

*Skeptic*

*a person in a state of terminal caution*

*Margaret Mahy*

The psychology of belief  
Chiropractic yesterday and today  
Unfortunate experiment Part 3  
Creationism in schools

# new zealand Skeptic

number 98 – summer 2011

[www.skeptics.org.nz](http://www.skeptics.org.nz)

Modern Version

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ISSN - 1172-062X

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#### Deadline for next issue:

**March 10 2011**

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

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# Another candle goes out...

WE'VE lost another light against the darkness, with the death of Denis Dutton. Carl Sagan, in *The Demon-Haunted World*, gave us the image of the guttering candle, but I think Denis would be the first to cite another comment from that work: "It's better to light a candle than to curse the darkness."

Denis was a founder-member of NZ Skeptics. For many years he was the face of organised scepticism in New Zealand, fronting up to the media with many a pithy comment and a wry sense of humour. In recent years, we haven't seen a great deal of Denis, once a major driver at conferences and meetings. He was a man of many enthusiasms, but at the heart of almost all of them was the desire to get people to think about the world, and to be better informed. That was at the core of his involvement with the Skeptics, and it also informed his development of the hugely influential website *Arts & Letters Daily*. You could see that in his published works, whether the academic discourse in the journal *Philosophy and Literature*, or in the discussion of how our evolution has influenced our aesthetic appreciation in his ground-breaking book *The Art Instinct*.

We often talk of a person being larger than life, but if ever a person fitted that description it was Denis. I first met him when I was assigned to cover the NZ Skeptics conference in Christchurch in the early 1990s. He was busy raking hot coals preparing to convince people that they really could walk on fire. A few years later, he nominated me to head this organisation.

Denis, like most skeptics, was willing to keep an open mind. He was intrigued enough by Paddy Freaney's alleged moa sighting to arrange for us to hear from Paddy and his off-siders – the only group to do so. I remember early morning debates about whether the apparent nano-bacteria in the Martian meteorite were really evidence of alien life. Denis stepped up to the plate when the repressed memory craze hit New Zealand, and dealt carefully and sensitively with masses of correspondence from all over the country on that.

Most of all, I associate Denis with laughter – not scornful, nor dismissive, but rather his genuine delight in the wonder and absurdity of the human condition. He challenged me, and others, to critically evaluate what we think we know, to be prepared to suspend judgement when evidence is lacking, and to have the strength to acknowledge when we'd got things wrong. Denis had a deeply moral sense in that he abhorred the exploitation we so often see underpinning skeptical issues. He reserved his scorn for the shysters willing to exploit vulnerable people for their own gain. Like many people here and around the world, I will miss him hugely. He changed my life, for the better.

**Vicki Hyde**

# Yet more reasons why people believe weird things

**Brittany Cardwell, Jeffrey Foster, and Eryn Newman**

*Research at Victoria University of Wellington is shedding light on the often irrational processes by which people assess new information. This article is based on presentations to the 2010 NZ Skeptics conference.*

**J**ACQUI Dean was alarmed. The Otago MP had received an email reporting the deaths of thousands of people – deaths caused by the compound dihydrogen monoxide. Dihydrogen monoxide is commonly used as an industrial solvent and coolant, it is fatal if inhaled, and is a major component of acid rain (see [dhmo.org](http://dhmo.org) for more facts about dihydrogen monoxide). Only after she declared her plans to ban dihydrogen monoxide did she learn of its more common name: water (NZ Herald, 2007).

Ms Dean's honest mistake may be amusing, but when large groups of people fail to correctly assess the veracity of information that failure can have tragic consequences. For example, a recent US survey found 25 percent of parents believe that vaccines can cause autism, a belief that may have contributed to the 11.5 percent of parents refusing at least one recommended vaccine for their child (Freed et al, 2010).

Evidence from experimental research also demonstrates the mistakes people can make when evaluating information. Over a number of studies researchers have found that people believe:

- that brand name medication is more effective than generic medication;
- that products that cost more are of higher quality;

currency in a less familiar form – eg, a dollar coin (Alter & Oppenheimer, 2008; for a review, see Rao & Monroe, 1989).

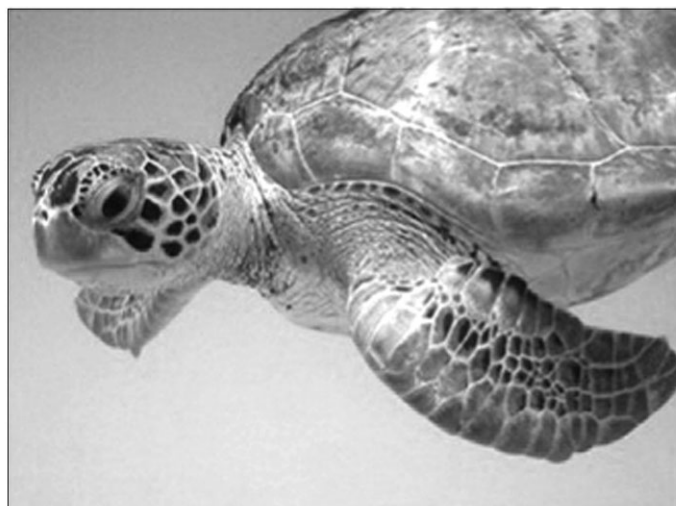
Why is it that people believe these weird things and make mistakes evaluating information?

Usually people can evaluate the veracity of information by relying on general knowledge.

But when people have little relevant knowledge they often turn to feelings to inform their decisions (eg Unkelbach, 2007). Consider the following question: Are there more words in the English language that start with the letter K or have K in the third position? When Nobel prize winner Daniel Kahneman and his colleague Amos Tversky (1973) asked this question most people said there are more words that start with the letter K. And they

were wrong. People make this error because words that start

## Turtles are deaf



**In the absence of relevant knowledge, a photo can make a statement seem more credible even though it may supply no additional information.**

- and that currency in a familiar form – eg, the US dollar bill) is more valuable than



with the letter K, like kite, come to mind more easily than words that have a K in the third position, like acknowledge, so they judge which case is true based on a feeling – the experience of ease when generating K examples.

