Skeptic
a person in a state of terminal caution
Margaret Mahy

Teaching science with pseudoscience

***Sensing Murder* put to the test**

Night terrors

Coconut oil for Alzheimer's?

Amber teething beads revisited

new zealand Skeptic

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content

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editorial

The murder that never was – Part 2

GEORGE Gwaze was first cleared of the murder of his adopted daughter Charlene Makaza on 21 May 2008. At the time I wrote in *NZ Skeptic 88*'s *Newsfront* that it had taken since the first week of 2007 for him to be acquitted of a non-existent crime: Charlene had died from a massive Aids-related infection. Little did I realise the Crown would retry the case – the only time a Not Guilty verdict has been overturned in a New Zealand court – and Gwaze would have to face another four years to clear his name.

It may seem a strange case to attract the interest of the NZ Skeptics, apart from the fact that one of our members, Dr Felicity Goodyear-Smith, acted as a medical adviser for the defence in the first trial, but it could be seen as a late manifestation of the sexual abuse panic which swept the western world in the 1980s and 1990s. This had its origins in a book titled *Michelle Remembers*, which recounted memories of satanic ritual abuse recovered under hypnosis from a young woman, Michelle Smith, by her therapist (later husband) Lawrence Pazder. Though skeptics at the time were quick to note that these 'recovered memories' had similarities with those reported by Budd Hopkins, who used hypnosis to uncover 'memories' of alien abduction, or various proponents of reincarnation who used similar techniques, there was a rash of satanic ritual abuse cases arising out of hypnotherapy sessions over the next few years.

In time, the satanic element faded, but the panic only became the more destructive because of that, with many people 'recovering' memories of more mundane forms of sexual abuse, often by their parents. Families were torn apart; the damage continues to this day. In a parallel development, testimony of sexual abuse (often ritual in nature) was elicited from pre-school children at day-care centres and kindergartens by suspect interviewing techniques.

In most of the world the day-care sexual abuse panic has been recognised for what it was, and those who fell victim to it have mostly received large compensation packages. Not so in New Zealand, where Peter Ellis is still on record as a convicted child abuser, after spending seven years in prison for alleged offences at the Civic Creche in Christchurch – the same city where the Gwaze family lives. Sexual abuse of children is a terrible crime and, perhaps understandably, when the prospect is raised rationality tends to fly out the window; other scenarios often don't get a look in. The George Gwaze case – and the ongoing injustice suffered by Peter Ellis – shows that even (or perhaps especially) on this most emotional of issues, it's necessary to keep a cool head, and to consider all possibilities.

David

Using pseudoscience to teach science

Alison Campbell

There may indeed be a place for creationism in the science classroom, but not the way the creationists want. This article is based on a presentation to the 2011 NZ Skeptics Conference.

WE LIVE in a time when science features large in our lives, probably more so than ever before. It's important that people have at least some understanding of how science works, not least so that they can make informed decisions when aspects of science impinge on them. Yet this is also a time when pseudoscience seem to be on the increase. Some would argue that we simply ignore it. I suggest that we put it to good use and use pseudoscience to help teach about the nature of science – something that Jane Young has done in her excellent book *The Uncertainty of it All: Understanding the Nature of Science*.

The New Zealand Curriculum (MoE, 2007) makes it clear that there's more to studying science than simply accumulating facts:

> Science is a way of investigating, understanding, and explaining our natural, physical world and the wider universe. It involves generating and testing ideas, gathering evidence – including by making observations, carrying out investigations and modeling, and communicating and debating with others – in order to develop scientific knowledge, understanding and explanations (*ibid*., p28).

In other words, studying science also involves learning about the *nature* of science: that it's a *process* as much as, or more than, a set of facts. Pseudoscience offers a lens through which to approach this.

Thus, students should be being encouraged to think about how valid, and how reliable, particular statements may be. They should learn about the process of peer review: whether a particular claim has been presented for peer review; who reviewed it; where it was published. There's a big difference between information that's been tested and reviewed, and information (or misinformation) that simply represents a particular point of view and is promoted via the popular press. Think 'cold fusion', the claim that nuclear fusion could be achieved in the lab at room temperatures. It was trumpeted to the world by press release, but subsequently debunked as other researchers tried, and failed, to duplicate its findings. A related concept here is that there's a hierarchy of journals, with publications like *Science* at the top and *Medical Hypotheses* at the other end of the spectrum. Papers submitted to *Science* are subject to stringent peer review processes – and many don't make the grade – while *Medical Hypotheses* seems to accept submissions uncritically, with minimal review, for example a paper suggesting that drinking cows' milk would raise odds of breast cancer due to hormone levels in milk – despite the fact that the actual data on hormone titres didn't support this.

This should help our students develop the sort of critical thinking skills that they need to make sense of the cornucopia of information that is the internet. Viewing a particular site, they should be able to ask – and answer! – questions about the source of the information they're finding, whether or not it's been subject to peer review (you could argue that the internet is an excellent 'venue' for peer review but all too often it's simply self-referential), how it fits into our existing scientific knowledge,

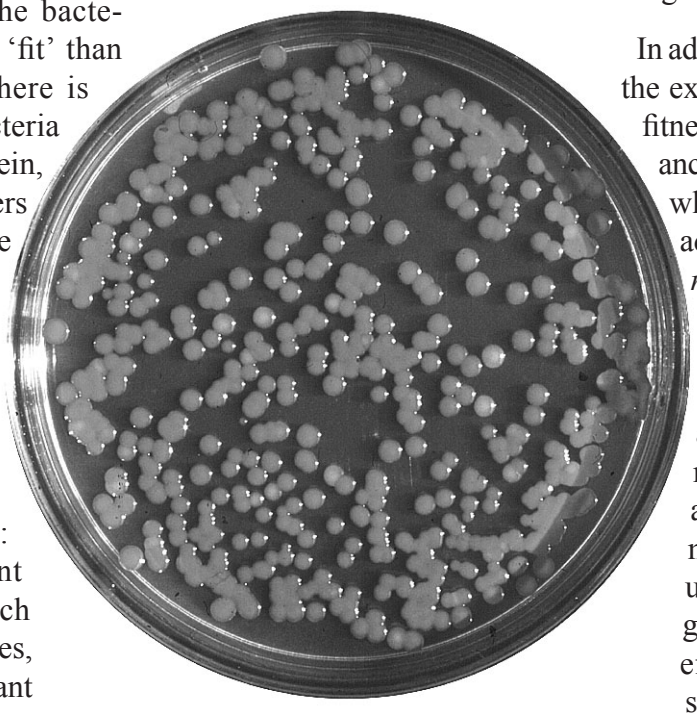
and whether we need to know anything else about the data or its source.

