tough unchanging material will happily give up its chemical components upon the gentle heating it receives on being placed next to your baby's skin?

Colour me unconvinced. I found a 2010 paper on volatile degradation products from Baltic amber that doesn't mention succinic acid as an identified component. Related to this point, amber has a hardness on the Mohs scale of between 1 and 3. Baltic amber, which is usually touted as the therapeutic variety (because of the high succinic acid content), is at the high end of this scale at 2 – 2.5. To put this in perspective, Tin has a hardness of about 1.5 and Gold is 2.5-3. But let's say for argument's sake that clinically relevant amounts of succinic acid are released by the amber and absorbed by your baby's skin.

My second point then, relates directly to the claims made for succinic acid. Succinic acid is made in the body (and in plants) as part of the citric acid cycle (aka the Krebs cycle). It is also used in the food and beverage industry as a food acid (additive #363 to be precise). Interestingly, in this capacity there are recommendations from some quarters to avoid the substance ("avoid it, banned in some countries", warns www.foodreactions.org).

Even so, apart from its early use as a topical treatment for rheumatic pain, there is no evidence that I could find (searching Pubmed at least, where I would expect a decent study to be referenced) that it is effective as either an anti-inflammatory or general analgesic. Let me be clear on that. I don't mean low-quality evidence, I don't mean small, poorly designed trials with equivocal effects, I mean noth-

ing. Zip. Nada. In fact if anyone knows of any let me know because I find this complete lack quite surprising. I'm open to the idea that I was looking in the wrong place or was using incorrect search terms. So, unless there is late breaking news, it fails on that count as well. But what do we care about evidence of efficacy anyway? Let's throw this point out too, and move on to my final point to consider.



By Gum: Baltic amber has great natural beauty, but can it really help your child's teething?

Let's say that (a): the beads do indeed release succinic acid into your baby and (b): this succinic acid has an analgesic effect once it enters your baby's body. Doesn't the very fact that an unknown amount of a drug is being put into your baby's body bother you? (If it has biologic activity that can be used in a therapeutic fashion, it's a drug, no quibbling on that point please.)

What is that I hear? It's natural? Oh, well, that's okay then. No wait, it's not. I don't care what the origin of a compound is, the question is what are its effects on the body and do the benefits outweigh the risks. Let's replace succinic acid with some other naturally occurring substance, salicylic acid. This is a compound with known anti-

inflammatory properties. Would you be happy with a product that introduced unknown levels of this compound into your baby? What if I said that overdoses with this compound could lead to a one percent chance of death (emedicine.medscape.com/article/818242-overview#a0199)? It's natural; it's also the precursor to acetylsalicylic acid, otherwise known as Aspirin.

Now, lest I be accused of unnecessary fear-mongering and drawing false comparisons I would like to admit that at present there is no evidence to suggest that succinic acid is hazardous, nor even that it is potentially hazardous. This does not detract from my main point however. It isn't whether this particular compound is safe or not but that the reasoning around its use (ie "It's got to be good, it's natural") is faulty and cannot be used as a substitute for evidence.

Based on the complete lack of plausibility on any level of efficacy any potential for harm, however small, must tip the balance of the equation away from the use of this product. But don't trust me; talk to your doctor. I suspect though that given the complete lack of reliable information on this topic they will be left to rely on their own philosophy of harm vs benefit. In the final analysis, there are not always clear answers, but developing good critical thinking skills will at least provide you with a small light in the darkness.

Darcy Cowan lives in Hamilton, where he works at an environmental chemical testing laboratory and writes the Scepticon blog.

Fraud or Well-Meaning: it's all the same to me

Vicki Hyde

The paranormal field contains both con artists and the well-intentioned. It's often impossible to tell one from the other, but in the end it makes little difference. This article is based on a presentation to the University of the Third Age.

PEOPLE want reassurance about the future. We seek some kind of certainty, whether in the form of three-year political plans, saving for retirement, or looking for comfort in the various forms of crystal ball that try to make guesswork and psychological manipulation look like the truth.