Generally speaking, information that is easy to recall, comprehend, visualise, and perceive brings about a feeling of fluent processing – the information feels easy on the mind, just like remembering words such as kite (Alter & Oppenheimer, 2009). We are sensitive to feelings of fluent processing (fluency), and we use it as a cue to evaluate information. For example, repeated information feels easy to bring to mind, and tends to be judged as more true than unrepeated information; trivia statements written in high colour contrast (**Osorno is the capital of Chile**) are easier to perceive and are judged as more true than statements written in low colour contrast (*Osorno is the capital of Chile*); and financial stocks with easy to pronounce ticker symbols (eg KAR) outperform those with difficult to pronounce ticker symbols such as RDO (Alter & Oppenheimer, 2006; Hasher et al, 1977; Reber & Schwarz, 1999).

Most of the time, fluently processed information is evaluated more positively – we say it is true, we think it is more valuable. And on the face of it, fluency can be a great mental shortcut: decisions based on fluency are quick and require little cognitive effort. But feelings of fluency can also lead people

to make systematic errors. In our research, we examine how feelings of fluency affect beliefs, confidence, and evaluations of others. More specifically, we examine how photos affect people's judgements about facts; how repeated statements affect mock-jurors' confidence; and how the complexity of a name affects people's evaluations of that person.

### Can decorative photos influence your beliefs about information?

If we told you that the Barringer Crater is on the northern

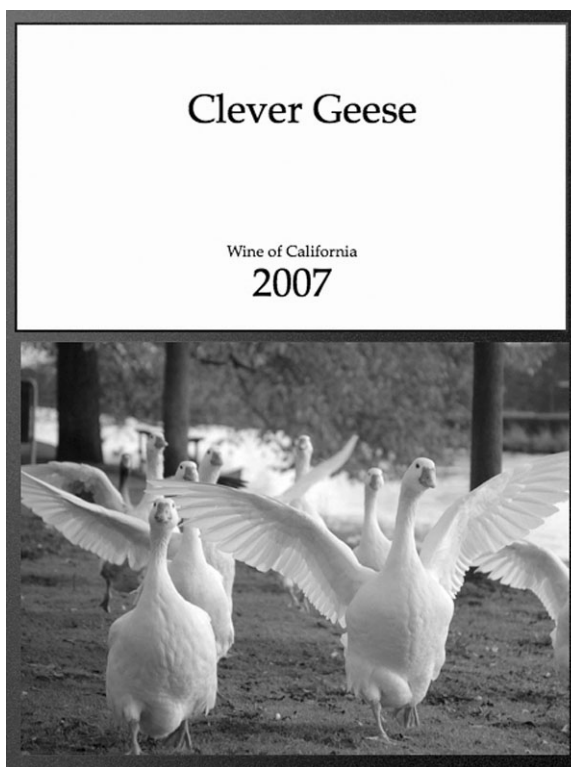
of the Barringer Crater (which is in fact in Arizona) – you probably wouldn't expect it to influence your beliefs about the statement.

Yet, evidence from fluency research suggests that in the absence of relevant knowledge, people rely on feelings to make decisions (eg Unkelbach, 2007). Thus, not knowing what the Barringer Crater is or what it looks like, you might turn to the photo when considering whether the statement is true. The photo might bring about feelings of fluency, and make the statement seem more credible by helping

you easily picture the crater and bring to mind related information about craters – even though this would still give you no objective information about where the crater is located. In our research, we ask whether decorative photos can lead people to be more willing to believe information.

### How did we answer our research question?

In one experiment, people responded true or false to trivia statements that varied in difficulty: some were easy to answer (eg, Neil Armstrong was the first person to walk on the moon), some were more difficult (eg, Turtles are deaf). Half of the time, statements were paired with a related photo (eg, a turtle). In a second study, people evaluated wine labels and guessed whether each of the wine labels had won a medal. We told people that the wine companies were all based in California. In fact, we created all of the wine names by pairing



**Made-up wine names are more likely to be judged as medal-winners when accompanied by a photo - but only when the words in the names are relatively unfamiliar.**

hemisphere of the moon, would that statement be more believable if we showed you a photo of the Barringer Crater? Because the photo is purely decorative – that is, it doesn't actually tell you anything about the location

an adjective (eg, Clever) with a noun (eg, Clever Geese). Some of the wine labels contained familiar nouns (eg, Flower) and some contained unfamiliar nouns (eg, Quills). Half of the wine labels appeared with a photo of the noun.

### **What did we find?**

Overall, when people saw trivia statements or wine names paired with photos, they were more likely to think that statements were true or that the wines had won a medal. However, photos only exerted these effects when information was difficult – that is, for those trivia statements that were difficult to answer and wine names that were relatively unfamiliar. Put more simply, decorative photos can lead you to believe claims about unfamiliar information.

### **Is one eyewitness repeating themselves as believable as three?**

If you were a juror in a criminal case, you would probably be more willing to convict a man based on the testimony of multiple eyewitnesses, rather than the testimony of a single eyewitness. But why would you be more likely to believe multiple eyewitnesses? On the one hand, you might think that the converging evidence of multiple eyewitnesses is more accurate and more convincing than evidence from a single eyewitness, and indeed, multiple eyewitnesses are generally more accurate than a single eyewitness (Clark & Wells, 2008).

On the other hand, as some of the fluency research discussed earlier suggests, you may be

more likely to believe multiple eyewitnesses simply because hearing from multiple eyewitnesses means hearing the testimony multiple times (Hasher et al, 1977). Put another way, it may be the repetition of the testimony, rather than the number of independent eyewitnesses, that makes you more likely to believe the testimony. In our research, we wanted to know whether it is the overlap of statements made by multiple eyewitnesses or the repetition of those statements that makes information more believable.

### **How did we answer our research question?**

We asked subjects to read three eyewitness reports about a fictitious crime. We told half of the subjects that each report was written by a different eyewitness, and we told the other half that all three reports were written by the same eyewitness. In addition, half of these subjects read some specific claims about the crime (eg, The thief read a *Newsweek* magazine) in one of the eyewitness reports, while the other half read those same specific claims in all three reports. Later, we asked subjects to tell us how confident they were that certain claims made in the eyewitness reports really happened during the crime (eg, How confident are you that the thief read a *Newsweek* magazine?).

### **What did we find?**

This study had two important findings. First, regardless of whether one or three different eyewitnesses ostensibly wrote the reports, subjects who read claims repeated across all

three reports were more confident about the accuracy of the claims than subjects who read those claims in only one report. Second, when the claims were repeated, subjects were just as confident about the accuracy of a single eyewitness as the accuracy of multiple eyewitnesses. These findings tell us that repeated claims were relatively more fluent than unrepeated claims – making people more confident simply because the claims were repeated, not because multiple eyewitnesses made them.

