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Bioresonance therapy for smokers

A medium in Wanaka

Hyperdigititis

Alien star-child

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editorial

mp3 blues

HAVING recently joined the happy hordes of mp3 player owners, our household has been getting an object lesson in the nature of random events. For those who have yet to succumb to the charms of these amazing little gadgets, they can hold thousands of songs in memory and play them back in many different ways. You can, for example, just play a single album, or make up a playlist of songs for a party, or to encapsulate a particular mood.

But one of the most popular features is Shuffle, which plays all the songs in random order. Turn the player off, and it reshuffles and starts again. This produces some weird results. We have lots of Neil Young on our iPod Nano, but it seems almost the only song that gets played is Harvest Moon, which we're fast going off. Pink Floyd's 23-minute epic Echoes is a fine piece of music, but we don't want to hear it every time we turn on the player, as seems to happen. Very often it plays two songs by the same artist with only one or two tracks in between by someone else. Once in a while a song pops up that we'd forgotten we even had.

Way back in 2004, the New York Times had an article about how people were convinced their players could detect their moods, or had favourite songs, or had simple neural networks and were learning based on a user's history of song skipping. This perception persists.

The trouble is, random doesn't mean what people think it does (strictly speaking, Shuffle isn't entirely random, because it won't play the same song twice in a single session, but with a couple of thousand songs to run through it's near enough). One commenter on an on-line forum said her iPod definitely wasn't playing songs at random because some songs had been played 10 times while others hadn't been played at all. A reply pointed out that a random distribution has a lot of 'clumpiness', and the numbers of plays should follow a Poisson distribution. Randomly select 1000 songs from a list of 1000, and you would expect 368 songs would never be played, while three would play five times.

None of this should be news to skeptics. The human propensity to perceive order in random events lies at the base of many paranormal beliefs. First one thing happens, then another thing happens. When you notice this occurring a couple of times, it's natural to think the two are causally related, and you tend to forget the times the pattern isn't followed. Only yesterday my brother-in-law was expressing concern about his son travelling unaccompanied on an Airbus, given their recent spate of crashes, despite the lack of any common factor in these incidents. Being able to detect patterns and make plans accordingly is a valuable survival skill for humans, but just as often it can lead us astray.

Bioresonance therapy for smoking – miracle cure or con?

Natalie Walker and Chris Bullen

A therapy marketed as a guaranteed way to stop smoking appears to lack a sound theoretical basis and to have little experimental support.

AS HEALTH researchers in the field of tobacco smoking cessation our aim is to find effective ways to help people quit smoking, and to improve access to effective smoking cessation treatments. The New Zealand government is currently investing heavily in policies that support such actions.

Proven therapies for helping people to quit smoking

When people decide to quit smoking without any assistance (ie by going 'cold turkey'), they have to cope with the loss of all the dependency-forming aspects of smoking at once. Consequently, approximately 90 percent of people who try and quit without any assistance fail[1].

Most smoking cessation support strategies involve the use of nicotine replacement therapy (NRT). With NRT, people stop smoking and replace the 'dirty' nicotine they would normally get from smoking a cigarette with 'clean' nicotine delivered in a lower concentration (such as via patches, gum, inhaler, and lozenges) and in a safer way (that is, without the harmful constituents present in tobacco smoke). In this manner smokers can deal with cravings and other unpleasant nicotine withdrawal symptoms, thus making it easier for them to quit.

Research evidence for the use of NRT has shown it to approximately double the chances of long-term quitting[2-3]. When combined with behavioural support, pharmacological support is even more effective. Good quality evidence from placebo-controlled randomised trials indicates that behavioural support can improve the chances of successfully quitting by two to seven percent[1,4-6]. Behavioural support (eg counselling people about dealing with cravings and urges, encouraging them to persist, helping them to consider the benefits and possibilities of being an ex-smoker) can be delivered face-to-face, by telephone or through the internet.

Never too young to quit. Though if this guy wants to go cold turkey, he's got the wrong bird.

In New Zealand, the cost of NRT patches, gum and lozenge is subsidised ($5 for four weeks' supply). Subsidised NRT is available to smokers coming into contact with cessation support services (such as the national telephone-based Quitline services and the Maori cessation service Aukati Kai Paipa), which also offer behavioural support. The Government has plans to further improve access by promotion of low cost NRT through primary care (ie through a general practitioner).

Unproven therapies

Despite good access to inexpensive, effective treatment

to assist in quitting smoking, unproven and costly therapies are still actively promoted in the media in New Zealand. A recent review of the scientific evidence for the effectiveness of alternative smoking cessation interventions reported that acupuncture, St. John's Wort and NicoBloc are probably not effective[7]. There was insufficient evidence to determine the effectiveness of Allen Carr's Easyway Programme and Nicobrevin, and hypnosis did not appear to be any more effective than simple advice to quit.

Bioresonance therapy

Another therapy being marketed in New Zealand as a "guaranteed way to stop smoking" is bioresonance therapy. This therapy appears to have originated from Europe and according to its proponents has been in use since the 1970s. Claims made on a website (**www.stopsmokingclinic.co.nz**) state that "Bioresonance therapy works through the body's energetic system" or more specifically, "the technique uses biophysics – the physics of the body". According to the above website it works by eliminating nicotine from the body and thus takes away the cravings for cigarettes.

> "All living cells give off energy as weak electromagnetic waves similar to brain waves used in orthodox medicine (EEG scans). Bioresonance therapy, using the Bicom machine, uses these and those of substances (cigarettes) for therapy. The Bicom separates these waves into harmonious (healthy) and disharmonious (unhealthy) components. The healthy signals can be boosted and sent back to the patient to strengthen normal functions, while the unhealthy signals are 'inverted' or turned upside down by an electronic mirror circuit before returning them to the patient through electromagnetic mats. What actually happens is more complicated but the 'inverted' wave cancels the harmful wave that was stressing the body's energetic system. You can see this effect at the beach where a wave reflected from a rock flattens the next incoming wave."

If it truly worked surely you would be doing everything to show the world that it did ... and there have been at least 35 years to show the world.

Furthermore, it is claimed that:

> "...nicotine has an electromagnetic charge over your body giving you the craving to smoke. Bioresonance therapy inverts the energy patterns of nicotine which are then passed to the body via electrodes. This process produces phase cancellation which means that the electromagnetic charge of nicotine is reduced. Therefore, it becomes easier for the body to eliminate nicotine over the next 24 hours and your cravings dramatically reduce as your body detoxifies. Additionally, the phase cancellation removes the energetic pattern of nicotine from the body, erasing the 'memory' of nicotine which also reduces the cravings."