We try to maintain a balance between wide-eyed credulity and close-minded cynicism as we're bombarded with claim and counter-claim, miracles, astounding revelations, scientific discoveries, technological advancement, belief, faith and fact. We look for explanations.

One of the things that makes us vulnerable to con artists and well-intentioned loonies alike is our tendency to want to believe that someone is being straight with us. If they say they can predict earthquakes, then that's what they are doing; if they say they can talk to the dead, then they really must be able to talk to the dead.

It's not considered polite to express any form of scepticism or disbelief. And even those whose job is to do so, such as the members of the Fourth Estate, are often caught out by this.

Something has to be really kooky sounding for our warning bells to go off, and there are people more than willing to dress up their favourite scam with all the trimmings of sophistry and science to get us to put hand to wallet, or simply just to believe in them and what they are telling us.

That said, it's my belief that the vast majority of people in the very dodgy paranormal and pseudoscience businesses are not being deliberately fraudulent. Wilfully ignorant perhaps: unquestioning believers in their own egos and super-powers certainly.

I don't know if forecaster Ken Ring is a fraud or really believes that he can predict the weather and earthquakes; whether he's motivated by a desire to sell as many books as possible or simply wants to help the public. I can say the same about Paddy Freaney who said he saw a moa up in the Craigieburn – it may have been a genuine sighting, or a mistake, or simply a clever marketing ploy to get more business for his nearby Bealey Hotel. And Deb Webber of *Sensing Murder* fame – was it a desire to help desperate parents that saw her claim to psychically connect

with missing Auckland toddler Aisling Symes or was it part of her pre-scheduled television appearance to hawk discounted entry tickets to her New Zealand tour?

You be the judge. But if it looks like a duck, swims like a duck, quacks like a duck ... there may be something fowl there.

Sometimes the signs are just too too obvious. And it really helps to be aware of them. Think of a little applied scepticism as consumer protection for the mind.

How good is the information being provided? If the photos are blurry, reserve judgement as to whether you are seeing Bigfoot or a man in a gorilla suit. If the clinical trial has a sample size of 12, all carefully selected by the man looking to connect autism and vaccinations to sue Big Pharma, then it's not Big Pharma you should be wary of. If the medium claims to be speaking to or about your dearly departed, listen closely to really see if they are telling you anything beyond the obvious.

On *Sensing Murder* Kelvin Cruickshank once pronounced

To Page 12

Medical researchers call for doctors to ditch homeopathy

A TAURANGA-based medical researcher is calling on doctors not to practise homeopathy or refer their patients to homeopaths (Bay of Plenty Times, 20 April).

In a letter to the New Zealand Medical Journal, Professor Shaun Holt and other senior researchers from New Zealand and the UK say “practising homeopathy or endorsing it by referring patients is not consistent with the ethical or regulatory requirements of practising medicine”.

One in eight New Zealand GPs practises homeopathy or refers patients to homeopaths.

The letter was triggered by the recently released Medical Council of New Zealand statement on complementary and alternative medicine, which informed doctors of the standards of practice that were expected of them. The statement said doctors must inform patients on the nature of alternative treatments they offered, the extent to which they were consistent with conventional theories of medicine, whether they had the support of the majority of doctors, and their likely effectiveness according to peer-reviewed medical publications.

Prof Holt cited a few examples of homeopathic products:

“Berlin Wall” – consists of dust from the Berlin Wall, diluted until none remains, sold to people to help them stop feeling repressed;

“Saturn” – light from a telescope aimed at the planet Saturn is focused on sugar, which is then diluted many times and given to people for allergies, amongst other things;

“Arsenic” – diluted until virtually none remained, then used to treat a range of symptoms including insomnia and obsessive-compulsive disorder.

Although homeopathic products did no harm, as they did not contain any active ingredients, there could be serious problems when people used them instead of real medicines, Prof Holt said.

Susanna Shelton, co-president of the New Zealand Council of Homeopaths, said Prof Holt’s claims were “unprofessional and unethical” to a profession that was well established and committed to people’s wellness.

Psychic prompts mass murder scare

Police in Texas have failed to find anything suspicious after searching a rural house following tip-offs from a psychic that multiple dismembered bodies were buried there (NZ Herald, 8 June).