### **Would a name influence your evaluations of a person?**

Your immediate response might be that it shouldn't – people's names provide no objective information about their character. We hope that we make decisions about others by recalling information from memory and gathering evidence about a person's attributes. Indeed, research shows that when we have knowledge about a topic, a person or a place, we do just that – use our knowledge to make a judgement – and we can be reasonably accurate in doing so (eg, Unkelbach, 2007).

But when we don't know a person and we can't draw on our knowledge, we might be influenced by their name. As we have described, when people cannot draw on memory to make a judgement, they unwittingly turn to tangential information to make their decisions. Therefore, when people evaluate an unfamiliar name, tangential information, like the complexity of that name, might influence their judgements. More specifically, we thought that unknown names that were phonologically simple



– easier to pronounce – would be judged more positively on a variety of attributes than names that were difficult to pronounce.

### How did we answer our research question?

We showed people 16 names gathered from international newspapers. Half of the names were easy to pronounce (eg, Lubov Ershova), and half were difficult to pronounce (eg, Czeslaw Ratynska). We matched the names on a number of factors to make sure any differences we found were not due to effects of culture or name length. So for example, people saw an easy and difficult name from each region of the world and names were matched on length. Across three experiments, we asked subjects to judge whether each name was familiar (Experiment 1), trustworthy (Experiment 2), or dangerous (Experiment 3).

### What did we find?

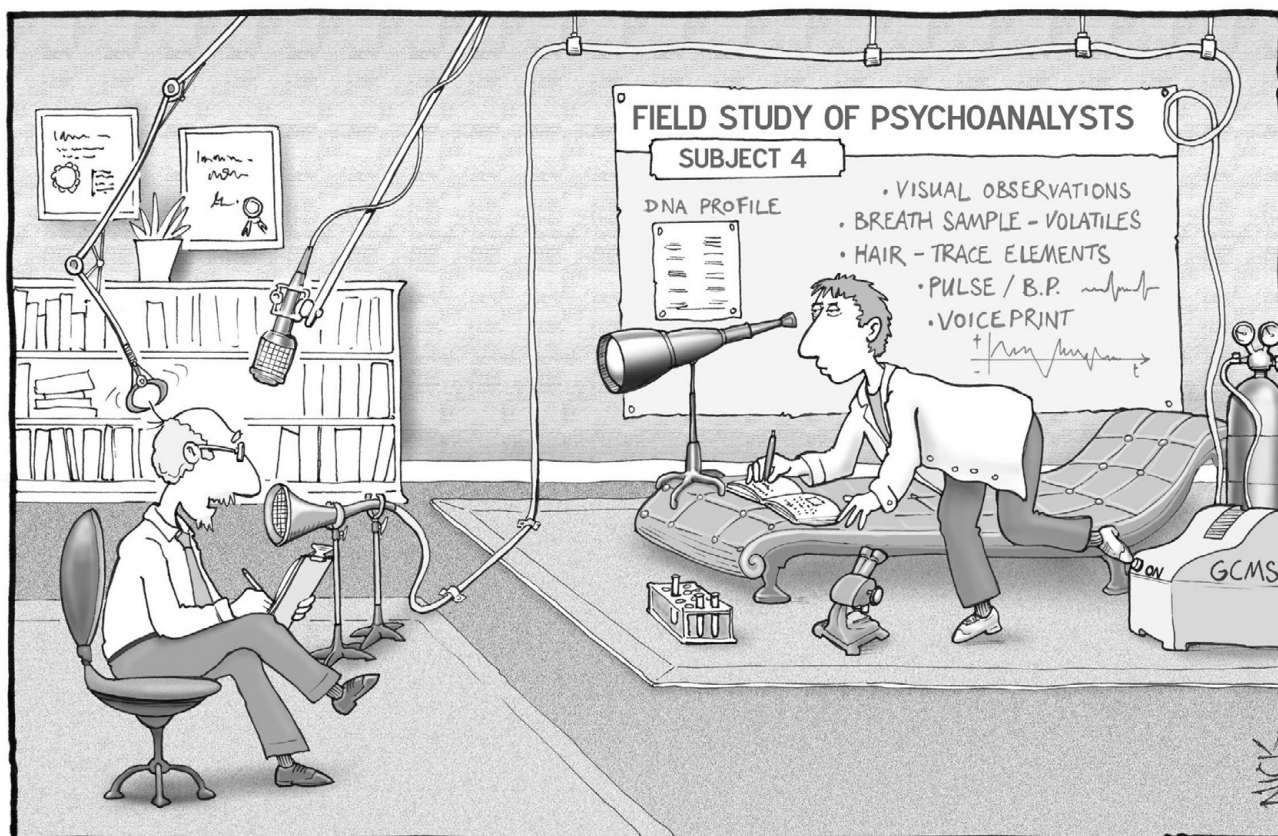
Although the names were not objectively different from each other on levels of familiarity, trustworthiness, or danger, people systematically judged easy names more positively than difficult names. Put another way, people thought that easy-to-pronounce names were more familiar, more trustworthy, and less dangerous than difficult-to-pronounce names. So although we would like to think we would not evaluate a person based on their name, we may unwittingly use trivial information like the phonological complexity of a name in our judgements.

### Conclusions

Why is it that people believe these weird things and make mistakes when evaluating information? Our research suggests that decorative photos, repetition

of information, and a person's name all influence the way people interpret information. More specifically, decorative photos lead people to think information is more credible; repetition leads mock-jurors to be more confident in eyewitness statements – regardless of how many eyewitnesses provided the statements; and an easy-to-pronounce name can lead people to evaluate a person more positively.

Relying on feelings of fluency can result in sensible, accurate decisions when we are evaluating credible facts, accurate eyewitness reports, and trustworthy people. But the same feelings can lead people into error when we are evaluating inaccurate facts, mistaken eyewitnesses, and unreliable people. More specifically, feelings of fluency might lead us to think false facts are true, be more confident in



*"So when did you first realize that you might be a scientist..?"*

inaccurate eyewitness reports, and more positively evaluate an unreliable person.

A common finding across our studies is that the effect of fluency was specific to situations where people had limited general knowledge to draw on. In the real world, we might see these effects even when people have sufficient knowledge to draw on. That is because we juggle a lot of information at any one time and we do not have the cognitive resources to carefully evaluate every piece of information that reaches us – as a result we may turn to feelings to make some decisions. Therefore it is inevitable

that we will make at least some mistakes. We can only hope that our mistakes are comical rather than tragic.