To simplify this process even more, according to the Auckland proprietor of a bioresonance clinic, the patient smokes their last cigarette and places it into the bioresonance machine, which then measures the "frequency" of the cigarette. This frequency is then "reversed" and fed back to the patient via two brass electrodes which the patient holds.

The appointment takes about an hour and it appears some behavioural support is offered, as the website correctly mentions the need to avoid second-hand smoke exposure and smoky environments, known triggers for relapse. Patients are advised not to use NRT during treatment nor use any other pharmacological treatments for smoking cessation. "Detoxification" apparently takes a couple of days (patients are advised to drink water to help with this process) and can include the following symptoms: "headaches, fatigue, upset stomach, metallic taste in the mouth, sweaty palms or a sluggish feeling". Most of these are classic symptoms of nicotine withdrawal.

Perhaps most bizarrely, patients are also:

> "...provided with a Bicom chip that contains the memory of the stop smoking treatment provided. This information lasts for up to 4 weeks and is placed on the body, two finger widths below the navel. This chip will support the detoxification process and help if any cravings are experienced. Drops are also available to support you in times of stress in the following weeks."

Does bioresonance therapy work?

The New Zealand Stop Smoking Clinic website states that Bicom Bioresonance therapy is "the most successful stop smoking therapy in New Zealand." Even the authoritative BBC and New

Zealand's very own *Close Up* TV programme have extolled the virtues of this intervention – see **www.stopsmokingclinic.co.nz** for video links. However we were unable to locate any randomised controlled clinical trial evidence to support this treatment, despite an extensive search for the term "bioresonance" in a number of medical databases, specifically Medline (1948 to May 22 2009), Embase (1980 – week 21, 2009), AMED (Allied and Complementary Medicine) database (1985 – May 2009), Cochrane Central Register of Controlled Trials (2nd Quarter 2009), ACP Journal Club (1991 to April 2009), Cochrane Database of Abstracts of Reviews of Effects (2nd Quarter 2009), the Cochrane Database of Systematic Reviews (1st Quarter 2009) and the Conference Papers Index (1985 – present).

In total, only 13 articles were located that even mentioned the term, of which eight were non-English publications. The articles with English abstracts were commentaries, non-randomised rat studies, case-series studies or physiology studies. The papers were predominantly published in journals that focused on alternative therapies and no reference to smoking was made in any of the publication titles or English abstracts provided by the database searches. One paper discussed treating 12 athletes with "strain syndrome" with Bicom therapy and 12 with more traditional methods (eg ultrasound, stimulating current, etc)[8]. This study reported less therapy time and treatment time in the Bicom group, but we were unable to determine if the study was truly randomised nor the validity of the rest of the study design. However, given the small sample size (24 people only), any positive findings could well be due to chance alone. Interestingly, one paper discussed the use of pseudo-scientific language to cloud important issues (how to present nonsense as science), using bioresonance therapy as an example[9].

The evidence is not there

Overall, no studies that stand up to the standard level of scrutiny used for orthodox treatments could be identified. The weight of evidence to support the use of this therapy (for any condition and not just smoking cessation) seems to consist of material in non-peer-reviewed publications, such as case studies provided on websites and in books[10-12] and promotional literature provided by those marketing the therapy. A number of Bicom websites (e.g. **www.bioresonance.net.au/bicom_therapy.htm**) mention the existence of three studies on allergic conditions supposedly published in Chinese medical journals[13-15]. These studies were not identified by our search above, but translations for the papers are provided on the above website (although there are no details provided about the source journals so it is not possible to verify their authenticity), along with two additional studies (one on chronic inflammatory bowel disease[16] and one on central nervous disorders in children[17]) – once again with no details provided about their source. Four of the five studies are case studies or case-series[14-17]. One of the Chinese studies claims to have randomised 300 children, but no details were provided on how the randomisation was undertaken[13]. Furthermore, if the randomisation had been done it seems not to have worked given 213 children were in one group and 87 were in the other. Our suspicions are that the study was not randomised and therefore the findings are likely to be biased and meaningless.

It is possible that our search may have missed identifying some papers. It remains odd, however, that so little research appears to have been published given that:

- In May 2009 bioresonance therapists meet in Germany to celebrate the 49th (ie they have had 48 previous meetings) International Congress for Bicom Therapists. Most congresses and conferences (even those in the complementary and alternative medicine field) publish posters or presentations from their meetings and these are referenced on international databases – yet none of these conference proceedings were located.

- The therapy is claimed to be so effective

- The therapy is claimed to be in widespread use. One website (**www.bicom.co.nz**) states that "the technique is almost mainstream in Germany, and the German-speaking countries, Austria and Switzerland", and that the instrument is "widely used in Poland for helping smokers to quit and has over 70 percent success (over 100,000 people have been treated over six years)." And that in China, the therapy is "used exclusively in children's hospitals mainly to treat eczema and asthma."

If it truly worked surely you would be doing everything to show the world that it did ... and there have been at least 35 years to show the world.

Accepted international criteria for what is regarded as an effective smoking cessation method use the benchmark of six months of continuously not smoking (not even a puff) after quitting. The New Zealand Stop Smoking Clinic website claims that Bicom Bioresonance therapy has "70-90 percent success after one hour" for stopping smoking. Anyone can stop smoking after an hour … it's a bit like asking you to stop eating for an hour. The issue is when you start smoking again. The Auckland proprietor was unable to provide us with this information.

In conclusion

There is no evidence to support the therapeutic claims made by those promoting bioresonance therapy other than uncontrolled case studies. Any benefits are likely to be due to the placebo effect. A systematic review of 105 NRT trials (involving a total of 39,503 smokers) found that when the quit rates for all the trials were pooled using the longest duration of follow-up available from each trial (6-12 months), 17 percent of smokers allocated to NRT had quit compared to 10 percent in the placebo control/no NRT group[2]. Clearly the placebo effect plays a significant role in smoking cessation.

Is it therefore wrong to make a claim about a product when simply believing that the product will work makes it effective for some individuals? Does it matter how you try to give up smoking as long as you make an attempt to give up?

In 2002/3, 24.5 percent of New Zealand adults smoked (47.2 percent of Maori), with this figure dropping to 19.7 percent in 2006/7 (38 percent in Maori)[18]. Despite this recent evidence of change, based on the current rate of progress it is estimated that it will take 100 years before the New Zealand adult smoking rates reach five percent, the level of smoking in New Zealand doctors[19]. New approaches to assist smokers to quit are still urgently needed, ideally ones with proven efficacy and that are cheap, easily accessible, and acceptable to Maori and people from the lowest socio-economic group (who have a three times higher rate of smoking than people from the highest socio-economic group[18]). At $450 per treatment (second treatment free if taken within the first month), Bicom Bioresonance therapy is far from accessible to the people that need it most. One could argue that it is designed to generate revenue as quickly as possible, by using pseudoscience to bamboozle the innocent. Are we too cynical? One company (**www.bicom2000.com**) will gladly send you a detailed profitability calculation form.