The house in Hardin, north-east of Houston, was claimed to hold up to 30 bodies, including children.

Liberty county judge Craig McNair said the sheriff’s office

had received two calls. The first directed officers to an address in Hardin, but after officers found nothing the same caller told police the following day that they had the wrong house.

Officers approached the scene of the second tip-off and found blood on a back door and a foul odour coming from the house, leading to a search warrant.

After finding nothing except a pile of rotting garbage, police gave up the search – but not before “a source” had told CBS news that “a lot” of dismembered children’s bodies had indeed been found at the scene. Local television station KPRC was given the same information and the story was promptly followed up by news agencies AFP and Reuters. Before long the news that 30 bodies had been uncovered in a mass grave was leading BBC and Sky News channels in the UK and across the world.

“We have to take tips like this very seriously,” McNair said.

However, since the Houston Chronicle reported the calls had come from a woman who claimed to have psychic powers, questions have arisen over why police responded so vigorously.

Truck driver Joe Bankson said the blood came from his daughter’s boyfriend, who cut himself after getting drunk. He had no idea why anyone would call the police to his house. “I haven’t killed anybody,” he said. “And I have a lot of friends, but I haven’t helped anybody bury any bodies.”

Ghost comes calling

Waitara pensioner Irene Russ has spent the last year terrified of buzzing noises and eerie blue lights that woke her every morning at exactly 3.13am (Taranaki Daily News, 20 April).

She mentioned her problem to neighbours, who promised they would help get to the bottom of it. "A Maori man turned up and said the culprit was someone called Jack. Apparently Jack didn't want to believe he was dead."

Unconvinced, Mrs Russ made contact with a church minister, who told her that a man had slit his throat and died in the lounge and his wife was standing in the doorway to her bedroom. "He said there was another man hanging around in my room, and he told me to put crosses in all the spots where the bodies were."

By then Mrs Russ was scared to the extent of changing her toilet habits in fear of being in the lounge when the phenomena occurred.

Eventually she solved the mystery herself – her phone was dodgy. She had bought a new telephone, complete with buttons that glow to help her dial in the evening, in May last year. After working out the weird noises were coming from the phone, she placed a pillow slip over it.

"For the next two nights there were no lights, and when I took the pillow slip off the lights started the next night," she said. "When I heard the buzzing noise in the phone wires again I went to see what the lights were and that was when I discovered the phone was playing up."

Post-traumatic theory stressed

Columnist and former military historian Gwynne Dyer pondered recently over the Post-traumatic Stress Disorder (PTSD) rate of American soldiers, which is seven times as high as that of their British counterparts (Waikato Times, 30 April).

It's a statistic that undermines long-held assumptions, he says. His own was that the rise of PTSD in Western armies was mainly due to a major change in the way they trained their troops. Before 1945, armies just trained soldiers to shoot. After 1945, they started training their soldiers to kill people.

The change was triggered by a discovery made during World War II, that up to 90 percent of infantrymen found it impossible to kill enemy soldiers. By the early 1950s, US Army basic training sought to lay down reflex pathways that bypassed those inhibitions, training soldiers to snap-shoot at human-shaped targets that only appeared for a few seconds. They also psyched their young soldiers up until they believed they actually wanted to kill.

It worked: by the Vietnam war, 90 percent of American infantry were trying to kill their targets. Other Western armies adopted the same training techniques, with equally impressive results. But there was an obvious psychological price to be paid for all this, or so it seemed.

The Vietnam war was when the incidence of PTSD among American veterans began to soar. They had been tricked into doing something that was morally

abhorrent to them, and that was why so many of them fell apart afterwards, Dyer believed.

But then along comes this statistic about PTSD rates. The research, led by Neil Greenberg at King's College London, even points out that while the mental-health risk increases for American soldiers who do several tours of combat, there is no such link for British soldiers.

So what is going on? American writer Ethan Watters' recent book, *Crazy Like Us: The Globalisation of the American Psyche*, suggests American society has been permeated by psychoanalytical beliefs about the fragility of the human mind. This creates an expectation that people who have been through horrible experiences will be traumatised. In Britain, where the psychoanalytical approach never got such a hold on popular culture, this expectation is much rarer – and so are the symptoms of PTSD.