An excellent example that could lead to discussion around both evolution and experimental design, in addition to the nature of science, is the on-line article *Darwin at the drugstore: testing the biological fitness of antibiotic-resistant bacteria* (Gillen & Anderson, 2008). The researchers wished to test the concept that a mutation conferring antibiotic resistance rendered the bacteria possessing it less 'fit' than those lacking it. (There is an energy cost to bacteria in producing any protein, but whether this renders them less fit – in the Darwinian sense – is entirely dependent on context.)

The researchers used two populations of the bacterium *Serratia marcescens*: an ampicillin-resistant lab-grown strain, which produces white colonies, and a pink, non-resistant ('wild-type') population obtained from pond water. 'Fitness' was defined as "growth rate and colony 'robustness' in minimal media". After 12 hours' incubation the two populations showed no difference in growth on normal lab media (though there were differences between four and six hours), but the wild-type strain did better on minimal media. It is hard to judge whether the difference was of any statistical significance as the paper's graphs lack error bars and there are no tables showing the results of statistical comparisons – nonetheless, the authors describe the differences in growth as 'significant'.

Their conclusion? Antibiotic resistance did not enhance the fitness of *Serratia marcescens*:

> ... wild-type [*S.marcescens*] has a significant fitness advantage over the mutant strains due to its growth rate and colony size. Therefore, it can be argued that ampicillin resistance mutations reduce the growth rate and therefore the general biological fitness of *S.marcescens*. This study concurs with Anderson (2005) that while mutations providing antibiotic resistance may be beneficial in certain, specific, environments, they often come at the expense of pre-existing function, and thus do not provide a mechanism for macroevolution (Gillen & Anderson, 2008).



***Serratia marcescens* is a common bacterium of damp environments, responsible for the pink growths sometimes seen in bathrooms. Antibiotic-resistant strains in hospitals have been implicated in several human ailments.**

Let's take the opportunity to apply some critical thinking to this paper. Students will all be familiar with the concept of a fair test, so they'll probably recognise fairly quickly that such a test was not performed in this case: the researchers were not comparing apples with apples. When one strain of the test organism is lab-bred and not only antibiotic-resistant but forms different-coloured colonies from the pond-dwelling wild-type, there are a lot of different variables in play, not just the one whose effects are supposedly being examined.

In addition, and more tellingly, the experiment did not test the fitness of the antibiotic-resistance gene in the environment where it might convey an advantage. The two *Serratia marcescens* strains were not grown in media containing ampicillin! Evolutionary biology actually predicts that the resistant strain would be at a disadvantage in minimal media, because it's using energy to express a gene that provides no benefit in that environment, so will likely be short of energy for other cellular processes. (And, as I commented earlier, the data do not show any significant differences between the two bacterial strains.)

What about the authors' affiliations, and where was the paper published? Both authors work at Liberty University, a private faith-based institution with strong creationist leanings. And the article is an on-line publication in the 'Answers in Depth' section of the website of Answers in Genesis (a young-earth creationist organisation) – not in

a mainstream peer-reviewed science journal. This does suggest that *a priori* assumptions may have coloured the experimental design.

Other clues

It may also help for students to learn about other ways to recognise 'bogus' science, something I've blogged about previously (see *Bioblog – seven signs of bogus science*). One clue is where information is presented via the popular media (where 'popular media' includes websites), rather than offered up for peer review, and students should be asking, why is this happening?

The presence of conspiracy theories is another warning sign. Were the twin towers brought down by terrorists, or by the US government itself? Is the US government deliberately suppressing knowledge of a cure for cancer? Is vaccination really for the good of our health or the result of a conspiracy between government and 'big pharma' to make us all sick so that pharmaceutical companies can make more money selling products to help us get better?

> "My final conclusion after 40 years or more in this business is that the unofficial policy of the World Health Organisation and the unofficial policy of Save the Children's Fund and almost all those organisations is one of murder and genocide. They want to make it appear as if they are saving these kids, but in actual fact they don't." (Dr A. Kalokerinos, quoted on a range of anti-vaccination websites.)

Conspiracy theorists will often use the argument from authority, almost in the same breath. It's easy to pull together a list of names, with PhD or MD after them, to support an argument (eg palaeontologist Vera Scheiber on vaccines). Students could be given such a list and encouraged to ask, what is the field of expertise of these 'experts'? For example, a mailing to New Zealand schools by a group called "Scientists Anonymous" offered an article purporting to support 'intelligent design' rather than an evolutionary explanation for a feature of neuroanatomy, authored by a Dr Jerry Bergman. However, a quick search indicates that Dr Bergman has made no recent contributions to the scientific literature in this field, but has published a number of articles with a creationist slant, so he cannot really be regarded as an expert authority in this particular area. Similarly, it is well worth reviewing the credentials of many anti-vaccination 'experts' – the fact that someone has a PhD by itself is irrelevant; the *discipline* in which that degree was gained, is important. (Observant students may also wonder why the originators of the mailout feel it necessary to remain anonymous…)

There are not always two equal sides to every argument, notwithstanding the catch cry of "teach the controversy!"

Students also need to know the difference between anecdote and data. Humans are pattern-seeking animals and we do have a tendency to see non-existent correlations where in fact we are looking at coincidences. For example, a child may develop a fever a day after receiving a vaccination. But without knowing how many non-vaccinated children also developed a fever on that particular day, it's not actually possible to say that there's a causal link between the two.

A question of balance

Another important message for students is that there are *not* always two equal sides to every argument, notwithstanding the catch cry of "teach the controversy!" This is an area where the media, with their tendency to allot equal time to each side for the sake of 'fairness', are not helping. Balance is all very well, but not without due cause.

So, apply scientific thinking – say, to claims for the health benefits of sodium bicarbonate as a cure for that fungal-based cancer (**www.curenaturalicancro.com**). Its purveyors make quite specific claims concerning health and well-being – drinking sodium bicarbonate will cure cancer and other ailments by "alkalizing" your tissues, thus countering the effects of excess acidity! How would you test those claims of efficacy? What are the *mechanisms* by which drinking sodium bicarbonate (or for some reason lemon juice!) – or indeed any other alternative health product – is supposed to have its effects? (Claims that a 'remedy' works through mechanisms as yet unknown to science don't address this question, but in addition, they presuppose that it does actually work.) In the new Academic Standards there's a standard on homeostasis, so students could look at the mechanisms by which

the body maintains a steady state in regard to pH.

If students can learn to apply these tools to questions of science and pseudoscience, they'll be well equipped to find their way through the maze of conflicting information that the modern world presents, regardless of whether they go on to further study in the sciences.

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tv psychics

Sensing Murder: overtaken by events

David Riddell
Transcript by Annette Taylor

The discovery of a long-missing body offers a rare chance to put the psychic stars of Sensing Murder *to the test.*

ON SATURDAY 19 May 2012 the remains of Auckland teenager Jane Furlong were found in sand dunes at Port Waikato's Sunset Beach.