For a rather interesting conversation of how another member of the skeptic community views this treatment, see **www.sciencepunk.com/2007/03/monadith-bioresonance-smoking-cure/**

"Our secret is safe," muttered the trans-dimensional ninja-duck camp mother.

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The day we were nearly lynched in Wanaka!

Stuart Landsborough *has an interesting night out with one of the* Sensing Murder *mediums.*

ON 12 May, 2009, Kelvin Cruickshank of *Sensing Murder* fame came to Wanaka to wow the locals with a one night show in the local town hall. It sounded like an interesting and educational night out for my wife Coleen and I, so we booked a couple of tickets.

Now, at this stage I had better inform you that both Coleen and I are very skeptical about the psychic art, and I should also inform you that I do operate the tourist attraction at Wanaka called Stuart Landsborough's Puzzling World. It is designed to be a fun place, and has 160,000 visitors a year. One very small part of the attraction is my $100,000 challenge to psychics to find two hidden promissory notes. This challenge is highly visible in the entrance hallway to the business. Seven people who obviously believed in their own psychic abilities have tried, and seven have failed. There is a $1,000 participation fee for the psychics; this is to make sure that we are not over-loaded with thousands of other people just annoying us with guesses. Actually, until the last challenger, all the deposits were given back. The last one was partly refunded and the balance given to a local playcentre group.

During the last year, I have also established another challenge, this time specifically to the psychics of the programme *Sensing Murder* and its director. The challenge is to join with me in scientifically-based experiments that will prove or disprove their abilities. The challenge has a total of $300,000 in prize money. Although I have had a response from the *Sensing Murder* director, they have refrained from participating.

Now, to continue with our interesting night out, it is often said of skeptics that they are closed-minded and should go along to psychic demonstrations that would then certainly change their minds. We decided to go for a good night out and to be educated – one way, or another!

When we entered the hall, we purposely headed for the middle to be less conspicuous. We were there to sit, listen and learn. We were surrounded by some two to three hundred people.

Kelvin Cruickshank came onto the stage to a round of applause. He started to relax himself and the audience with a few jokes (he shouldn't give up his

day job to become a comedian). He came across as a nice cuddly young man that mothers would be happy to have as a son-in-law. Later, we were to see the other side of him.

After about 15 minutes of warming us up, he suddenly got into the real purpose of his visit. He gave a microphone to a woman in the front row; we could see her well in a close-up shot of her on a big screen on the stage. He then turned to the middle of the crowd, looked straight at Coleen, and asked for another microphone to be handed to 'the woman in a red top' (Coleen). She was mortified!

But then he seemed to ignore Coleen and carried on with the first woman in the front row. While he was doing this, he drew an upright line on a whiteboard and at the top of the line placed eight to 10 stars. He then turned to the audience and stated that each of these stars represented a spirit, most of which related to Coleen. Going through our minds was that surely he must know who we were and must be setting us up for a big fall.

Again ignoring Coleen, he moved on to another woman in the front row, with less success than the mediocre reading of the first woman. He then talked to yet another woman in the front row and stated that someone in her life had suffered from a brain haemorrhage. The woman said no. Kelvin then turned to the woman next to her, and asked her the same question, saying that it must be coming from her and it was in her family; the response was again negative. Finally, in utter desperation, he asked the *whole of the 15 people in the front row* if that illness was in their family. Absolute silence! What an embarrassing failure. How psychic did that sound? He gave up on the haemorrhage.

Before we went into the hall, my wife and I had discussed how we would react to any of his questions in the very unlikely event we were picked on. Obviously, we were to respond honestly; however, we were to give him nothing else other than the words 'yes' and 'no', either in words or body language.

At last, he turned to my wife. Coleen was now a head-and-shoulders picture on the big screen for all the audience to see. First, he asked Coleen if a woman's first name (we can't remember it now) meant anything to her. Coleen said No. He then added the surname of 'Stokes'. Again it meant absolutely nothing to her. While he was saying this, he dramatically wrote the names on the whiteboard. "Your father has passed over," he said. This was news to Coleen as she had only talked to him a few days previously. (Would it be possible for us to sue him for creating unnecessary stress?) In fact, Coleen is one of those truly lucky people that has got to her mid-fifties and has not had a single person important to her die. Where were all those stars coming from?

"You are the reader in the family," he stated. (What is that to do with connecting with spirits?) "No," said Coleen, "my husband is." He ended up asking a total of four questions and not obtaining a single hit. "Could you pass the microphone to the woman beside you?"

Coleen breathed a successful sigh of relief. Curiously, during the whole evening, that was the only time he used the whiteboard. Why? What did he think he knew?

Kelvin asked the lady next to Coleen just one question – the same name that she had asked Coleen. The woman failed to recognise it as someone she knew. He then asked for the microphone to be passed over to ME! "There must be a god up there!" I thought. Did Kelvin really know what a skeptic he was talking to? If he did, then was he savouring that moment too? There was an audible murmur from the crowd as some of them recognised me. Was this to be a battle of the Titans?

His first question/statement was that my parents were dead. Looking at my white hair, he could obviously tell that they would be in their mid-nineties now, so that was a reasonably safe guess, rather than a psychic connection. He fired off two or three statements about my mother including that she had a hard side to her. That was the furthest from the truth about my mum! (Since then, I asked my ex-wife about it; she just laughed.) He then said that she had died before I could get back to see her. I stated that this was correct. (I suppose by now he would have heard my English accent and taken a guess that she died in England.) He then stated that she had unfinished business with me. I said that I doubted that this was true. (I had only seen her a few months before; she knew she was dying then, so no doubt expressed all that was needed.) He wasn't getting

very far with me so must have decided to give me away. However, before he could move on, I stated in a loud voice to him that apart from one of the guesses, he hadn't got much right! There was an audible gasp from around the hall.

"I think it is time for a break," he said, and unhappily walked off the stage. Immediately, the woman beside Coleen leant in front of her and starting abusing me! "Why did you come here if you don't believe, why did you come, you are spoiling it for everyone," she said. Then, in front of me another woman turned around and abused me too. I was astonished at the vehemence in their voices.