Watters goes on to speculate that the very high incidence of PTSD in American veterans is also due to the decline of religion, patriotism, and other belief systems that once gave a kind of meaning, however imaginary, to human suffering.

This is just ideologically driven nonsense, Dyer says. Britain, where the PTSD rate is seven times lower, is also less nationalistic and far less religious than the United States. But Watters' core question remains. Is PTSD really caused by what happened to veterans while they served in the military, or by the expectations of the civilian society they returned to afterwards?

From Page 9

this as an amazing revelation regarding the funeral of six-year-old murder victim Alicia O'Reilly:

"It sounds a little weird, but she must have been buried in a white coffin."

But there's nothing weird about a little girl being buried in a white coffin – it's a fairly common practice for children's funerals. Not to mention the fact that the coffin was clearly seen in the widespread television coverage of the funeral. I think he phrased it that way to make it sound more amazing, as if he really was getting knowledge from the beyond, and few of us would stop and say "hang on a minute..."

We all have a lot in common, and the psychic industry exploits that to make the banal sound amazing. There's a reason why mediums come up with the same names over and over again.

Mediums never come up with names like Piripi Te Aorangi or Sione, but concentrate on relatively common men's names. A widow-heavy clientele makes that a necessary line but, more subtly, men often have traditional family names. So, instead of names like Dwayne or Dylan, mediums will ask about John or Michael, Charles or Richard, William or David.

It would be surprising if you couldn't think of someone with the name John in your extended family. Mediums boost the odds by accepting middle names, nicknames, friends and colleagues, and they don't even

have to be dead to count as a hit. That can be explained away by saying the spirit world is watching over the living person. Mediums will commonly fire out a dozen names per reading, so it would be very surprising if they missed getting at least one apparent hit.

Some psychics hedge their

I often ask people, "how many times would it take for you to get things wrong before you would consider that maybe you aren't doing what you think you are?"

bets even further by simply providing an initial. Few get quite as ludicrous as one desperate medium who, on not being able to get his subject to recall any special name beginning with "M", finally blurted out, "Ah, it's M for Mother!"

And we actually help them, with our willingness to suspend disbelief and to provide information, often without realising it. Cunning mediums, particularly those on the professional circuit, know how to exploit this fact, weaving our words into their patter and feeding it back to us as if it was something they knew all along.

TV3 flew me up to a book launch for medium Jeanette Wilson; the reporter was very excited that this woman was the real deal because she could provide actual names. We went to the launch and later this investigative journalist gushed about how Wilson had told one audience member that his father was

called Frank. Fortunately, we'd caught that exchange on tape, so I got her to play it back. It went like this:

JW: Does the name Frank have any meaning for you?

Subject: My father was Frank.

JW: Yes, that's right. I understand.

You don't have to be foolish to be fooled. Those going to psychics or mediums are often desperate to believe, which makes them easy to exploit, but even those whose job depends on careful listening and recall can be easily mis-directed.

I've done this sort of thing myself, when asked to impersonate a psychic and demonstrate the tricks and techniques used by the trade.

So you should listen for obvious cueing and changes of tack, or those spurious affirmations when an error is noted which flips it around to sound as if they knew all along.

Another example from Kelvin Cruickshank, this time looking at Alicia's drawings. He spotted a depiction of her pet, something black and four-legged – her dog, he announced. Off-camera someone said "a cat". The film crew knew there was a cat in the O'Reilly household, as it had been part of the mother's story. "Oh cat is it?" said Cruickshank. "Oh it is too."

What is psychic about that?

It can be really handy if you can identify a clear factual statement that can be checked out. This is harder than it sounds,

as unequivocal statements are not part of the psychic stock in trade. It can also be difficult to check facts without having personal contacts or knowledge to draw upon. That said, there was something in the *Sensing Murder* programme about Alicia O'Reilly that could be checked.