Jane was only 17 went she went missing while working as a prostitute on Karangahape Rd in central Auckland, on the night of 26 May 1993. While the discovery gives her friends and family a chance to say farewell, mystery still surrounds her disappearance, and her killer remains at large.

The Jane Furlong case was the subject of the sixth episode of the second season of the television programme *Sensing Murder*, which screened in New Zealand on 9 October 2007. On the programme, two 'psychics', Australian Deb Webber and New Zealander Kelvin Cruickshank, attempted to contact Jane's spirit and uncover fresh evidence about the case. They made specific and falsifiable claims about where the body was hidden; the discovery of Jane's remains provides a rare opportunity to assess the information this pair came up with.

The programme's narrator, New Zealand-born Australian actress Rebecca Gibney, tells us Webber and Cruickshank were both filmed non-stop for a day, kept separate and under constant supervision. The only information they were provided with was a photo of Jane, which both claimed they didn't look at until they had come up with (very accurate) physical descriptions, including age (though both picked her as 16), ethnicity, even hairstyle. Both picked that she worked as a prostitute and dressed accordingly, was academically bright but had trouble at school. Webber even got the name 'Jayne', after having the name handed to her on a piece of paper, face down – we are told that Jane changed the spelling in her teens. (One has to ask whether the name was written in Webber's presence: stage mentalists are able to interpret writing or drawing by watching the movements of the top of the pen, a technique known as pencil reading.)

Cruickshank gets that she had two siblings, that there was a Judy in the family (her mother's name was Judith), and that she had a 19-year-old boyfriend, correctly described by Webber as rough-looking with tattoos. Later, both lead the camera crew (independently on separate nights) to the precise point

on Karangahape Rd where Jane plied her trade.

On the face of it, this is amazing. If we have been given a fair representation of events there would seem little doubt that these two have genuine psychic ability. But there are other possibilities. One is that Webber and Cruickshank have been provided with all the information from the start. Another is that Webber and Cruickshank are filmed for a combined total of perhaps 16 hours, of which less than 30 minutes ends up on the screen, so there is plenty of opportunity for selective editing. Both are skilled cold readers (I have attended one of Cruickshank's mediumship shows and can attest to his ability), and we are told by Gibney that "only correct statements are confirmed during the readings". So they are given feedback on how they're doing, and over the course of the day's filming are able to home in on correct details.

But could they really be psychic? On the evidence from this early part of the show it's a possibility but we can't be sure, because all of this information could have been obtained by non-psychic means.

However Cruickshank and Webber go on to give details about where Jane's body was hidden. In 2007 nobody knew where that was, but now we do. So let's look at a transcription of the bits of the show relating to that and see how well they did. 'KC' is Kelvin Cruickshank, 'RG' is Rebecca Gibney, and 'DW' is Deb Webber. Quotes are complete; three dots denote a pause, not an ellipsis.

KC: Just wanted to say dump or dumped. How are you covered? She's saying to me I'm so covered up it's not funny. She says they did a jolly good job of covering me up. Lots of dirt, lots of puddles, lots of water, I can hear dripping, I can hear hammers, even jack hammers, the concrete … jrr jrr jrr jrr. You know the… the sound of building.

[*DW gives unverified details about the murderer.*]

KC: Church, cemetery, where you taking me girlfriend? I feel like she's hidden. She said, I just asked her were you moved from where you were killed? She shook her head … So … So the possibility at the time of her passing there may have been a building in dis… mount, which means being broken down and replaced 'cause things have changed since that sort of scenario … the surroundings have all changed and so I can't make out whether I'm in or out.

[*DW and KC say Jane is still missing.*]

RG: Both psychics have picked up that Jane's body is missing. Deb is given a map of Auckland and asked to identify areas that are significant to the case.

DW: She's saying to me you don't get much work out of the city. Where are you working? Yeah work? That's what I'm looking for.

RG: Deb is indicating the area where Jane worked.

DW: Do you go over a bridge or something to get to her? 'Cause she keeps taking me something over a bridge. Something's happening around in this area, I don't know what it is though.

RG: Deb is pointing at the Auckland Domain, a large park area near the central city.

Auckland Domain, where Deb Webber said Jane Furlong's body had been hidden...

... and Waikato Heads, where Jane's body was eventually found.

DW: Still again, it's like part of her doesn't want to be found.

KW: She's not outside of the city, she's inside the city, she's making reference to a park... She's giving me the images of the hospital and then the museum and then she brings me back over to the university. Little bit of a triangle.

RG: Kelvin is also given a map.

KC: There's the university, Domain, the hospital, where's that? Right here … so … if we put two and two together like, there's the triangle of the university like that, it sort of looks like this [*makes a triangle with hands over the map*].

RG: Significantly at the center of Kelvin's triangle lies the Auckland Domain. The same park area identified by Deb.

KW: Honestly, I'm going to say this to you again, 'cause she's talking about it being right underneath the noses of where she was last seen, it's not far from there. She keeps saying I was not removed from the city. So wherever that area is, we'd probably need to locate it. Have a scout around with it, try and work with her a little bit more.

[*DW and KC on separate evenings go to Jane's "patch" on Karangahape Rd.*]

DW: I think this is where she was last seen. And she keeps showing me the image of the car, coming in. It's taken off, it's turning around, and headed back down out that way.

RG: Deb is pointing in the direction of the Auckland Domain.

[*DW says Jane knew something was not right, KC continues to explore Karangahape Rd.*]

RG: Meanwhile Deb asks Jane's spirit to show her where she was killed. She directs the crew to drive over the Grafton Bridge.

DW: She was on this road. I keep asking her when did he get violent with you and she said he was creepy anyway, right from the beginning. But it's when they got down the road a bit, that's when he started.

RG: Kelvin has reached the old Symonds St cemetery.

KC: Why have you brought me here girl? Definitely been pulled here, I don't know why. I've brought these with me just in case, try and link in with her [*Holds up bracelets(?)*].

DW: Left.

RG: Deb heads into the Auckland Domain, the area both she and Kelvin identified on the map as being significant to the case.

DW: Oh, this is a bit … She's definitely been in here before. She's been in here. No, I think a few times but she's definitely been in here with him. It's really weird, I don't think she came out the other side of it.

RG: Just when it seems Deb is about to make a breakthrough, Jane closes down on her.

DW: Getting all that stuff I got at the beginning, about the anger and the bitterness. You know, no one really cares if she gets found or not, she feels. She's not connecting with her body, she doesn't care. Show me, go show me Jayne. It's like, the only thing I keep getting is that she's lost, so until her soul's ready to acknowledge it, it's lost. Shock does that to a soul. Well, I can certainly say this, it's not a very pleasant place to be at night, in here. Too much goes on in here.

RG: At the cemetery Jane is shutting down on Kelvin too.