We lived through the short break with no more abuse. Kelvin came back onto the stage with applause from the audience. No smiles; he focused on me. "I know who you are," he pouted. "You are the person that has The Puzzle Place [actually 'Puzzling World'], well that is certainly one place I won't be going to." A round of applause exploded from the audience at this childish outburst. Somebody must have told him about me in the break. "You have a challenge for $100,000 that is like finding a needle in a haystack – why don't you just give it to charity? We have given $26,000 to charity, I challenge you to do the same," he hissed. An even louder round of applause came from the audience – they were really getting into the mood and he was working on it. Then he mumbled something else, then said something like "you expect people to pay twenty thousand dollars to try this challenge." This shows how he was muddling up the information he had; this $20,000 challenge is by Tony Andrews, another *Sensing Murder* challenger, nothing to do with me. Actually, it is prize money, whether they succeed *or lose*. Not a participation fee. (There is yet another challenge to these psychics in New Zealand for a massive prize of two million dollars – the biggest reward in the world). I couldn't let this all go by, so with a strong voice I broadcast to the hall that some of the things he was saying were not completely true. Before I could say any more, I was shouted down by what seemed a roar from his adoring fans, it felt that a large minority of the audience were involved. They shouted out things like: shut up, get out, and other stuff. For the first time in my adult life, I felt intimidated by public aggression against me. It made me uneasy. I thought we may be thrown out! Kelvin continued to scowl but said no more. Where had that cuddly young man gone?

Things are not always as they seem: the Leaning Tower of Wanaka outside Stuart Landsborough's Puzzling World.

It was time for me to say no more, so that is what I did.

Kelvin then 'interviewed' a couple more people but did not achieve many reasonable 'hits'. He then tried to find a person that owned a Suzuki Vitara. A woman behind us owned up to having one. He stated it was parked in a lean-to against the house. With an enigmatic, Mona Lisa kind of smile she said No. He asked her three more questions and got the same single word negative reply and same smile. Maybe she was a fellow skeptic.

Finally, he turned to an elderly woman at the back of the hall, who happened to be wearing *a red top.* He played her like the master that he is supposed to be and she gave him all the help he could ever desire. For Kelvin's fans this was absolute proof that he had special powers. For him it was a great ending to finish off these one-to-one sessions.

It was then that Coleen pointed out to me that whilst most of the audience were wearing wintry dull colours, there were only *three* women wearing a red top; one was Coleen and one was the last lady to be interviewed, or whatever you call what he was doing. Could it be that one of Kelvin's 'spies' had mingled with the crowd before they entered the hall and picked out the woman in a distinctively red top

To Page 12

Compiled by David Riddell

Save the rocks, say Celt theorists

THOSE zany Ancient Celt people never give up, do they? Now they're campaigning to protect some boulders on a hillside at Silverdale, north of Auckland, due to be levelled as a site for a new hospital (NZ Herald, 6 May).

The boulders are almost perfectly spherical concretions, similar to the famous Moeraki Boulders. Martin Doutré, author of *Ancient Celtic New Zealand*, says they were placed on the hill as one of many structures built for calendar and surveying functions by fair-skinned people known as "Patu paiarehe" – before Maori came from Polynesia about 800 years ago.

Some showed ancient etchings of geometric designs similar to those on structures in Britain dating back to 3150BC, he believes.

"They were concretion boulders, which can only form in sea sediments, yet they had made it to the top of this high, yellow clay hill."

Geological Society spokesman Bruce Hayward said there was no mystery how the boulders got to their current position. Like most of New Zealand, Silverdale was once under the sea. The boulders formed there 70 million years ago, and were raised up by tectonic activity. Softer sediments around them had since eroded away, leaving them exposed.

Creationists settle their differences

The acrimonious split between creationist organisations Answers in Genesis (AiG) and Creation Ministries International (CMI) (see *The great downunder creationism takeover*, NZ Skeptic 87) has been papered over, for the time being at least (Kentucky Enquirer, April 27).

Both sides have reached an out-of-court settlement in their battle over copyright and mailing list ownership, which has been running since 2005.

The US 6th Circuit Court of Appeals in Cincinnati ordered the rivals to arbitration in February in a decision that described the fight as a power struggle for control of the creationist message.

CMI has criticised AiG for its financial dealings and approach to creationist teaching. CMI chief Carl Wieland has also accused AiG's Ken Ham of trying to take control of his organisation, stealing mailing lists and spreading false and vicious rumours about him and his ex-wife. In documents filed in US courts, officials with AiG said Ham was the victim of a disinformation campaign by the Australian group.

Ham, originally from Brisbane and now living in Kentucky, took the US and UK branches of AiG out of the global organisation in 2004, starting his own magazine and appropriating the mailing list of the Australian branch's publication, which had been distributed world-wide. The AiG organisations in Australia, New Zealand, Canada and South Africa then re-branded as CMI.

Something tells me this accord won't last long. There's too much money at stake in the global creationism industry, and the feud between Ham and Wieland has gotten really personal.

Dinosaur park heads for extinction

A plan for a multi-million dollar dinosaur-themed park in Waihi has been shelved (Waikato Times, 10 June).

Newsfront mentioned this one back in NZ Skeptic 84 because the park's backer, the Dinosaurs Aotearoa Museum Trust, was founded by Darren and Jackie Bush, who operate a Wellington business called Dinosaurs Rock. They run school geology programmes, presenting both evolutionary and creationist perspectives, depending on their audience.

The park was to feature a museum with local finds, replica skeletons and life-sized dinosaur models built by Weta Workshop.

A statement to the Waikato Times cited "unsuccessful funding applications in the Waikato", "increased risks" and "the added pressure of the global recession" as reasons for the project not proceeding.

Friday 25-Sunday 27 September
Kingsgate Hotel
Wellington

http://skeptics.org.nz

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Friday 25 September — Sunday 27 September, Kingsgate Hotel, Wellington

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Skeptic photo among NZ's spookiest

A photo of a ghostly head in a basket first published in NZ Skeptic 44 has made a short list of four of New Zealand's spookiest photos (The Press, 4 May).

The disembodied head photographed by Halswell resident Carol McDonald was eventually identified as a photo of Jack Nicholson, from *The Shining*, which had been on the back cover of the previous month's *Skywatch* magazine. The way the magazine was lying over the basket's other contents gave it a remarkably three-dimensional appearance.

Here's Johnny! Jack Nicholson startled more than a few people when he turned up in a Christchurch basket.

Of the other Press images, two where faces could be discerned in flames in a Westport Volunteer Fire Brigade exercise left Skeptics chair-entity Vicki Hyde unimpressed. "Shots involving fire, smoke and fog are notorious for producing ghost images,'' she said. The other photos were equally easy to explain.

One, from a North Island pub which showed an indistinct feline-type face in the lower part of a window, "looks to be a reflection of objects inside the room'', while a face peering between two students at Linwood College could easily have been someone behind the pair trying to get in shot.

"Have you ever seen teenagers mugging for the camera? It's hard to tell, with the tight cropping and over-exposure blanking out the surrounds.''

Makutu ritual 'without cultural basis'

The ritual which led to the death of Janet Moses had more to do with *The Exorcist* than anything in traditional Maori culture, according to statements made by witnesses (Dominion Post, 14 June).