Cruickshank made much of Alicia talking about children's television show *What Now?*, and how that must have been a Saturday morning treat for her, adding that this clearly indicated her murder took place in the 1980s. This was made more dramatic by a voiceover noting that Alicia had been murdered in 1980. However, according to TVNZ, *What Now?* didn't go on air until nine months after Alicia's murder...

Con artists and True Believers alike will provide some kind of ad hoc explanation to either deny or explain away such errors. I often ask people, "how many times would it take for you to get things wrong before you would consider that maybe you aren't doing what you think you are?" People with a vested interest in their own powers will very, very rarely face up to that.

Best yet, look for solid predictions, record them before the event and see how they stack up afterwards.

The most entertaining and regular examples of these are the tabloid predictions made at the beginning of every year. There are two things these regular features have in common:

1. a large proportion of predictions are wrong, even when plausible instead of downright silly;

2. they consistently miss the truly surprising, truly huge news events of the year.

Skeptics around the world track these and see how the "psychics to the stars" do, people who are touted as the best in the business. Back in 2004 the more plausible predictions involved the deaths of Osama bin Laden, Saddam Hussein and Fidel Castro. All wrong. As were the really off-the-wall predictions of the discovery of live dinosaurs, and US General Colin Powell switching political parties to trounce George Bush and become a Democrat president.

What did the psychics miss that year? Just the massive Boxing Day tsunami that saw 214,000 people die across 11 countries. Surely it shouldn't have been too difficult for just one of them to feel that sort of death and destruction reverberate through the cosmic ether?

However, of greater concern are those predictions which have a real personal impact on us and affect our behaviour and the behaviour of those around us.

Every year we get the prediction of San Francisco falling into the sea. It's not there yet. But every year it comes back, along with other end-of-the-world scenarios, cometary impacts, giant bat attacks, the rising of Atlantis. They are invariably wrong.

I've lived through too many end-of-the-world predictions from Y2K to the Rapture to worry too much about them any more. What I do worry about is the very real psychological harm that inevitably accompanies such

predictions, particularly when they are reported by an uncritical, uninformed media. Facts may whisper, but fear screams.

I worry about groups like the ominously named Ukrainian White Brotherhood who caused riots and bloodshed in their shaky nation in preparation for their earthquake apocalypse predicted in 2001.

I was worried about having a Minister of Civil Defence who believed that the end times were coming so there was no point preparing for natural disasters and emergencies when God had ordained it and the Bible had confirmed it. Yes, that was a New Zealand Cabinet Minister.

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

I worry about the Cantabrians who ended up with unnecessary psychological stress heaped on an already deservedly anxious frame of mind because they believed in Ken Ring's pronouncements regarding a massive earthquake happening on March 20 roundabout lunchtime. Some 50,000 people believed enough to flee the city that weekend and, despite the huge aftershock's non-arrival, many still choose to believe in a former maths teacher-cum-magician than in real geologists.

Of course, it can be hard to be a judge when you are liable to only

get part of the story. Particularly if the person at the centre of it controls the information.

Psychics will often talk about assisting police with missing persons' cases. What they don't tell you is that there has been not one substantive case where psychically derived information has been of any significant use. That their 'assistance' often comes down to making a phone call, or that they talked to a search and rescue person about their dream.

Deb Webber claimed to have seen Aisling Symes in a ditch. As one policeman put it, "If she's said there's a body in a ditch in West Auckland, there are plenty of ditches and we can't do much with that information." And if police had actually limited their search only to ditches, as defined by almost every normal person and dictionary, then Aisling's body would never have been found. That's how truly useless her comment was. Yet there are people prepared to go on her three-year waiting list to pay her \$250 for a half-hour reading. And who are willing to ignore the loud quacking that resulted when she was shown on camera talking to three non-existent dead people when an Australian television crew put her to the test.

People in this industry often claim to be doing it to give families closure, that they are just trying to help. They ignore or dismiss the harm and pain that they often cause. **whatstheharm.net** lists hundreds and hundreds of cases where families, parents, spouses, friends have all suffered unnecessarily through psychics and mediums exploiting their

awful situations for money, marketing exposure and outright ego-boosting.