KC: I'm getting close to a lot of people man, but this one I'm struggling with. She's very very hard to get that door open. She comes in, she gives me a little bit, and she disappears, she comes in and gives me a little bit more and disappears, and that's been paramount as you've been watching it all night. Didn't have much in life and everything I did have was taken from me. What does

NEARING ZERO by Nick Kim

it matter where I am. What does anyone care?

Next, we are introduced to Duncan Holland of Corporate Risks, an investigation and security consultancy, who is described as a former detective leading a team of investigators. He is solid-looking, authoritative, and speaks of the police and "we" in close conjunction. Many viewers would probably get the impression he is a policeman. Below are excerpts of his concluding commentary. Ellipses in this transcript indicate segments not relevant to the body's location, or where clips of DW and KC had been inserted for dramatic or illustrative purposes.

> Both psychics identified the Auckland Domain as being significant. ... To get to the Auckland Domain from K Road where Jane worked the car would have driven past the Symonds St cemetery and the Grafton Bridge. ... Psychic Deb Webber led the crew to the Auckland Domain, the same area she and Kelvin identified on the map. ... The Auckland Domain, which is less than five minutes drive from K Road has always been a popular spot for sex workers to take clients; it is also one of the most dangerous spots. Numerous rapes and attacks on prostitutes have taken place in the domain. The New Zealand Prostitutes collective warns sex workers not to travel too far out of the city with clients. ...
>
> It is quite likely Jane went with her killer to the Auckland Domain, she may have been murdered and possibly even buried there. ...
>
> If the psychics are correct and Jane's body was well covered, it is quite feasible that her body could be hidden in the domain and remain undetected for 14 years. The Auckland Domain covers 75 ha of land, some of it rough and inaccessible terrain and bush. In 1995 the body of murdered vagrant Betty Marusich was found in dense bush in the Auckland Domain; no attempt was made to cover or bury her yet it still took two weeks for her body to be found.

"She's not outside of the city, she's inside the city, she's making reference to a park..."

> Kelvin presented another interesting scenario. ... During our investigations we were approached by an anonymous source who told us that Jane's body had been buried in concrete. Police confirmed they had investigated this theory but were unable to find any evidence. New Zealand police deal in factual evidence but are open to all sources of information. The psychics have revealed potential lines of inquiry which we believe warrant further investigation in the hunt for Jane Furlong's body and her killer.

So there you have it. Both Webber and Cruickshank identify the same general area as the location of Jane's remains, but then Jane inconveniently (or perhaps not) shuts down on them. Note that Cruickshank actually gives two alternatives: the Symonds St cemetery and a construction site, location unspecified. Interestingly Holland says there had been a tip-off that Jane had been buried in concrete.

Cruickshank and Webber also had plenty to say about the killer, though as the crime remains unsolved it's impossible to assess this material. Much of it was contradictory, though the show glosses over this – Cruickshank indicated a motorcycle gang and "payback" being involved (Jane was due to testify in an assault case involving a gang), while Webber gave details about a balding businessman with an accent.

Was there collusion between Webber and Cruickshank for them both to pick locations that were so close together? Not necessarily. Both had somehow deduced she was a Karangahape Rd prostitute (most likely by cold reading their interviewers; we can now be fairly sure neither has any psychic ability), and the likeliest place for the body to be hidden would be the closest piece of rough ground – the Grafton Gully/Auckland Domain area.

In any case, Jane's remains were more than 80 km away, at Port Waikato. The pattern is clear: Webber and Cruickshank can come up with amazingly accurate information if that information is already known and if they are provided with feedback, although we have no way of knowing how many of their misses were edited from the many hours of filmed footage. But when new information that was not previously available comes to light, their pronouncements can be seen for the fantasies they are.

David Riddell and Annette Taylor are editor and former editor of the NZ Skeptic.

How to raise a psychic child

Compiled by David Riddell

ALL children are psychic, according to one of the stranger items to appear in the *NZ Herald* (30 May) for a while.

Sue Bishop is described by writer (I hesitate to say journalist) Nicky Park in the paper's *Life & Style* section as "one of Australia's top intuitives" – a phrase Bishop herself uses in her promotional material. She says children are tuned in to their abilities more than ever, but parents need to know how to nurture their kids' skills without discouraging or being too pushy.

Bishop, who is currently promoting her recent book *Psychic Kids*, says we're starting to see little kids who can see spirits, and actually validate who it is. "It's different to a child saying, 'I've got a monster on top of my bed' [*how, exactly?*]. We know that's imagination."

The "level of awareness" kids have today is different to the kids of the 80s, she says, partly because the topic is less taboo now so children are free to explore their psychic abilities. Then there's "soul evolution".

"I believe that each evolution carnates to bring a new gift, a new awareness to help us grow and expand also to deal with the problems created from the former generation."

But at the age of seven the soft part of the skull fully closes (this is in the *NZ Herald*, remember, so it must be true), and the age of reason begins.

"It's when children go through this phase that they start to fear death and fear separation from a parent ... they start to focus more on being logical and analytical. They start to doubt their intuition, they shut that part of themselves off."

But don't worry, the *Herald* has some useful tips to help you prevent your child from becoming logical and analytical. You must recognise you and your child have a sixth sense, and set safe boundaries for using these abilities. But don't indulge them too much: "Some kids will go too far and let their imagination take over."

'Medicine man' offside

A self-styled Woodville 'medicine man' has found himself offside – with the country's other medicine men (*Dominion Post*, 18 June).

Karys Woodcock, a 65-year-old part-time actor raised in England, says he is entitled to be a shaman because his father had Crow Indian heritage. He is legally changing his name to Laughing Bear, and says he has attracted a strong following for his 'medicine readings' and other services. He charges for those services, but according to Joseph O'Connor, 81, genuine shamans don't charge.

O'Connor says he is a third-generation psychic and shaman, while "Laughing Bear" is an actor living in a world of fantasy.

"Renting out rooms to unregistered psychics must be stamped out. There are so many so-called psychics robbing the public. He is doing a great injustice to the unsung heroes and healers that have made this country."

Woodcock charges $60 to $70 an hour for medicine card readings, as well as charging for teaching groups, and takes donations for ghost and spirit house cleansing. He admits there is a big argument about shamans receiving money. "People fall in love with understanding living holistically, but forget that in order for me to practise as a shaman, I have to get petrol, have a mortgage to pay.

"My tepee is bigger than what I used to have. I don't really want to go and live in the bush. People give us a gift of dollars instead of a leg of elk or deerskin. If [the] creator wants you to do something, you have to be alive to do it."

Animals vie for psychic fame

Remember Paul the psychic octopus? The late lamented mollusc who correctly picked the outcomes of all seven of Germany's matches plus the final in the 2010 Football World Cup now has plenty of competition (Stuff, 8 June).