Moses died in Wainuiomata in October 2007 during attempts to lift a makutu, or curse, from her. Five members of her family were convicted of manslaughter on 13 June.

Tainui tikanga Maori teacher Tui Adams said in evidence that the cleansing ritual was without cultural basis and alien to anything he knew. And kaumatua Timi Rahi told the court he had never heard of a ceremony in which large amounts of water were poured into someone's nose and mouth to remove an evil spirit.

One of those convicted, Hall Jones Wharepapa, said: "We got her into the shower and we turned the cold water on ... I don't know if you've seen the movie *Exorcist*, but it was like that."

Dr Adams said makutu was a form of witchcraft outlawed in Tainui, the iwi to which Janet Moses' maternal family belongs. Belief in it remains only in pockets, he said.

Consultant forensic psychiatrist and Maori mental health specialist Rees Tapsell explained what had happened as group hysteria. It could happen in times of high emotional stress involving lack of sleep and isolation, he said.

Massey University lecturer Heather Kavan, who specialises in world religions, said although the case might be perceived as a Maori cultural issue, "the things people were experiencing have been noticed in many countries across the world as possession trance experiences".

Crop circles – Solved!

Wallabies are eating opium poppies and creating crop circles as they hop around, says Tasmania attorney general Lara Giddings (BBC News, 25 June).

Reporting to a parliamentary hearing on security for Australia's poppy crops, which supply about 50 percent of the world's legally-grown opium, Ms Giddings said there was a problem with wallabies entering poppy fields, getting "as high as a kite" and going around in circles.

"Then they crash," she said.

with whom he set up a casual conversation and therefore found out some useful information? Could it be that Kelvin was given that information and was told to pick on a woman in red? Could it be that by an incredible piece of bad luck (for him) he picked the wrong woman in red? What an amazing piece of bad luck to pick on my skeptic wife, then worse luck to transfer his attentions to me – one of a very few people in New Zealand that has a challenge to him and Sensing Murder?

Kelvin then asked for a few questions from the audience. The show drew to an end and was rounded off by an amazingly loud round of applause from the audience.

Were Coleen and I the only sceptical people in the audience? I doubt it; I just think they were safely keeping their mouths shut. Coleen and I saw it as just a farcical manipulative show, couldn't others see it too, or was it that *we* were just typical 'closed-minded skeptics'? Why didn't the believers wonder why Kelvin not only got so much wrong, but also wonder what happened to all the spirits that were marked on the white-board that wished to communicate with Coleen? Kelvin soon conveniently forgot about them.

We thoroughly enjoyed our unusual night out.

Stuart Landsborough is the founder of Stuart Landsborough's Puzzling World, in Wanaka. Information on his challenge to Sensing Murder is at www.psychicchallenge.co.nz/smc/index.html

Chiropractic response also 'spurious'

JUSTIN Vodane's letter (NZ Skeptic 91) is a classic defence of the indefensible.

This is illustrated by his referring to the Viox problem. Whilst the actions of some drug companies are questionable, and may actually be criminal in the Viox matter, this has absolutely nothing to do with the central question.

Despite a history of over a hundred years, the basis of chiropractic theory remains unproven. Spinal subluxations are yet to be validated as existing in reality, and have yet to be shown to cause disease states peripheral to the spine.

Vodane's reference to neck manipulation is intriguing. Whilst there may be a very occasional indication for controlled neck manipulation for an uncomplicated musculoskeletal problem, there is no justification for such treatment when it is based purely on chiropractic vertebral subluxation theory. (*Homola S.: Chiropractic, cervical spine manipulation and stroke. Scientific Review of Alternative Medicine 2007; 11:19-22.* The author of this article is himself a chiropractor). The defence of neck manipulation given by Vodane misses the point – there is no justification for neck manipulation, so any risk of stroke is unacceptable. Also, even if only 20 percent of the cerebrovascular accidents occurred because of the manipulation, that is so high as to rule the treatment dangerous as well as unnecessary.

Finally, Vodane has not declared a potential conflict of interest in his letter. He defends the chiropractic registration procedure as being robust and fair without revealing that he is an examiner for the examination pertaining to that registration process.

Graham Sharpe
Consultant Anaesthetist (for purposes of open disclosure)

'Psychological' processes inadequate

The 'psychological' processes that Martin Wallace describes in his article, The physiology of the placebo effect (NZ Skeptic 91), are wholly inadequate.

Pavlov's respondent conditioning would shed little light if any at all on the placebo effect.

However, Skinner's operant conditioning would provide an excellent explanation of the placebo effect, particularly in the analysis of the verbal behaviours of both doctor and patient.

In contrast, the expectancies of cognitive psychology don't explain anything at all. Cognitive psychology gives names to a set of behaviours which are then used to explain the behaviours they name. Road-rage and Attention Deficit Disorder are good examples. And so is placebo analgesia.

Behaviour analysis emphasises the importance of the environment (or 'context' if you like). It does this without resorting to the

'mind' or mental states as (non-existing) entities.

To explain the physiology of the placebo effect, no relationship between the 'mind' and body is necessary. The relationship proper is between the verbal behaviours of the doctor and patient and the body's physiology.

John Lok
Dargaville

Obesity and osteoporosis

Really enjoy the mag.

Two items: The BMI index of obesity (excess fat, excess food consumption) takes no account of bodily type; Sheldon's index in 1950's did.

The person with long bones, minimal musculature and much fat has a low BMI but is obese, and the person with large muscles can have a high BMI. I think it's not a good index to rely on.

And then all the talk about osteoporosis never mentions the controlling role of parathyroid hormone, surely more important than all the calcium supplements (which can cause urinary stones?)

And what about glucosamine? Breaks down into glucose and polyamine, can't go directly into joint cartilage.

Bill Tucker
Auckland

An alien star-child?

*Waikato University biological sciences lecturer **Alison Campbell** posts a regular blog on matters biological (**sci.waikato.ac.nz/bioblog/**). Her aim is to encourage critical thinking among secondary students. We think these need sharing.*

LAST week one of my students wrote to me about something they'd seen on TV:

> My friend and I saw this on Breakfast this morning. Although we don't think it is all true, we are still interested because they talked a lot about the skull's morphology and how they believe it is the offspring from a female human and an alien. Here's the website on it: **www.starchildproject.com**
>
> It would be great to hear your thoughts."