It's rare for such families to speak out against this. Sometimes they have family members who want to believe. Sometimes they are desperate for any kind of help or assistance. Sometimes they think the extra publicity might turn up real information. Sometimes they have paid over so much money they don't dare believe that it might all be for naught. Sometimes they are just too polite to call a duck a duck.

Here's a heartfelt comment from one chap who had worked knowingly fraudulently as a fake medium, and who came to realise the damage that he had been doing:

"While aware of the fact that I was deceiving [my clients] I did not see or understand the seriousness of trifling with such sacred sentimentality and the baneful result which inevitably followed. To me it was a lark. I was a mystifier and as such my ambition was being gratified and my love for a mild sensation satisfied. After delving deep I realized the seriousness of it all... [W]hen I personally became afflicted with similar grief I was chagrined that I should ever have been guilty of such frivolity and for the first time realized that it bordered on crime."

That was a very chastened and very honest Harry Houdini.

And, sadly, our ill-trained, inexperienced and under-resourced news media often doesn't help us to assess the claims that are out there. Ken Ring was described in a number of publications as a lunar scientist, which sounds reasonably scientific

and gave him a spurious credibility. What you weren't told was that he believes dolphins are beaming sonar signals to the Moon, and supports the idea that Indo/Egypto/European cultures were present in New Zealand thousands of years ago. Surely that says something about his credibility...

We get psychics who confidently state that missing people will be found near trees or water. Frankly it would be difficult to get away from one or the other in New Zealand. So that's not much help either. And for all those pseudo-documentaries masquerading as reality TV, there have been no cases solved by mediums or their psychic brethren except in their own publicity material.

I have often been asked why the New Zealand Skeptics gives such people the oxygen of publicity. Why do we try to take a public stand against both the well-meaning if misguided individual and the charlatans and fraudsters alike? Why do we bother to point out when claimed scientific evidence is not actually scientific; why do we go behind the scenes to reveal the dodgy dealings of the professional medium; why do we try to make people aware of their own fallibility and vulnerabilities?

To paraphrase a famous quote that we all should bear in mind: For a dangerous idiocy to succeed requires only that good people say nothing.

Vicki Hyde is media spokesperson for the NZ Skeptics.

NZ Skeptics Conference 2011
Friday 26 – Sunday 28 August
Rochester - Rutherford Hall, 77 Ilam Rd, Christchurch

Online reservations: <http://skeptics.org.nz>

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Special dietary requirements: _____

Registration:	No:	Total:
Fri, Sat, Sun – All sessions, morning & afternoon teas and Lunch (Sat). Does not include dinner	Waged: \$90 x ____ = ____	
	Unwaged: \$75 x ____ = ____	
Dinner (Saturday night)	\$30 x ____ = ____	
On-site accommodation per person per night (Friday and/or Saturday). Rooms are single – if there are two of you, you need to book two rooms. (Includes full continental breakfast)	\$70 x ____ = ____	
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Payment:

Cheques:

Payable to – NZ Skeptics Conference
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Enquiries/special requirements etc: conference@skeptics.org.nz

Booking deadline for dinner and accommodation: August 8.

This page deliberately left blank so you can send
off your conference registration RIGHT AWAY!

Homeopathic ‘vaccines’ on sale in New Zealand

THE website www.endohealth.co.nz is selling such items as homeopathic immunisation and “travel kits”. On offer are such remedies as “Natrium Muriaticum 200C” which, it is claimed, will “protect against all types of Malaria” and “Haemophilus 200” for protection against “H I B” (this abbreviation is for *Haemophilus influenzae* type B which causes severe pneumonia and meningitis in infants).

The site’s owners say:

“Endo Health Limited provides accessible and experienced health care based on Homoeopathic principles as defined by Dr Samuel Hahnemann in the Sixth edition of The Organon of Medicine. We also manufacture and supply a full range of homoeopathic products, both classical and complexes, in a number of different presentations. We provide Homoeopathic prophylaxis for childhood diseases, and individualised kits for travel to areas where there is risk of exotic diseases, as well as kits to alleviate the medical dangers of travelling by aircraft. We provide information on vaccines used in the prevention of childhood diseases. Unless stated otherwise, all this information is sourced from Medical journals and has been available to all Medical Practitioners and Medical authorities.”