None have the form of the eight-legged marvel, however, says Joe Crilly, a spokesman for British bookmaker William Hill. "And with so many to follow,

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ACCOMMODATION

This year's semester timing means we are not able to arrange hall accommodation for conference attendees. If members wish to stay at Cargills Hotel (678 George Street, 03 477-7983), cite the NZ Skeptics for a discount rate of $111pp. We recommend you contact them early.

There are a variety of providers around the university, ranging from hotels and motels to backpackers. Contacts for many of these can be found at:
www.otago.ac.nz/about/accommodation/otago000807.html
(note that Halls of Residence are unavailable).

Enquiries / special requirements etc: **conference@skeptics.org.nz**

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there are undoubtedly going to be a few who get it wrong."

Citta, a 33-year-old female Indian elephant at Krakow Zoo, was given the gig for the 2012 Euro Cup after correctly picking Chelsea would win the Champions League final, heading off a donkey, a parrot, and another elephant. But her first two predictions of Polish victories – made by choosing a marked melon – have been astray, with both matches drawn.

Meanwhile a "psychic pig" in the Ukraine predicted four of six results in the first round correctly. Other contenders are a ferret called Fred, Kharuk the Russian reindeer, Sissi the German dachshund, Nicholas the English llama and Huat the Singaporean arowana – that's a large freshwater fish. Information is limited on how well any of these are doing, which probably says something in itself.

Snake test of faith fatal

A West Virginia preacher who handled venomous snakes to prove his faith in God has died after being bitten (*NZ Herald*, 1 June).

Mark Wolford's own father died of a snakebite in 1983 aged 39, and he himself had been bitten before and survived. On this occasion witnesses say a timber rattler bit the 44-year-old on the thigh during a Sunday service at Panther State Forest.

Ralph Hood, a religion professor at the University of Tennessee at Chattanooga, said his friend Wolford would want people to remember him as "a Christian who was living his beliefs and being obedient."

"A common misunderstanding is that handlers believe they can't get bit or it won't kill them," Hood added. "What they'll tell you is, 'No one will get out of this alive.' They'll also tell you it's not a question of how you live; it's a question of how you die ... This is how he would have wanted to die."

Although most Appalachian states have outlawed snake handling, it remains legal but rare in West Virginia.

UFOs buzz Northland ... or not

Ufocus NZ are claiming many sightings of UFOs in the Northland region in recent months, but none has been reported to the police, a police spokeswoman says (*Northern Advocate*, 23 May).

Suzanne Hansen, who is research network director for the UFO-watching group, said one man had reported seeing a UFO land in Northland in April, but she was not revealing where at this stage. "He's a very credible source. He saw an object that had landed and said it was definitely not an aircraft or like anything else he had seen."

After a story on the sightings appeared in the *Northern Advocate* on May 19 several more reports of recent UFO sightings from the region had come in, while others had contacted the group to report historical sightings in Northland.

NZ Skeptics spokeswoman Vicki Hyde said there were a huge number of possible explanations for UFO sightings – and none of them involved visits from extraterrestrials.

Ghost haunts university

Residents at Otago University's Cumberland College have taken to sleeping with the lights on following a sighting of a ghost (*Otago Daily Times*, 22 May).

The ghost has been linked to the Grey Lady, who allegedly haunted a nurse at the college after the nurse, working at the now-closed Queen Mary maternity hospital nearby, took her baby for being an unfit mother.

College resident Mareck Church said the "ghost sighting" happened on the night of Saturday, 5 May, when two female health science students noticed a weird smell and a chill in the air as they walked down the hallway after coming back to the college from studying. Weird smells in a hall of residence? Cold in Dunedin? Definitely something odd here.

"One of the girls saw a black figure beside the fire hydrant, turned to the other girl to point it out and as they both turned round, they felt a cold whoosh of air pass them," Mr Church said.

Some students, Mr Church included, then played pranks on other residents, including going around the corridors with pillowcases over their heads.

The situation had calmed down since staff arranged a blessing by a chaplain and a kaumatua on May 10. Good to see our universities are bastions of rationality.

Things that visit by night

__Annette Taylor__ has personal experience of a phenomenon that lies behind many tales of ghosts, demonic possession, and alien abduction.

I WAS asleep. Marley, our cat, was faster asleep by my side.

Suddenly I was awake, at the sound of another cat's tread in the room. Then something jumped up and landed on the bed, and padded right up to me, wanting under the covers.

I lay absolutely, perfectly still. In fact, I couldn't move. The cat moved to the end of the bed and settled down.

The minutes ticked by, and I worried about an all-out cat fight flaring up. I wondered, for a second, if this could be Willow come a-visiting. The thing was, we'd buried her in the garden not two weeks before (I'm not going to reference Monty Python here), and I was fairly certain it wasn't poor old Willow, even while half asleep.

Then I came fully awake, groped in the dark for the cat I was convinced was lying there and found only Marley, snoring her head off.

It seemed so real, right down to the whiff of a slightly damp moggy and the pressure of her landing on the bed. A tad confused, I fell asleep. The next morning it had all the weight of a dream.

I was missing my cat and possibly, in a sense, she did come to say hello, but very much in a dream. My dad used to drop by at night after he died, too. We had good chats, but those were definitely dreams. I never thought for a moment he was a spirit hanging about.

This was different. At the time, I was certain there was a cat in the room, on my bed, and I couldn't move a muscle. In retrospect, I'm deeply disappointed the cat wasn't unspeakably evil, with glowing coal eyes, yellow fangs and claws of death; that would have ticked every box for being a classic case of sleep paralysis.

No better image conveys the terror this phenomenon can bring than The Nightmare, by Henry Fuseli.

The victim lies helpless on the darkened bed, and gleefully perched on her is the terrifying incubus, peering straight out of the picture. I'll have you too, it seems to gloat.

The Nightmare, by Henry Fuseli (1781).

The work, painted in 1781, is said to have influenced writers such as Mary Shelley and Edgar Allan Poe and it is still as full of menace today.

Hypnopompic dreaming – or more properly Isolated Sleep Paralysis – occurs mainly upon

awakening from sleep. It includes a range of visual and auditory experiences:

- a sense of evil in the room
- being paralysed or frozen
- shortness of breath or pressure, as if something or someone is sitting on you
- being touched

I had all but the first, and the additional olfactory bonus of the smell of damp moggy.

Most people report the experience as being intensely frightening and while mine wasn't scary, it was definitely disturbing.

Sleep paralysis, also known as night terrors, has been implicated in a lot of things of interest to skeptics, such as alien abductions. Carl Sagan, in The Demon-Haunted World, says it is telling that alien abductions occur mainly on falling asleep or when waking up. "Abduction therapists are puzzled when their patients describe crying out in terror while their spouses sleep leadenly beside them. But isn't this typical of dreams, our shouts for help unheard?" he writes.

Before we had visits from flying saucers, these vivid dreams were linked with the supernatural – witchcraft, demons, ghosties and things that go bump in the night.