**Brittany Cardwell, Jeffrey Foster and Eryn Newman are PhD students at Victoria University of Wellington in the School of Psychology. The authors thank Professor Maryanne Garry for her invaluable guidance and her inspiring mentorship on these and other projects.**

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# Manipulation, chiropractic, and the idols of Francis Bacon

**Martin Wallace**

*Chiropractic has had a colourful history since its invention in the 19th Century.*

**C**HIROPRACTIC has had an extraordinary history, but the vehement response of its practitioners to criticisms of its claims is nothing if not human. These unwelcome aspects of human behaviour – a readiness to believe and a violent reaction to well-founded criticism – were recognised and categorised by Francis Bacon 400 years ago.

Chiropractic has been defined as “a system of treating bodily disorders by manipulation

of the spine and other parts”.<sup>1</sup> The Oxford English Dictionary gives a number of meanings for manipulation, including “The act of operating upon or managing persons or things with dexterity, especially with disparaging implications, unfair management or treatment”. Manipulate, among other meanings, is “to manage by dexterous contrivance or influence, especially to treat unfairly or insidiously for one’s own advantage”.

[Until 1818 English dictionaries gave only one meaning for manipulation: the method of digging for silver ore.]

The practice of chiropractic began in the US in 1885. It is one of a number of strange behaviours and belief systems which have had their origins in that country, including osteopathy, craniosacral manipulation, applied kinesiology, scientology, creationism science, Christian Science, and Mormon beliefs.



country too that homeopathy received its greatest support after its invention in Europe. Why this should have happened is an interesting question. An American friend says that it springs from an overwhelming desire to avoid the perceived errors of Europe with its suppression of religious freedom.

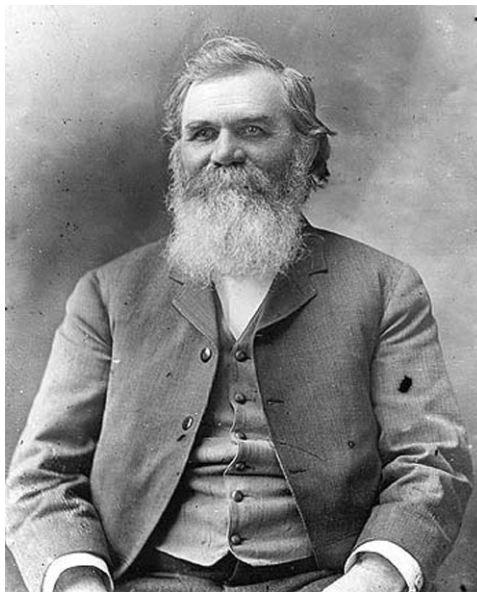
David Daniel Palmer was born in Ontario in 1845, and brought his family to the US where by 1865 they were living in Davenport, Iowa. He was a grocer, and a bee-keeper, and had a deep interest in spiritualism. He practised 'magnetic healing' and called himself 'Doctor'.<sup>2, 3, 4</sup>

He later said that the idea of chiropractic came to him as 'received wisdom' at a séance in 1885, from a certain Dr Jim Atkinson, deceased at that time. Shortly after this, on 18 September, 1885, he treated a man who had been deaf for 17 years. He said: "I examined him and found a vertebra racked from its normal position – I racked it into position by using the spinous process as a lever, and soon the man could hear as before." He went on: "There was nothing crude about this adjustment; it was specific, so much so that no chiropractor has equalled it".

Palmer called the spinal irregularity he had found a "subluxation", a term borrowed from orthodox medicine where it means a partial dislocation of a joint. Only chiropractors can find, feel, or see their patients' abnormalities, which they proceed to correct.

Palmer decided there must be a single cause for all diseases:

"I then began a systematic investigation for the cause of all diseases and have been amply rewarded." He had a friend coin the word 'chiropractic' from the Greek 'cheir', hand, and 'praxis', action. He said that the free flow of the body's 'innate intelligence' (or 'psychic energy') to all parts of the body was interrupted by spinal vertebral subluxations, and this was the cause of 95 percent of all illnesses.



**David Daniel Palmer, founder of chiropractic.**

He said: "I occupy in chiropractic a similar position to Mrs [Mary Baker] Eddy in Christian Science. Mrs Eddy claimed to receive her ideas from the other world and so do I. I am the fountainhead."

Palmer was hugely successful. In 1897 he opened the 'Palmer School of Care' in Davenport. Admission was by payment of tuition fees and no other qualification. In 1905 it was renamed 'The Palmer School of Chiropractic' and it has gone on to occupy a large campus on what

is now called Palmer's Hill, in Davenport.

His son, Bartlett Joshua ('BJ'), took over the business in 1906, while his father was in prison for practising osteopathy and medicine without a licence. DD and BJ fell out and DD opened a rival school.

By 6 August 1908, the US congress was considering a bill to regulate the practice of chiropractic and to licence chiropractors.

David Daniel Palmer died in 1916 a short while after being run over by BJ in an automobile. The death certificate said 'typhoid fever'.

Bartlett Joshua Palmer made a fortune, and promoted chiropractic in Canada, Australia, and the United Kingdom. He stressed salesmanship as he taught, and his classrooms were decorated with such slogans as:

"The world is your cow, but you must do the milking" and

"Early to bed and early to rise, work like hell and advertise".

BJ marketed a patented machine called the Neurocalometer which he said could detect subluxations, whether or not the patient had symptoms. It is still sold today as the Nervoscope and costs about \$US799.

BJ founded a radio station, WOC (Wonders of Chiropractic) in 1924.

In 1926, HJ Jones in *Healing by Manipulation* stated there were more than 8000 chiropractors in the US and Canada.



BJ died a multimillionaire in 1961.

This story is one of extremely successful entrepreneurship in the best tradition of American showmanship. It has nothing to do with science, and a lot to do with evangelical know-how.

In 2007 there were 19 colleges of chiropractic in the US, two in the UK, at least one in Australia and one in New Zealand.

Repeated examinations of x-rays, MRI scans and autopsy material have failed to show any evidence for existence of the 'subluxation complex'. The American Association of Chiropractic Colleges states that "the subluxations are evaluated, diagnosed, and managed through the use of chiropractic procedures".

Because of Palmer's initial dogma, many chiropractors reject the role of infectious agents in disease and hence deny the value of vaccination.<sup>5</sup> Chiropractic neck manipulation is associated with an increased risk of vertebro-basilar vessel damage.<sup>6</sup> Chiropractors insist on spine x-rays even when the risk of unnecessary exposure to radiation is raised, and this despite the absence of x-ray changes consistent with a 'subluxation'.