One of the homeopaths claims to have been a pharmacist for many years and to be “President of the Homoeopathic Association of New Zealand”, an

organisation which appears to be non-existent.

I’ve been aware for a while that some people have sourced and used these homoeopathic “immunisations”, so as an individual I’ve sent an email off to Medsafe’s Compliance Unit stating that I believe that these homoeopaths and their website’s sales could be harmful to people, and that the site would likely contravene the Medicines Act as they are making therapeutic claims (as per New Zealand Regulatory Guidelines for Medicines Edition 6.13, March 2011).

They also attempt to circumvent the section 34 provision which allows “natural therapists and others” to supply “after being requested by or on behalf of that person to use his own judgment as to the treatment required”. They do this by saying the Medicines Act requires that there “must be an exchange of information” and this “consultation” (really an order for the product) may be by email. This would also be likely to be actionable under advertising standards, as they have requirements under their therapeutic product and service codes regarding advertising and therapeutic claims.

Unfortunately I suspect even if this is found to be correct and some action is taken, this will be dealt with by the old slap with a wet bus ticket (probably a cease and desist letter asking for them to remove the claims as to thera-

peutic purpose and/or asking for the withdrawal of the products), if any of the other examples I’ve seen over the years (eg adulterated supplements) are any guide. I’m not aware of anything happening other than withdrawal of the unsafe product after Medsafe has done testing, even though the product(s) may have been supplied and sold for quite a period of time and would pose a risk to the consumer.

That being said, it may help if other individuals or the society consider taking some action, as well such as contacting relevant agencies to express concern or even sending out a press release addressing the anti-vaccine stance of those in the alt med industry. The consumer is being exploited by sale of homoeopathic “vaccines” and “homoeoprophylaxis” products that claim to prevent diseases such as malaria, typhoid and cholera. Consumers could become seriously ill if they come into contact with these diseases and haven’t used proven interventions.

This could be another opportunity to call on homeopaths to do the right thing and come out in support of conventional vaccines and against the practice of homoeopathic “vaccination”. As the Ministry of Health says, “There is no evidence that homoeopathic ‘immunisation’ provides any protection against infectious diseases. The UK Faculty of Homoeopathy supports conventional immunisation.”

Michelle Coffey
Wellington

‘Darwin’s Dilemma’: ID in NZ

Alison Campbell looks at a new ‘resource’ for New Zealand schools, helpfully provided by the creationist movement.



A LITTLE while ago Ken Perrott, who writes the Open Parachute blog, alerted me to an Intelligent Design website that appeared to be set up to provide ID ‘resources’ to teachers and others who might be interested. Today I found time to wander over and have a look at what was on offer (not much, at the moment). The site’s owner is “idfilms”, who tells us that:

idfilms was established with the express purpose of reinvigorating and expanding the ID discussion in New Zealand and Australia. The people behind idfilms are committed to the search for truth about the origin of life and the universe, just like you.

The only resource currently on offer on the Products Page is a DVD entitled *Darwin’s Dilemma*, for which the blurb reads:

Darwin’s Dilemma explores one of the great mysteries in the history of life: The geologically-sudden appearance of dozens of major complex animal types in the fossil record without any trace of the gradual transitional steps Charles Darwin had predicted. Frequently described as “the Cambrian Explosion,” the development of these new animal types required a massive increase in genetic information. “The big question that the Cambrian Explosion poses is where does all that new information come from?” says Dr. Stephen Meyer, a featured expert in the documentary.

Interesting, given the subject matter, that one of the DVD’s “featured experts” is neither a geneticist nor an evolutionary biologist...

“Darwin’s Dilemma” isn’t a particularly accurate characterisation, given that discovery of the extensive Cambrian biota happened well after Darwin’s death. Nor is the idea of an “explosion” all that accurate, as the evidence from palaeontology and molecular biology points to a rather more ancient origin for the various phyla found in Cambrian rocks.