The term hypnopompic comes from 19th century psychic researcher and poet Frederic Myers. He was a founding member of the Society for Psychical Research in 1883 and influenced Carl Jung, among others. He believed apparitions were not hallucinations, but really existed in the 'metetherial' dream-like world, which lies beyond everyday existence. It's a good word, even if these days most (rational) people consider such dreams to be normal phenomena, rather than supernatural.

I mentioned my dream to a friend, who made the comment it would be nice to think that the visitor really was my cat Willow. But no. To allow that comforting thought traction ushers in a flood of superstitions which I really have no time for. It was a genuinely interesting occurrence, in and of itself.

Sleep Paralysis is reported very frequently among people with sleep disorders, and otherwise occurs frequently in 6 percent of the population; and occasionally in 60 percent. When it occurs repeatedly it is categorised as Recurrent Sleep Paralysis. But I'm not going to be putting out a saucer of milk any time soon.

Annette Taylor is a former editor of the NZ Skeptic.

No missing content

RENEE Maunder (Forum, *NZ Skeptic 103*) laments that I failed to supply a detailed list of references in my article on ACC and sexual abuse claims (*NZ Skeptic 102*). In my copy, I saw the Health Practitioners Competency Assurance Act 2003, the Shorter Oxford English Dictionary, ACC legislation, public utterances by the NZ Association of Counsellors and similar organisations, ACC Press Releases, ACC's *Best Practice Guidelines*, the pseudo-research by Massey University (paid for by ACC) and the Crimes Act.

She mocks my comments about syndromes. My article defined a syndrome as *"a group of symptoms or pathology which consistently occur together, especially with an (originally) unknown cause."* A syndrome permits cause to be determined from symptoms or effects. It would be fair to say (for example) that medical practitioners might expect to find maybe four, six or a dozen symptoms that, through the medium of syndromes, lead to establishing the cause of a disease or disability. The keynote is predictability and certainty.

No-one has yet been able to formulate a "sexual abuse syndrome" because any effects which may occur are idiosyncratic and unpredictable.

These matters lie at the heart of the ACC Sensitive Claim process. Evidence of cause and effect is imperative. In the absence of evidence external to complainant allegations, the attribution of psychological conditions to sexual abuse is unscientific, unethical, and downright dangerous. But ACC and its counsellors make that attribution thousands of times each year.

Ms Maunder seems to think I suggested a "mental injury" should be a "syndrome" in order to be real. No I didn't. The "narrow definition of mental injury" used belongs to s.27 of the AC Act and is entirely subjective

- *"a clinically significant behavioural, cognitive, or psychological dysfunction"* can mean pretty much anything.

In terms of the ACC legislation, cover for "mental injury caused by certain criminal offences" requires credible, testable evidence of several aspects, but ACC and its counsellors fail to meet that criterion.

The three main aspects are :

1. Evidence that the alleged Schedule 3 criminal sexual offence actually did occur;
2. Evidence that a s.27 "mental injury" actually exists; and
3. Evidence that the alleged offence *caused* the mental injury – and that the injury was not due to some other trauma in the claimant's life.

Ms Maunder sees anomalies around my comments about "proper evidence". Pretty simple, really. Every such claim is an allegation of a serious crime. Unless ACC has credible evidence of the three aspects noted above, it has no business approving cover for claims.

Ms Maunder suggests my comments are "obviously absurd" unless I show that only ACC-registered counsellors can refer "patients" for claims. It is common knowledge that counselling is an unregulated activity. Anyone can do it. A person wanting to be registered on the ACC gravy train as a counsellor must jump through the hoops set up by the Counselling Costs Regulations.

Finally, she says "Mr Waugh refers twice to laws that are being broken, but never actually sets out which statutes these are." Concealing a crime is itself a crime. ACC's *Guidelines for Therapists Working with Adult Survivors of Sexual Abuse 2001* states: "*The therapist is asked to bear witness to a crime……"* In my opinion, witnesses to such crimes have an obligation to report them.

The Crimes Act 1961: Part 10: Crimes against rights of property: s.228(b) makes it an offence to dishonestly use a document for pecuniary gain. In the absence of credible evidence of criminal sexual offences and/or proof that claimed mental injuries were *caused* by such offences, it is dishonest to submit documentation for monetary compensation or other valuable considerations. ACC abets this deceit and is therefore also culpable.

The obvious starting point for these claims is clear evidence that the claimant did experience a criminal sexual offence. The almost foolproof way to do that is by a conviction or an admission of guilt. But in the ACC system, the alleged offender does not even have to be identified or advised of the allegations, and if he has been, he cannot defend himself. Shades of *The Trial* by Franz Kafka ?

Gordon Waugh (abridged)

Sodium toxicity?

Siouxsie Wiles in her article in the latest *NZ Skeptic* (103) claims that ingestion of 62 mg of sodium carries a "considerable risk of side effects including lethargy, weakness, irritability, seizures, coma and even death." I doubt it. The recommended daily intake of sodium is round about 2000 mg; a slice of commercially baked bread contains somewhat more than 62 mg sodium.

Alan Hart

Siouxsie Wiles replies:

Apologies, the reference to 62 mg of sodium per phenylbutyrate tablet was completely meaningless without referring to how many tablets are prescribed. While it is difficult to see what Burzynski actually prescribes in terms of sodium phenylbutyrate, the doses he describes for the antineoplastins (which remember are metabolites of sodium phenylbutyrate) vary hugely from less than 100 mg per kg body weight per day up to 25 g per kg body weight per day (**1.usa.gov/MRBEn7**) and he has stated on many occasions that high doses are needed to be effective.

To put that in perspective, if we took a person weighing 70 kg, the 100 mg dose would be about half the recommended daily sodium intake, while the 25 g dose could be as much as 100 times the recommended daily intake. As these doses will be on top of what people are getting in their diet, it is hard to see how patients aren't being put at risk of the side effects of sodium toxicity.

Morality or instinct?

Mark Ottley ("Scientifically determined morality", *NZ Skeptic 103*) makes a lot of fuss about something which is no more than the development of instinct. Societies evolve in the same way as individuals and

any behaviour which assists prosperity of the society or its survival will be selected by evolution and eventually incorporated in the genes of the individuals. This is called an instinct. Birds have an instinct to build nests. All organisms have an instinct to reproduce.

Morality is what people do. All societies attempt to discourage behaviour that harms the society and encourage behaviour that benefits it. Over time, all societies develop a basic approved morality which may be enforced by laws, education, or religion, and over the course of time some of it will be instinctive. Some will require education or training. It is not surprising that all successful societies have similar instincts of basic morality.

A tendency to cooperate, obedience to the laws, nurturing of children, concern for human life and for the family, have evolved in all successful societies.

A constant problem is genetic variability, where some individuals are less reliable.

Another is the clash with other instincts. The most basic instinct of all is selfishness. Without it none of us would be here at all. So all societies have to try and control it, or devise safe procedures to permit its indulgence.