A careful examination of all the scientific evidence<sup>7</sup> has resulted in the conclusion that chiropractic offers some help for low back pain but otherwise has no more effect than that of a placebo for any other complaint.

In 1999 an American chiropractor, Samuel Homola, published *Inside Chiropractic: a Patient's Guide*<sup>8</sup>. He supported manipulation for back pain,

but rejected what he described as chiropractic dogma. He confirmed that the chiropractic profession had little tolerance of dissent.

"Its nonsense remains unchallenged by its leaders, and has not been denounced in its journals. Although progress has been made, the profession still has one foot planted lightly in science, and the other firmly rooted in cultism."

He was labelled a 'heretic' by his colleagues.

Some commentators divide chiropractors into 'straight' dogmatists and 'mixers' who will use some science.

### **Chiropractors and defense by legal action: the American Medical Association Saga**

In the US, doctors encouraged the arrest of chiropractors for practising medicine without a licence. By 1940 it is said that 15,000 prosecutions had been brought. However 80 percent of these had failed, with the United Chiropractors' Association, encouraged by BJ Palmer, giving financial support to the defendants.

The AMA Committee on Quackery lobbied in 1963 to have chiropractors relegated to a non-medical status. The committee argued that chiropractic should not be recognised by the US Office of Education, citing the lack of scientific evidence, the denial of germ theory, the claim to be able to treat 95 percent of all diseases, and the use of the 'E-meter'.

In 1976 the Chiropractors' Association, having become aware of further action planned by the

AMA, brought a suit against the association on the grounds that it planned to limit chiropractors' practice, and this was in breach of anti-trust legislation as it was anti-competitive.

In 1987 the Court found in favour of the chiropractors, and an appeal by the AMA in 1990 failed.

The chiropractors had shifted the issue from science to rights of commercial practice. This was totally in keeping with their history of astute business acumen – and lack of scientific evidence.

### **The 1978 NZ Royal Commission of Inquiry into Chiropractic**

In a context of legal and political mechanisms, the NZ Chiropractors' Association with its supporters, and the NZ Medical Association and its supporters, battled for and against official recognition of chiropractic as a national health resource, and the access of its practitioners to the rewards from the Accident Compensation scheme.

The chiropractors bolstered their position with hundreds of letters to the commission from satisfied customers, and the NZMA responded by scathing and dismissive comments as to the worth of such letters, and by decrying the lack of science in the practice of chiropractic.

Kevin Dew<sup>9</sup> suggests that the result was a negotiated settlement exchanging a proposal by chiropractors to restrict their practice to musculoskeletal conditions, in return for official Government recognition, and the addition of

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## Quake wakes up spooks

**A** CHRISTCHURCH paranormal investigator says Canterbury's September 4 earthquake has more than doubled the number of reported supernatural events in the province (The Press, 8 November).

Anton Heyrick says his team, Christchurch Paranormal Investigators, had received an "interesting influx" of phone calls and emails. "People are calling us, saying that they had always felt like there was something in the house, but since the earthquake it had become more intense," he said. He attributed this to the "sheer strength and power" of the earthquake.

Heyrick said it was well known among investigators that renovations tended to wake up dormant spirits in old buildings.

"With the earthquake, it literally smashed walls apart, and knocked down floors and ceilings, so you can imagine the effect that would have had."

The team, which did not charge for its services, had conducted two full investigations, and was planning to do more.

NZ Skeptics chairman Gold (whose own residence was damaged in the quake) said the reports may have been due to "people's minds playing tricks on them in the post-quake environment".

"You may not feel an after-shock, but it will still make things rattle. People's minds fill in the blanks, and they tend to

fill in the blanks with fairytales, unfortunately."

### UFO files released

The NZ Defence Force did a huge favour for newspaper editors all over the country by releasing 2000 pages of formerly secret reports on UFOs just in time for the silly season.

Though some have tried to talk the reports up, it's clear there's very little in them. Says the Southland Times in an editorial (29 December), "the case most likely to attract attention – and we say this with all due respect to the Christchurch man who submitted 300 pages outlining two decades of contact with aliens – are the Kaikoura lights of 1978".

The Kaikoura Star (29 December) noted that the air force report at the time concluded almost all the sightings could be accounted for by natural phenomena, but also recounted other UFO incidents in the area. On 13 July 1959, for example, Blenheim farmer Eileen Moreland was getting the cows in when she noticed a green light above her in the clouds. Soon an oval-shaped UFO with two green beams of light and "fiery orange jets" settled above her, enveloping her in a "peculiar green glow". She claims to have seen two men inside the craft, dressed in "silvery, shiny suits from the waist upwards" and with headgear "like divers' helmets which glittered very brightly".

In a separate Kaikoura Star item the same day, local butcher Alan Hickey relates how he often travelled the coast road in 1978, and noted the bright squid boat lights on the horizon. "It made me laugh [when it was reported]. I thought, ah, it's those squid boats."

### Psychic 'predicts' Lotto win

A psychic's prediction that "something great" was going to happen in November has supposedly been "proved accurate" after a Napier family's big Lotto win (Otago Daily Times, 17 November).

"We had no idea that it would be a \$2 million Lotto win," said a family member. No, and neither did the psychic.

### Hunt on for yeti remains

An Air New Zealand pilot and mountaineer is leading a different kind of yeti hunt (Sunday News, 5 December).

Mike Allsop hopes to track down a "skull" and skeletal hand, said to be from a yeti, stolen from the Pangboche monastery in the 1990s. Weta Workshop has produced replicas of the missing items which he plans to hand-deliver to the monastery in April to help searchers find the originals.

"I am hoping that the person who has them wants to give them back ... I will go anywhere in the world in person, free of charge, no questions asked and I will also buy them a beer."

The article says the material came to international prominence when Texan oil magnate Tom Slick (a case of nominative determinism?) photographed them in 1957. Two years later one of his team returned to the monastery and reportedly stole bone fragments from the hand. These were allegedly smuggled back to the US by “a Hollywood star” – named as James Stewart by Wikipedia. The remaining items were stolen in 1999.

Left unsaid is that the “skull” – more commonly referred to as a scalp – was allowed out of Nepal in 1957 and examined at the British Museum, where it was determined to be moulded from the shoulder skin of a serow, a species of Himalayan goat-antelope. Photos of the hand look equally dubious – it seems to have kneecap-like bones at the knuckles, and to lack any wristbones.