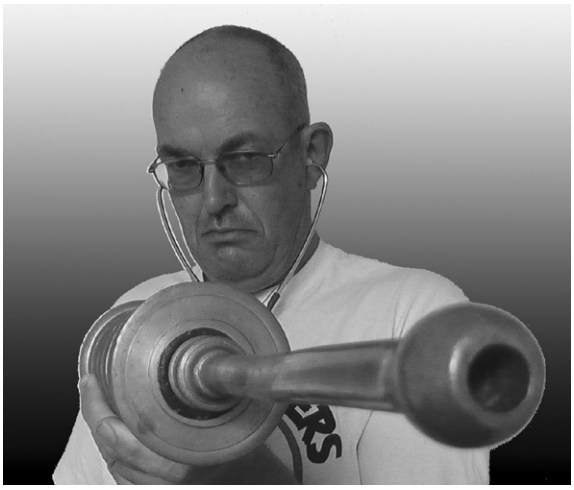
So I went off and had a look at the website, and wrote back. My first thought is that (following what's called 'Occam's razor') the simplest possible explanation is likely to be correct, ie that this is simply a 'pathological' human skull, rather than a mysterious alien-human hybrid. (Read Armand LeRoy's book *Mutants* to get a feel for just how wide the range of potential variation is in humans.)

Happily there are ways of testing this - the skull is reportedly only 900 years old so it should be possible to look at its DNA.

Alison Campbell and friend (not a Star Child.)

And indeed this has been done – and the data are presented on the Starchild project's website. Which surprised me more than a little, given that they don't support the hybrid idea! The skull in question – which certainly has an interesting shape – was found along with the remains of an adult female. The DNA results show that both woman and child were native Americans, not related to each other, and also that the child was male. There is absolutely no indication there of any 'alien' DNA. Which is what I would have predicted – if we were to be visited by extraterrestrial individuals, why would we expect them to be a) humanoid and b) genetically compatible with us? ie the likelihood of successful interbreeding is vanishingly small. And that's a big 'if' in any case ... Carl Sagan had some sensible things to say on that issue in *The Demon-haunted World*.

My personal view is that the whole thing should have been examined rather more critically by the programmers before it made it to air. But then, I have ceased to be surprised at the uncritical nature of much that's presented by our broadcast media (with the honourable exception of the National Programme!).



Money well spent?

John Welch

TIM Hume (Sunday Star Times June 21) has written a good account of traditional Maori Medicine (Rongoa Maori). The Health Ministry provides $1.9 million annually for this nonsense. That money would pay for approximately 1000 hip replacements.

One woman is described as taking her "traveling medicine show" overseas. It has all the elements of quackery – the laying on of hands, mysterious signs, mysticism and spiritualism. Her grandson is described as already showing the healing gifts.

Maori curses (makutu) are no problem. These can be cured, even remotely. We are told that the spiritual healer performed a "remote cleansing" in America but knocked over a chair while leaving the room. Tim Hume comments: "statements like this ... tend to invite disbelief, if not ridicule". And so they should!

One of these practitioners was recently convicted of "sexually assaulting two women with potatoes". Why potatoes? I thought carrots or a cucumber would have been more useful. He had diagnosed a woman as having both breast cancer and liver disease. She had neither. He claimed to be able to detect abuse by smelling the patient. Unfortunately for him, the patient smelled a rat. Still, smelling the patient makes as much sense as recovered memory.

Rongoa can even cure orthopaedic conditions such as one leg shorter than the other (the leg pull?).

A woman who had failed to achieve pregnancy after one year went for treatment that involved deep massage "dislodging afterbirth remaining from her first pregnancy". The only way quacks can flourish is when people are ignorant and gullible. The cure is education and an appropriate degree of scepticism starting during early education.

Tim Hume is right on target when he comments: "it sounds like the placebo effect dressed up in cultural justifications."

At a time when Maori are afflicted with diabetes, obesity, hypertension and renal failure, Rongoa Maori is a colossal waste of money. Anyone daring to criticise it will of course be labeled as a racist.

Deadly allergy treatments

A Dublin man died while receiving treatment for peanut allergy from a kinesiologist. The kinesiologist was using an elimination technique called muscle testing. This is total quackery and I know of at least one NZ doctor who was struck off for harming patients while using this technique. The perpetrator in the Irish case is described as "Dr Brett Stevens". I was unable to find any such registered doctor of that name on the Irish Medical Register so I can only conclude that this is yet another example of pretentious quacks giving themselves airs.

While I was doing an acupuncture course I saw a demonstration of this nonsense, not realising at the time exactly what was going on. I certainly recognised it as nonsense and I have written before about how astounded I was at the credulity of the other doctors present. Briefly, a patient was presented allegedly suffering from an allergy to tomatoes. While the patient pinched his index finger and thumb together the examiner tried to separate them (the muscle testing, sometimes called bidigital O ring

testing) demonstrating a baseline measure of strength. When the patient held a tomato the examiner showed how the pinch grip was weaker. There is absolutely no scientific basis for this absurd test which is totally subjective. There are still quacks using it in New Zealand as well as some doctors but they keep pretty quiet about it for obvious reasons. If I heard of any registered medical practitioner using this test I would not hesitate to report them to the Medical Council.

The unfortunate Irishman collapsed and died on the way to the hospital. The coroner expressed concern but instead of denouncing the quack treatment he "called for re-evaluation of the allergy elimination technique." This technique doesn't need re-evaluation, it needs condemnation and the kinesiologist should have been prosecuted for manslaughter.

Allergy Today, Winter 2009

Acupuncture flunks again

A trial subjected randomised chronic back pain sufferers to either sham acupuncture, normal care or real acupuncture. Sham acupuncture was administered using toothpicks concealed inside guide tubes. The two acupuncture groups did equally well and significantly better than the normal care group. The improvement gradually waned over a year.

ACC has also examined acupuncture in the context of acute back pain and any effect is short-lived and soon disappears.

It is unclear whether the chronic back pain group showed any functional improvement since the measurements of improvement were all subjective. For example, did large numbers return to work? This is the true test of a treatment, whether it is clinically important rather than just showing some statistical improvement.

What this trial essentially shows is that gimmick + fake gimmick is superior to normal care. What needs to be done next is the same trial using laser acupuncture. The same patients are randomised to normal care, laser acupuncture and (blinded) laser simulated acupuncture. Whilst not given to divination I will modestly predict the results of such an experiment. Both treatment groups will show the same degree of improvement which will be superior to normal care. Just to add a twist, you could add a fourth group being treated by some really motivational and enthusiastic physiotherapists. This of course enhances the placebo effect and could just close the gap between the "normal care" and the two active treatment groups.

Arch Intern Med. 2009; 169(9): 858-866.

And again

I was at a conference recently and was alerted to a trial published in the BMJ that allegedly showed that acupuncture led to improved outcomes during IVF therapy for childless couples. In other words, an improved pregnancy rate. This is a load of rubbish and I recommend you look up the article and in particular read the rapid responses. The best one was from Edzard Ernst and after reading it I recalled something I had read in his book *Healing, Hype or Harm*. Sure enough, it was in a commentary by James Randi who was commenting on scientific misbehaviour around a published article purporting to show improved pregnancy rates for IVF patients who were subjected to prayer from total strangers from around the world. These results were a fraud.