There is also the instinct to kill others, animals or humans. Without it we could never have fed ourselves or fend off enemies. So we promote 'sports' which safely indulge the killer instinct. although we have not given up killing approved enemies.

There are degrees of adherence to officially or legally encouraged morality and Mark Ottley has surveyed some of those that are promoted. Without some diversity, no society would be able to make the changes that are going to be needed for future survival.

Vincent Gray
Wellington

Mark Ottley replies:

Thank you to Dr Gray for taking the time to provide feedback. I am especially grateful that he largely interpreted my article as I intended it to be interpreted.

Dr Gray outlines a descriptive evolutionary account of morality popularised since at least the 1970s. Ideally aspects could be clarified further by recent research and important ultimate/proximate distinctions. As one example, human 'genetic selfishness' typically develops into a stronger basic instinct for altruism than for selfishness – given that the 'self' is always a dead end but kin are not (Kenrick, Griskevicius, Neuberg, & Schaller 2010). However, to describe such considerations in detail was not my main objective.

Instead, my article "makes a lot of fuss" (definitely!) about two main points, both of which I regard as relatively novel and important and thus worth sharing with fellow skeptics. The first is that research from a range of fields (biological, psycholexical, cross-cultural, psychiatric and so on) has resulted in an unsought empirical convergence over the past decade, suggesting a six factor model of personality and morality. Six factors, not more and not less. The utility of a scientific model includes clarity of concept, parsimony, consilience, predictive accuracy and so on, and this model appears to possess such qualities given my reading and clinical practice to date.

The second point is that we have advanced to a point where evidence-based morality is feasible not just in theory, but in practice. Cultural practices either enhance or detract from human wellbeing. These variables of cultural practice and wellbeing are increasingly well understood, measurable and controllable. Positive implementation requires effective dissemination, hence further fuss over the descriptive and prescriptive symbolism I.T.E.A.C.H. in my article.

Dr Gray is absolutely correct that we must retain some diversity to make moral progress, and I highlighted the importance of "evolutionary processes of cultural variation, selection and retention" in my article. What we have in the way of evidence-based morality is a beginning not an end. However, it is an important beginning to acknowledge and advocate for in a world where most advocate non-evidence-based moral models (often from a superstitious and religious point of view), or deny the possibility altogether (often from a philosophical or scientism point of view).

Could coconut oil be an option for treating Alzheimer's?

Siouxsie Wiles

A new alternative treatment for Alzheimer's doing the rounds seems to be based on a misunderstanding of the underlying science.

THE title of this piece is a question posed by the 'health correspondent'* in one of our local rags. It was inspired by a video doing the rounds on the internet of an American doctor who is using coconut oil to treat her husband's Alzheimer's. The doctor's name is Mary Newport and she also has a book out: *Alzheimer's Disease: What If There Was a Cure? The Story of Ketones*.

So what are ketones and could coconut oil be the new wonder cure for Alzheimer's? Normally carbohydrates in the diet are converted into glucose which is then used by the body as fuel. However, when facing starvation, the body can burn fats in place of carbohydrates. The liver converts the fats into ketones which can be used in place of glucose. Where it gets interesting is that a particular high-fat diet is being used to successfully treat another brain disease – epilepsy. The ketogenic diet is a strictly controlled, high-fat, adequate protein, low-carbohydrate diet, which has been shown in numerous peer-reviewed scientific studies to be effective for controlling seizures in the group of children that don't respond to medical treatment (so-called drug resistant epilepsy). Unfortunately studies have shown that it is less effective in adults.

So the ketogenic diet is more than just supplementing the diet with coconut oil. And it isn't without side effects either, which can include weight loss, kidney stones, and constipation. While these are not insurmountable, the diet can be fatal for people with genetic disorders of fat metabolism. People like these will not be able to use the fats provided in the diet and if insufficient protein and carbohydrate are given, they will start breaking down their own protein stores for fuel, which can lead to coma and death.

So what about ketones and Alzheimer's? Well it turns out that there are a number of studies looking at raising ketone levels in people with mild to moderate late onset Alzheimer's. And it looks like they are doing it without the strict ketogenic diet. In a randomised, double-blind, placebo-controlled, multicentre trial[1], subjects were given a daily drink of a ketogenic compound called AC-1202 on top of their normal diets (and prescribed Alzheimer's medication), and assessed for changes in cognitive performance.

But there was also a little twist to this story. One of the major risk factors for late onset Alzheimer's is possession of one or more copies of the epsilon 4 variant of the apolipoprotein E gene (APOE4). The more copies of APOE4 you have, the higher your risk of developing the disease. So did AC-1202 improve cognitive performance? Yes, but only for people who didn't carry any copies of APOE4. What this means is that your genes affect whether or not you respond to

***A vitamin and supplement peddler so I am always a little sceptical of his claims!**

ketones. Interestingly, about 10 percent of subjects got a little better without any treatment too.

So what is AC-1202? It is NeoBee 895®, a common food ingredient made using glycerin from vegetable oil and fatty acids from, you guessed it… coconut oil! Although palm kernel oil is also often used. But before you race off to check your APOE4-type and stock up on coconut oil, let's return to Mary Newport and her husband for a moment. Mary blogs[2] about their life with Alzheimer's, and despite being on coconut oil since 2008, all is not rosy. So if you started this article thinking that adding a little coconut oil to your diet would be the answer, I'm sorry to disappoint you. As Ben Goldacre would say, I think you'll find it's a little more complicated than that!

1. Henderson ST, Poirier J (2011). BMC Medical Genetics. 12:137. .
2. **coconutketones.blogspot.co.nz**

Siouxsie Wiles is a microbiologist and bioluminescence enthusiast who heads the Bioluminescent Superbugs Group at the University of Auckland.

Amber teething beads revisited

Darcy Cowan *takes another look at a subject that just won't go away.*

THE page views for my amber teething necklace post (printed in *NZ Skeptic 100*) are about to pass the 20,000 mark. Interest in the article has just kept increasing over the last year or so, as opposed to the majority of my posts which slip into internet obscurity within days. In anticipation of the occasion I thought I'd cover some of the comments that this post has gathered over the last few months.

Many of the comments are along the lines of "It worked for me", and "Try it yourself".

To the first, a bunch of individuals making claims of efficacy without adequate control for bias, natural history and various other contingencies is not a compelling argument to me. Plenty of others swear by practices based on personal experience that have no hope of working; why should this one get more credibility?

As to the second, three words for you: Anecdote, and Confirmation Bias. I know enough to realise that I am not immune to the wiles of confirmation bias, which would make any personal trial I made just another anecdote – something I don't accept from others, so what would make my own experience any more valid? I realise that for most people this sort of reasoning is at best foreign and at worst incomprehensible. The general thinking appears to be: "If I try something and it seems to work, then it works – QED".