### **Acupuncture good for lazy eyes?**

A trial of acupuncture to treat lazy eye has offered cautious support to the traditional Chinese medical practice (Reuters, 18 December).

Dr Robert Ritch of the New York Eye and Ear Infirmary and Chinese colleagues studied 18 Chinese children with lazy eye, also known as amblyopia, aged between seven and 12. They randomly assigned about half of them to wear a patch over their good eye for two hours every day, and the rest to attend five acupuncture sessions weekly; both treatments continued for up to 25 weeks. All children were

also given new glasses and asked to perform an hour of daily near-vision activities.

At the end of the 25 weeks at least seven out of 10 children in each group had their lazy eye’s sight improve by at least two lines on an eye chart. Forty-two percent of children receiving acupuncture overcame the condition compared to 17 percent of those who wore eye patches.

The University of Rochester’s Dr Matthew Gearinger, however, cautions that the number of children studied was small. And “it is a lot to ask parents to drive to a local acupuncturist five days a week, rather than just using drops or a patch at home.”

Michigan internist Dr Peter Lipson noted that everyone knew who got what treatment, and that without an untreated group the study couldn’t rule out the possibility that not doing anything, or simply using corrective glasses and performing daily exercises, would work just as well.

“This is not, in my opinion, evidence toward acupuncture being as good as standard care, only that in this particular study children did about the same if they received standard care or non-standard care. It says nothing at all about acupuncture.”

### **Exorcists wanted**

Roman Catholic bishops have held a special training workshop in Baltimore to help alleviate a serious shortage of exorcists (Reuters, 14 November).

The church currently has only five or six American exorcists on its books, but signed up 56

bishops and 66 priests for the two-day event. “There’s this small group of priests who say they get requests from all over the continental US,” said Bishop Thomas Paprocki of Springfield, Illinois. “Actually, each diocese should have its own [exorcist].”

He did not say why there was increased demand for exorcisms, which he noted were rarely performed.

Possible signs of demonic possession referred to in the article include scratching, cutting, or biting of the skin; profound displays of strength; and a strong or violent reaction to holy water. Nothing about projectile vomiting or heads turning 360 degrees.

### **Another Kentucky creationist theme park**

Just when you thought Kentucky couldn’t make itself more of a laughing stock comes word that plans are afoot to build (or rebuild, according to Ken Ham of the nearby Creation Museum) a full-sized replica of Noah’s Ark in the state (Dominion Post, 11 December).

The ark is to be the centrepiece of a \$150 million park, to be known as Ark Encounter. Due to open in 2014, it will also feature live stage shows, a petting zoo and a Tower of Babel.

Despite claims the park will further tarnish the state’s reputation, Governor Steve Beshear has promised \$40 million in tax breaks for the project. “Bringing new jobs to Kentucky is my top priority,” he said.



## From Page 9

chiropractic to New Zealand's health resources.

The controversy was resolved without any resolution as to the scientific validity of the claims of chiropractic. It was thought there were only 100 chiropractors in New Zealand at that time.

Recent publications<sup>6</sup> show that the majority of chiropractors in the English-speaking world continue to make claims for their treatment which extend well beyond the realm of musculoskeletal disorders.

There were 391 chiropractors advertising in the Yellow Pages in New Zealand in August, 2010.

### Simon Singh and the British Chiropractors' Association

In 2008, Simon Singh and Edzard Ernst published a book called *Trick or Treatment*.<sup>7</sup>

On 19 April 2008, Singh wrote an article in *The Guardian*, pursuing the topic canvassed in the book, that chiropractic was alternative medicine and there was no evidence for any effect except on lower back pain.

"The British Chiropractors' Association claims that their members can help treat children with colic, sleeping and feeding problems, frequent ear infections and prolonged crying even though there is not a jot of evidence. This organisation is the respectable face of the chiropractic profession, yet it happily promotes bogus treatments".

The BCA quickly sued him for libel, and on 7 May 2009 the court handed down a verdict in favour of the chiropractors.

## Meanwhile in New Zealand

On 25 July 2008, the NZ Medical Journal published a paper by Andrew Gilbey reporting evidence that some chiropractors in NZ were using the title 'Doctor' in a manner which could mislead the public. In the same issue an editorial by David Colquhoun appeared, critical of chiropractic, and the qualifications of its practitioners. He wrote:

"For most forms of alternative medicine, including chiropractic and acupuncture the evidence is now in. There is now better reason than ever before to believe that they are mostly elaborate placebos, and at best are no better than conventional treatment."

In the next issue of the NZMJ the editor published a letter from a lawyer, Paul Radich, representing the NZ Chiropractors' Association, threatening legal action under the NZ Defamation Act, against the journal, Gilbey, and Colquhoun. The letter demanded apologies from all parties, and outlined the financial penalties for all.<sup>10</sup> The tone was intimidatory.

In his comments about the position of the NZMJ as a scientific publication, the editor, Frank Frizelle, invited the chiropractors to an evidence-based debate with these words: "Let's hear your evidence, not your legal muscle".

The NZMJ published an invited response from the NZ College of Chiropractic in its next issue<sup>11</sup> and I understand there has been no further correspondence from the lawyer (personal communication from the editor, NZMJ, September 2010).

## Back to London

A month after the initial court procedure in London, Simon Singh announced his intention to appeal the finding in favour of the BCA.

On 1 April 2010 the Appeal Court handed down its verdict. The Lord Chief Justice of England and Wales, The Master of the Rolls, and Lord Justice Sedley stated that Singh's comments were not libellous, and that they were matters of opinion backed by evidence. They went on to quote an American judge, Judge Easterbrook, now Chief Justice of the US 7th Circuit Court of Appeals.

In *Underwager v Salter* 22 Fed.3d 730 (1994):

"Plaintiffs cannot, by simply filing suit and crying 'character assassination' silence those who hold divergent views, no matter how adverse those views may be to the plaintiff's interests. Scientific controversies must be settled by the methods of science, rather than by the methods of litigation. More papers, more discussion, and more satisfactory models – not larger awards of damages – mark the path toward superior understanding of the world around us."