The statement that “the development of these new animal types required a massive increase in genetic information” suggests a lack of understanding

of a particular suite of genes, the Hox genes. Major changes in morphology can come about as a result of small changes in the Hox genes, because they influence the arrangement and timing of development of various body parts. No need for “massive increases in genetic information” here. However, that phrase is simply setting the stage for the claim that this increase in “information” can only have come about through the agency of a designer, again ignoring the observed ability of mutations – such as the duplication of genes due to transposon activity – to do this all by themselves.

However, if we must look at “complex specified information” (the catchphrase of Meyer’s colleague William Dembski for the way to recognise the work of the designer), let’s ask a few questions about it. What exactly is complex specified information? How is it produced? How do we tell it apart from the bits of the genome that aren’t due to an external agency?

Well, the short answer would appear to be that even the ‘experts’ don’t know. How else are we to interpret the discussion associated with *On the calculation of CSI*, a post at Uncommon Descent? A concept that cannot be adequately explained can hardly

form the basis of a sound teaching resource, let alone provide the impetus to change our view of how evolution works.

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 scien-

tific papers that are relevant to the Level 3 curriculum and Scholarship, and fielding questions from readers.

administrative

Proposed constitutional changes for NZ Skeptics

The following changes to the constitution of the NZ Skeptics have been proposed and will be considered at the Annual General Meeting in Christchurch on Sunday, 28 August 2011. This notice is published in accordance with the society's rules which require 21 days' written notice of any such change.

Motion 1

That clause 11(a) be rewritten to reflect the current financial year used by the society.

Current:

(a) The financial year of the Society shall commence on the first day of April and terminate on the last day of March next following.

Proposed:

(a) The financial year of the Society shall commence on the first day of January and terminate on the last day of December next following.

Proposed by: Michelle Coffey

Motion 2

That clauses 11(b), (c) and (d) be rewritten to change from there being a requirement for an annual auditor's report, to giving the committee responsibility for reviewing financial statements, and asking for them to be audited if it sees fit.

Current:

(b) The Treasurer shall prepare a Statement of Accounts and Balance Sheet as soon as possible

after the end of each financial year and such statement and Balance Sheet shall after consideration by the Committee be submitted to the Auditor who shall report thereon in writing.

(c) The Statement of Accounts and Balance Sheet together with the Auditor's report thereon shall be submitted to the Annual General Meeting next following its preparation and shall be open for discussion thereat. The audited Statement and Balance together with the Chairperson's report on the year's activities shall be sent to members with the notice of Annual General Meeting.

(d) An Auditor shall be appointed by each Annual General Meeting or if not so appointed then by the Committee and shall hold office until the termination of the Annual General Meeting next following his or her appointment. The remuneration of the auditor may be fixed by the Committee.

Proposed:

(b) The Treasurer shall prepare a Statement of Accounts and Balance Sheet as soon as possible after the end of each financial year and such statement and Balance Sheet shall be considered

by the Committee. The Statement of Accounts and Balance Sheet may be approved by the Committee or may from time to time as determined by the Committee be subject to submission to the Auditor who shall report thereon in writing.

(c) The Statement of Accounts and Balance Sheet shall be submitted to the Annual General Meeting next following its preparation and shall be open for discussion thereat. The Statement and Balance together with the Chairperson's report on the year's activities shall be supplied to members at the Annual General Meeting, along with any Auditor's report that may be prepared on request of the Committee.

(d) The Auditor shall be appointed at the Annual General Meeting or if not so appointed then by the Committee from time to time as deemed necessary and shall hold office until the termination of the Annual General Meeting next following his or her appointment. The remuneration of the auditor may be fixed by the Committee.

Proposed by: Michelle Coffey

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NZ Skeptics Conference: Coming soon!

26-28 August

Rochester-Rutherford Hall, 77 Ilam Rd, Christchurch

Registrations now open

The venue is confirmed as good to go, the speakers are lining up, we'll be ready for the 2011 Skeptics Annual Conference in Christchurch. Come and support the liquefacted garden city!

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Video Librarian: Alastair Brickell www.skeptics.org.nz/SK:MEMBERSVIDEO