No.

Related to this point are appeals to the placebo effect, the idea being that simply trying something helps, somehow. This may be true. But the placebo effect seems now to be the 'go-to' explanation for all things unexplained. It started off being understood as simply the improvement seen in the control group for clinical studies. Therefore by definition the placebo response was what happened when people weren't treated. It was the catch-all for everything that could affect the outcome that wasn't due to the treatment itself: poor method design, confirmation bias, reporting bias, observer effect on the patients, regression to the mean, natural history of the disease, etc, etc.

More recently there has been some work to see if there is a real change due to people thinking they are getting an active treatment, the so-called 'placebo response/effect'. Results have been mixed. It is true that people will report less pain and their brains will show less activation in pain-related areas. But people are susceptible to what they are told. If you tell people a cheap wine is expensive they will enjoy it more. Is there a placebo wine effect? Possibly, but the wine didn't change and neither

did any underlying physiology in relation to placebo medical treatments.

In fact recent studies of asthma showed that while people reported feeling better while taking a placebo, their ability to perform on objective measures remained the same, while those on active medications improved. If you feel better while still having a life-threatening condition are you better? I don't think so.

So in appealing to the placebo effect you have to concede that:

1. the amber beads don't have any active ingredient, and

2. don't make any difference to the underlying condition.

ie, they do nothing.

Now notice in my original piece this is not what I said. I merely pointed out there is no good reason to think they are doing anything, not that they definitely aren't – a subtle distinction I admit.

In essence the argument is: "If you think it works then it does". I would counter by asking why not use something that we know works, and then you can capitalise on both effects: you will think it works and it will actually work too. Double goodness.

One poster asserted that amber necklaces were registered with the Therapeutic Goods Administration in Australia as a Medical Device, so this must mean they have therapeutic properties.

This one was my favourite as it was almost laughably easy to dismantle. After only a few minutes I found it was completely untrue (the TGA has an on-line register of such devices). Not only that but there were suppliers (**www.allaboutamber.com.au**) admitting that they couldn't claim therapeutic benefits because they were not on the register. This company still promotes the therapeutic benefits of Hazelwood Jewellery, however:

> Hazelwood products are believed to help to create an alkaline environment in your body, which may help, precent[sic] and appease many of the symptoms caused by being to acidic. Hazelwood, being an alkaline wood, has the natural property of absorbing and neutralizing the body's acidity through contact with the skin. By doing so, the necklaces can also help with digestion, constipation, eczema, migraines, acid reflux, heart burn, nausea, arthritis, skin problems, etc. If you suffer from one of these issues, it is highly probable that you are suffering from an acidity imbalance, and hazelwood may be able to help you alleviate these symptoms in a natural way. Most people who suffer from an unbalanced pH are unbalanced towards the acidic. This condition forces the body to borrow minerals—including calcium, sodium, potassium and magnesium—from vital organs and bones to buffer (neutralize) the acid and safely remove it from the body.

Hmm, perhaps another post is in order. And a complaint.

A complaint was made against one supplier for making claims for the product and this was upheld by the Therapeutic Products Advertising Complaints Resolution Panel, in part because the necklaces are not on the register.

> "The Panel noted, without making any formal finding, that the advertisement appeared likely to breach section 42DL(1)(g) of the Act, which prohibits the publication of advertisements for therapeutic goods that are not included in the Register."

The website involved changed their wording to get around the regulations. Spot the difference:

> OLD: "natural pain relief provided by Amber works by placing the necklace on your body, this allows your skin to warm the amber beads, releasing healing oils which are then absorbed into the blood stream."

> NEW: "Amber is believed to soothe naturally, when Amber is worn next to the skin it is warm and it is reputed to release natural oils that can care for the skin."

What a difference a few words make.

At the time the comment was made alleging the necklaces were on the register, I suspected that intended therapeutic benefits would be enough to fulfil the therapeutic benefits category.

This is supported both in the declaration of the supplier above and from the wording from the complaint; just prior to the excerpt above it states:

> "Therapeutic goods are defined in the Act to include goods that are **represented in any way to be for therapeutic use**. Therapeutic use is defined to include use in or in connection with influencing, inhibiting, or modifying a physiological process in persons.
>
> In representing the advertised products to have an "active ingredient", to release "healing oils which are then absorbed into the blood stream", and to relieve teething in infants, the

advertisement clearly constituted an advertisement for therapeutic goods." [Emphasis added]

Lets say though that the product had been registered with the TGA or will sometime in the near future. I would note that unless the administration was in possession of studies that are not published elsewhere there is no way they could be sure that an actual benefit is occurring. And that brings us right back where we are now.

As an extra note on the activities of the Australian government on this topic I found it amusing to see that the Australian Competition and Consumer Commission issued a safety warning about Amber teething beads at the end of September last year. I say amusing because, while it's not impossible, I do find it unlikely that one branch of the government is condoning their use while another warns against them. Luckily this is not actually the case.

Finally, I am not intending to address every conceivable objection to my arguments, merely a survey of what has been proffered so far. I am not really convinced by anything I have yet seen but I remain open to changing my mind so long as the evidence is of good quality. It doesn't have to be much: a good start would be something that suggests succinic acid has the analgesic properties attributed to it. Then we could address whether succinic acid is released from the beads at ambient/skin temperature. Finally we would need to tackle whether the succinic acid is absorbed topically in any significant dose (decent dose-response curves could be obtained at stage one of this theoretical research programme).

All three of these items would need to be looked at in order to state that amber beads have good plausibility for what they are marketed for.

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

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Submitted by Hugh Young

Police check pyramid link to gunman

Sandra Roberts

POLICE are checking for any link between gunman Brian Schlaepfer's "slightly eccentric" behaviour of meditating in a pyramid and his role in the Paerata massacre.

Detective Inspector Kalvin McMinn told *Sunday News* police were aware of Schlaepfer's pyramid meditation and would include details in a report to the coroner.

... Regardless of how Paerata gunman Brian Schlaepfer used the power of his pyramid at the bottom of his garden in Ostrich Farm Rd, the end result has been nothing short of destructive: seven people dead, a family in tatters and a community in shock.

And the mystery of what turned the simple-living 64-year-old into a killer is as great as the secrets entombed in the pyramids of ancient Egypt.

According to prophets, pyramids have almost miraculous healing properties. They claim pyramids reduce the crime rate and improve the health of communities in which they are built, and offer hope to people who seek their strength.

So what went wrong with the pyramid used by Schlaepfer? Maybe it was built incorrectly and so Schlaepfer received no positive vibes, theorises New Zealand metaphysician Raymond Bain who flew to London this week for a month-long conference to study ways to improve the world.

He says people don't understand the power of the pyramids and that it can be like putting people in front of a high-powered motor car...

– From the *Sunday News*, reprinted in *NZ Skeptic 24*, June 1992.

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