## Back to New Zealand

As it happens, nine days after Singh's appeal was upheld, Ernst and Gilbey authored a paper in the NZMJ: "Chiropractors' Claims in the English-speaking World".<sup>5</sup> They examined 200 individual chiropractors' websites and nine chiropractic association sites in Australia, Canada, New Zealand, the UK and the US. They concluded:

“The majority of chiropractors and their associations in the English-speaking world seem to make claims which are not supported by sound evidence. We suggest the ubiquity of the unsubstantiated claims constitutes an ethical and public health issue.”

On 11 June 2010, Shaun Holt and Andrew Gilbey wrote a letter to the editor of the NZMJ<sup>12</sup> drawing attention to the wider public scrutiny of chiropractic claims and nature following the success of Simon Singh’s appeal.

### Francis Bacon and his ‘idols’

Francis Bacon (1561–1626) lived at a time when the new empiricism was disturbing the security and comfort taken in accepting the opinions of established authorities. He was a lawyer, a legal theorist, a judge, and a writer. He became Lord Chancellor, but was charged by Parliament with corruption, and having taken bribes from those appearing before him in court. He pleaded guilty and wrote: “I was the justest judge that was in England these fifty years, but it was the justest censure in Parliament these two hundred years.”<sup>13</sup>

Bacon wrote a series of ‘Axioms’ towards the end of his life. I would like to use some of these to examine aspects of human behaviour that the history of chiropractic reveals. It has been a considerable surprise to me to realise the prescience of this man.

He used the term ‘idols’ to list aspects of human behaviour.

### Axiom 41: “The Idols of the Tribe”

These have their foundation in human nature itself.

“For it is a false assertion that the sense of man is the measure of things. On the contrary, all perceptions, as well of the sense as of the mind, are according to the measure of the individual, and not according to the measure of the universe.”

We are all subject to our nature, and seek security and certainty, and believe the evidence

of our eyes. If we get better after manipulation, then clearly the manipulation made us better. Emma Young says: “We are causal determinists – we assume that outcomes are caused by preceding events”.<sup>14</sup>

### Axiom 42: “The Idols of the Cave”

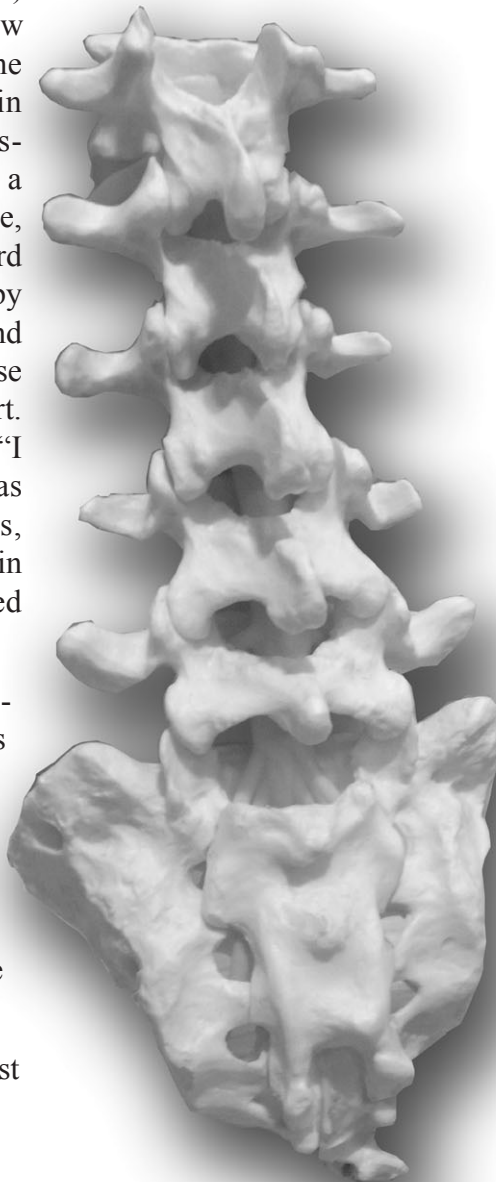
These are the idols of the individual man, due to our own peculiar natures, our education, our own experiences, or to reading from authorities we admire. “The spirit of man is in fact a thing variable and full of perturbation”. If we are told by our parents or teachers that someone else is better after manipulation, then we will believe that it is a ‘true’ relationship.

### Axiom 43: “The Idols of the Marketplace”

“Formed by the intercourse and association of men with each other. For it is by discourse that men associate, and words are imposed according to the apprehension of the common understanding. The ill and unfit choice of words wonderfully obstructs the understanding. Words plainly force and overrule the understanding, and throw all into confusion and lead men away into numberless empty controversies and idle fancies.”

The choice of the word ‘subluxation’ for example, to describe an undemonstrable change! Or the claim for the existence of ‘psychic energy’. A radio station extolling the “Wonders of Chiropractic” is a wonderful Idol of the marketplace.

To take legal action and gain the publicity which is sure to follow with extensive argument



about the meaning of, for example, 'happily' has great appeal in the marketplace.

#### Axiom 44: "The Idols of the Theatre"

"Which have migrated into men's minds from various dogmas, and the wrong laws of demonstration. All the received systems are but so many stage plays – many more plays of the same kind may yet be composed."

How well aware of this human trait are all showmen and charlatans. The Palmers, father and son, exploited this behaviour. To claim that new knowledge has come from beyond the grave is wonderful 'theatre', full of drama and mystery. To maintain the dogma of the wonderful in the face of evidence to the contrary is so much easier than to examine the evidence.

All these human behaviours can be seen in the history of chi-

ropractic, and in so many other catastrophes such as the anti-vaccination campaign, the Peter Ellis trial, the Cartwright affair, the anti-fluoridation campaign and so on and on.

The history of chiropractic, and the response of chiropractors to criticism about the absence of science in their beliefs, illustrate the profound insights of Francis Bacon about our nature. It is our nature which results in the persistence of the perverse, and which resists the truth.

The responses of those without objective evidence for their personal beliefs often include *ad hominem* attacks, threat of legal action and financial injury, professional ridicule, and public invective. All these are seen in the chiropractors' responses.