I am not claiming that the BMJ paper is a fraud. It is simply absurd and should be treated in the same way as a paper purporting to show a beneficial effect from homeopathy. As a skeptic you simply think along the following lines: Is it more likely that this is a true effect or more likely to be a mistake or even fraud? A more crude response on this paper would be "bullshit baffles brains".

Skrabanek has a good take on this as well: Extraordinary claims require extraordinary evidence, and randomised clinical trials, applied to absurd claims, are more likely to mislead than illuminate.

BMJ, doi: 10.1136/bmj.39471.430451.BE (Published 7 February 2008).

Skranabek P. Demarcation of the absurd. Health Watch Newsletter (5) 1990, 7.

John Welch is spending the next year in the Czech Republic, so this will be the last Hokum Locum. NZ Skeptic thanks John for his excellent contributions over many years and wishes him well.

Hyperdigititis – a pandemic for our times

Jay Mann

Presenting numbers with excessive and artifical precision in product labels, newspaper articles and report tables does nothing for scientific credibility and sows confusion in the mind of the reader.

GARRISON Keillor's book *Lake Wobegon Days* states that "The lake is 678.2 acres, a little more than a section..." To me this is a master-stroke, providing corroborating detail that produces utter belief in the reader.

In contrast, a science-fiction novel about exploring a new planet in a home-made zeppelin claims that a crew member cried out, "Captain! That mountain must be at least five thousand five hundred and forty five meters high!"

This paragraph stopped my reading dead in its tracks (to mix a metaphor). I guarantee that no entity, in this galaxy or anywhere in the universe, has ever gurgled or telepathed that "The mountain must be at least 5,545 *glugs* high!"

Obviously the original American edition said the mountain was "at least three miles high", then the task of converting to metric values was given to the publisher's idiot nephew who didn't know enough to change "at least three miles" into "at least five kilometres". Instead he relied blindly on the output of his hand calculator. Readers who know that visual measurement of distance is imprecise, cannot be bamboozled.

Overly precise numbers can be a source of amusement but all too often are a form of spin-doctoring. Commercial organisations are especially prone to report excessively precise numbers that pretend to an impossible degree of accuracy. I propose the term, 'hyperdigititis' to describe such pseudo-scientific nonsense.

Under what circumstances do we accept improbably precise values, and when do we reject them? I suspect one important factor is whether we ourselves can estimate whatever is being measured, as opposed to invisible values only measurable by a white-coated scientist. Invisible units are typically over-specified whereas visible units are rounded to sensible values.

Example 1

Excessive digits act as barriers to readers' understanding. Table 1 is an example from a (name-protected) agricultural report:

Treatment	Raw yield	% Sugar
Chemical A	43.080	15.230
Chemical B	29.800	12.200
Chemical C	44.880	15.560
Untreated Mean	43.610	15.985
LSD .05	8.575	1.447
CV	15.25%	7.70%

Table 1. Excessive digits in an agricultural report.

A brief explanation is needed here: The LSD or Least Significant Difference indicates how far apart two averages must be in order to conclude that they differ significantly with 95 percent confidence. The CV or Coefficient of Variation measures the variability of a measurement, in this case about 15 percent for yield and eight percent for sugar percentage. An important lesson here is that *all* biological data has at least five percent variability.

The table above demonstrates an all too common misuse of numbers, to convince us that the authors are incredibly precise, rather than to present useful information. The large degree of uncertainty (LSD and CV) shows

that *none* of the digits to the right of the decimal point are valid. That even applies to the LSD itself, since the LSD also has a certain amount of uncertainty.

So the figures ought to be as in Table 2.

Treatment	Raw Yield	% Sugar
Chemical A	43	15
Chemical B	30	12
Chemical C	45	16
Untreated Mean	44	16
LSD .05	8.6	1.5
CV	15%	8.00%

Table 2. The same report figures with adjusted digits.

I think you'll agree with me that the second version is much easier to understand, showing that Chemical B lowered yields but chemicals A and C had no effect.

Example 2

I once had to compile comprehensive tables of animal feedstuff compositions. Published reports usually had three-decimal precision, eg, "4.35% arginine". Never mind that analyses of different samples showed coefficients of variability up to 19 percent.

Enormous tables showing 17 amino acids with three-decimal accuracy are bulky and impossible to understand. By dropping the unjustifiable precision, these tables became smaller and quite readable. After all, the readers of that report were mainly animal feed formulators, who probably don't want to know more than low, medium, or high. I was able to inform them that six independent analyses of, say, methionine in wheat, showed a low of 0.10, mean 0.17, maximum 0.22.

Example 3

On 22 April 2009, the Christchurch Press published a beautifully illustrated half page to show that alcoholic beverages are energy-rich. This article inadvertently demonstrated the difference between invisible kilojoules and visible foods (blocks of chocolate).

The article claimed that one glass of wine contains 390 kJ, gin-and-tonic 400 kJ, and a shot of Baileys 408 kJ. (In addition, a pint of beer was measured, with incredible precision, as 1098 kJ.)

How many calories in a glass of wine? About the same as four little blocks of chocolate, give or take.

Some credulous readers might have switched to drinking wine instead of Baileys, yet the published values were basically meaningless!

The energy value of wine depends on whether it's red or white, dry or sweet. According to the November 2006 issue of Healthy Food, the energy value of 100 ml of white wine is between 345 and 395 kJ, while red wine is 340-365 kJ (**www.healthyfood.co.nz/articles/2006/november/how-many-kjs-are-you-drinking**).

Those figures are based on a 'standard' 100 ml serving of wine, rather than the 135 ml servings proclaimed on wine bottles (5.6 servings from 750 ml). Don't bother working out ratios, unless you are prepared to measure out beverages to three-place accuracy.

The real conclusion, entirely missed by the newspaper, is that a typical alcoholic drink has about 400 kJ regardless of whether it's wine or spirits.

In stark contrast to the hyperdigitised kilojoule values, the article states that each drink is equivalent in fattening power to half a block of chocolate. Not 0.48 of a block! When the measurement involved something we can see for ourselves, the journalist automatically rounded correctly.

Example 4

The consumer-food industry, world-wide, seems determined to confuse consumers with food composition tables filled with excessive and unjustifiable detail. To fit all these digits in, the tables are often printed in

tiny fonts. Even with large fonts, the length of numbers makes it difficult for shoppers. Processing "12.34" requires more than double the effort to handle "12". (The decimal point is part of the problem.)

I believe that hyperdigitised numbers are misleading because 1) they claim accuracy that is not there; 2) the analytical methods employed provide only approximations to the food components purportedly measured.

Almost all food labels disregard biological variability, which is typically at least five percent. Other than near-pure chemicals like sugar and salt, most prepared foods are made from plants and animals that have different histories. What cultivar of wheat was used? Was the beef from a Friesian cow or another breed? What region? What soil type? Irrigated or dry-land? Many food labels state, with admirable honesty, that they represent indicative values based on averages. Unfortunately that doesn't mean any reduction in unjustifiable precision. My candidate for worst offender is a packet of delicious Vietnamese snacks, the label of which proclaims that sodium per biscuit is 14.22 mg. Western food manufacturers are not much better.

Table 3 shows part of a Nutrition Information table from a tin of imported luncheon meat:

Let me put energy values aside for just a moment, except to note that the calculated "259 Cal/100g" was almost surely provided by the same idiot nephew who worked on the science-fiction novel cited at the beginning of this article. Multiplying a value that is accurate to two places by a factor that is accurate to three or more places, does *not* provide a three-place result.

Protein

The standard way to measure protein is to digest foodstuff in boiling sulphuric acid (Kjeldahl analysis). This converts all nitrogenous chemicals into ammonia. The liberated ammonia is measured and that value multiplied by 6.25 is reported as "crude protein". Unfortunately, the correct multiplier depends on what's being analysed. Factors as low as 5.71 and as high as 7.69 may apply. (Hint: the factor is the inverse of the percentage N, which in turn is related to the amino acid composition of each protein.)

Component	Per 56 g serve (sic)	Per 100 g
Energy (kJ)	610	1089
Energy (Cal)	145	259
Protein (g)	5.0	8.9
Fat, total (g)	12.0	21.4
Carbohydrate, total (g)	4.2	7.5

Table 3. Luncheon meat nutrition information.

Many non-protein chemicals are converted to ammonia during the Kjeldahl procedure. That includes not only alkaloids and free amino acids, but also man-made chemicals like melamine. In any effort to improve precision of protein analysis, an erudite committee of nutritionists has recommended that proteins should be hydrolysed gently, so that individual amino acids can be measured. That route is not only more expensive than digestion but also opens a Pandora's box of complexity, because all proteins are *not* created equal. Proteins with lysine, methionine and perhaps threonine are more valuable for growing animals than other proteins. Do we need another data entry on the Nutritional Contents tables showing relative protein values for children as opposed to adults?

With all these uncertainties about protein analysis, even a two-digit claim of "8.9 g protein" seems unjustifiable. Who needs such precision? A nutritionist who relied on these numbers to formulate a patient's diet could be grossly misled. Consumers mostly need rough indications that a food is low, medium or high protein.

Carbohydrates

The FAO says that total carbohydrate can be estimated by difference, that is, everything left over once protein, fat, water, ash, and alcohol are subtracted. This is a friendly touch from the FAO. It allows 'carbohydrate' values that include fibre (polymeric carbohydrates) and organic acids.

Carbohydrates can be either soluble or insoluble, with starch the major insoluble material. If we consider only insoluble material, mostly it's starch and 'fibre'. Generally only starch is available for our nutrition, and then only after cooking, although heat may convert up to eight percent of total starch into indigestible 'resistant starch'.

Soluble carbohydrates include small sugars as well

as oligosaccharides, such as fructose-containing material from onions and artichokes. The latter are not utilised by the human body but rather by micro-organisms residing in our gut. Clearly, a simple chemical result of "7.5 g carbohydrate" is only a rough approximation to digestible carbohydrate.

Fat

For a change, measurement of fat as lipid-soluble material is straightforward. I'm not aware of any technical problems with estimates of saturated versus unsaturated fats. There are some issues about how mixtures of fats may not have the same digestibility as pure fats.

Energy

Strictly speaking, energy content should be measured by combustion of a sample of food, with another food sample being fed to someone who is willing to collect all his bodily excretions for the next day or so. Such volunteers are hard to find. Even the feedstuff people rarely use animal feeding studies, because they have equations that convert individual components into an estimate of digestible energy. For poultry, the formula is 0.34% x Fat + 0.16% x Protein + 0.13% x Sugars. It's obvious that any errors in measurement of fat, protein or sugar will affect the final energy values.

For people, similar formulas are available with 'Atwater' factors. There is a 'general' Atwater table and a 'Specific' table that tries to compensate for different ingredients. There's only a two percent difference when animal-based food values are crunched through the Atwater methods. For wheat flour the discrepancy is seven percent and for cabbage or snap beans 20 percent. How, then, can a claim of "1089 kJ" be justified for a food made from a mixture of ingredients?

My suggested version

In view of all the uncertainties, I'd suggest a major simplification of nutritional information tables. Shorter numbers would be comprehensible and readable, while the present over-long numbers are mind-numbing rather than informative.

So Table 4 has my version of what I'd like to see on the luncheon meat container:

Component	Per 56 g serve	Per 100 g
Energy (kJ)	600	1100
Energy (Cal)	150	250
Protein (g)	5	9
Fat, total	12	21
Carbohydrate, total	4	8

Table 4. Luncheon meat nutrition information, adjusted.

References

Mann, J. D. 1998: Feedstuffs of monogastric animals. NZ Institute for Crop and Food Research.

FAO "Methods of Food Analysis" **www.fao.org/DOCREP/006/Y5022E/y5022e03.htm**

Jay Mann is a plant biochemist and the author of How to Poison Your Spouse the Natural Way.

In an occasional feature we look back at issues from the early days of NZ Skeptic.

Twins, souls and abortion

I wonder if scepticism toward pseudoscience has any contribution to make to the abortion debate? The thought arises because the theory of L Ron Hubbard ... that foeti can hear and understand voices outside the mother and react to them, is clearly pseudoscientific. What about the theory of the anti-choice brigade that "the human being" comes into existence at the "moment" (now known to last hours) of conception? There is a *reductio ad adsurdum* of this view: while most conceptions go on to produce one individual, identical twins arise after at least one division of the zygote (fertilized ovum,), more hours after conception. Therefore, in the anti-choice view, twins and other multiple births comprise only one "human being". If that were the case, the Auckland doctors recently faced with the decision whether to separate conjoined twins should have had no hesitation in sacrificing one of the twins: only one "human being" had come into existence at conception, and they would have merely been restoring the status quo. ... What most anti-choice people really believe, but never say in the abortion debate, is that a supernatural entity called "the soul" is infused into the foetus at the "moment" of conception, and it is this that makes it human...

H Young, NZ Skeptic 14, August 1989.

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That time of year again

Once again, the annual NZ Skeptics Conference is coming up, and this year it's in Wellington.

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