**Martin Wallace is a retired physician who is resuming his education in literature, natural history, and in trying to understand human behaviour.**

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#### cartwright inquiry

## Orthodoxy Restated

*Linda Bryder responds to an article in our last issue.*

THE article by Michelle Coffey (*NZ Skeptic*, 97) restates the conclusions of the Cartwright Report which are not, as she seems to imply, unassailable facts. Indeed many of the points Coffey highlights are contestable and have been effectively contested. Some examples (Coffey's statements in italics) are as follows:

*"The report found that Green ... aimed to prove a point that even*

*at the time was known not to be the case. A 1961 compilation of studies...showed CIS progressed to invasive cancer in 28.3 percent of cases."*

There was no medical certainty about the proportion of cases of CIS which would advance to invasive cancer, either in 1961 or subsequently. In 1976 the *British Medical Journal* described this very question as a "fierce controversy".<sup>1</sup> Studies, with accompa-

nying disagreements relating to appropriate treatment, continued throughout the period under discussion. In 1993 an Australian researcher reviewed all the studies of the progression of CIS that he could find since 1955. He commented on how controversial it was. He concluded that the studies showed the invasive potential of CIN1 to be 1 percent, CIN2 to be 5 percent and CIN3 or CIS to be 12 percent or possibly more.<sup>2</sup> The reality



was even more complicated, as pathologists constantly disputed the allocation of dysplasia into the various grades of CIN1, 2 and 3. As American professor of gynecology Leopold Koss stated in 1979, "Truly it can be repeated that one man's dysplasia (CIN1) is another man's carcinoma in situ (CIN3)."<sup>3</sup>

2. *"Standard treatment of the time involved excising all affected tissue and the 'conservative' treatment of conisation was in use well prior to 1966."*

Coffey cites 1958 "official policy", as did Judge Silvia Cartwright, to show this. This National Women's "official policy" was agreed to at a meeting of only nine senior consultants (including one paediatrician) with two dissenting voices.<sup>4</sup> Many doctors, in New Zealand and overseas, still opted for the more invasive hysterectomy as treatment for CIS. A 1983 study noted that in the USA hysterectomy had been the most common treatment since the 1950s.<sup>5</sup> In fact Coffey acknowledges this variation in preferred treatments in the next paragraph when she writes, *"During this period, some centres were beginning to use cone biopsy as effective treatment; however there were limitations to its use."*

3. *"Cartwright concluded that Green's 1966 proposal was a 'research proposal'."*

Professor Barbara Heslop explained this more appropriately in its historical context when she wrote: "The investigation was basically a collection of clinical cases whose attributes were to be reported retrospectively."

<sup>6</sup> Green certainly planned to publish in international medical

journals (he had an academic post which held expectations of scientific publications) but he was, as Professor Heslop wrote, a "clinical collector". He himself used the term "medical cartography" to describe his research.<sup>7</sup> Sir William Liley told Green in 1975: "Your dogged long term data collection lacks the instant appeal of some of the other exploits about the place."<sup>8</sup> Green was first and foremost a gynaecologist however, and as American professor of bioethics, Robert Baker, wrote of the 1960s, it was presumed at that time that "the therapeutic relationship would automatically predominate over the scientist-subject relationship."<sup>9</sup> That certainly applied to Green.

4. *"In addition, patients over the age of 35 were included in the research in breach of the protocol."*

The 1966 management protocol was to "extend" conservative treatment to all those under the age of 35, which did not mean that such management was restricted to that age group. Indeed, the protocol shows the extent to which clinical decisions predominated over any research objectives. The conservative treatment regime was extended to cover at least all young women, who could be most harmed by excessive intervention, but it was never intended that conservative treatment would only apply to young women; the choice of treatment was done on a case-by-case basis.

5. *"Patients also had to return for repeated tests and other invasive procedures."*

Coffey presents this as a negative outcome, as though it was an

unnecessary encumbrance for the women. However, in her recommendations, Judge Cartwright (p 210) wrote: "Any woman who has received a diagnosis of CIS ... must have her condition monitored for life."

6. *"... new-born babies had their vaginas swabbed without formal consent from the parents."*

Regarding the infant vaginal swabs, a press release by Judge Cartwright's counsel stated "Mothers were told of the tests." In her report, Cartwright commented on the lack of consent.<sup>10</sup> By this she must have meant written consent. Yet oral consent was also the format for Sir William Liley's intra-uterine blood transfusions from the early 1960s and Sir Graham Liggins's infusion of corticosteroids from the late 1960s, at the same institution, which were internationally acclaimed. These need to be placed in the context of the times. Similarly the trial of radiotherapy and hysterectomy for cervical cancer, initiated in 1972, which Coffey refers to, complied with international practice for randomised controlled trials and the principle of equipoise.<sup>11</sup>

7. *"The patients were divided retrospectively into two groups which overlapped strongly but not completely with groups defined by Green, that he called 'special series'."*

Despite writing this, Coffey herself makes it clear that the two groups created by Dr Bill McDoe et al in 1984 (numbering 817 and 131) had nothing to do with the two groups whose records Green analysed (numbering 27 and 25).

8. “While Coney and Bunkle may have made a mistake [thinking there were two groups], it’s clear the judge didn’t.”

Judge Cartwright most definitely accepted Coney and Bunkle’s interpretation; on page 95 Cartwright wrote:

“Twelve of the total number of women died from invasive carcinoma. Four (0.5%) of the Group-one women, and eight (6%) of the Group-two women *who had limited or no treatment*. Thus the women in the *limited treatment group* were twelve times more likely to die as the *fully treated group*” [my italics].

Cartwright accepted this as “accurately reflect[ing] the findings of the 1984 McIndoe paper.” She therefore accepted unequivocally that there were two groups, one of which had “limited or no treatment”.

9. “... the proportion of invasive cancer in those inadequately treated was much higher compared with those who had returned to negative cytology”.

How had they “returned to negative cytology”? There is no evidence that their treatment was any different from the others (indeed McIndoe himself told Coney that treatment did not enter their study<sup>12</sup>) but their disease had disappeared. The distinction was not “inadequately treated” and “adequately treated”, but rather “positive cytology” and “negative cytology”. The McIndoe paper stated: “The 131 patients in group 2 continued to produce abnormal cytology ... irrespective of the initial management or the histologic completeness of excision of the lesion”.<sup>13</sup>

10. “... there was a further paper in 1986 regarding CIS of the vulva. The same method used by Dr Green to group women by cytology after diagnosis and treatment was used...”

Coffey refers to the 1986 paper on carcinoma of the vulva as critical of conservative treatment, yet overlooks the conclusion of this paper which advised caution in treatment: “Although a small proportion of recurrences will occur, mutilating vulvectomy [should be] avoided.”<sup>14</sup> Coffey actually confuses the two studies (1984 and 1986), when she reverts to a discussion of the 1984 McIndoe paper.

11. “CIS is and was a totally curable lesion.”

Would a modern gynaecologist agree with this assessment? If so, how does one explain that cervical cancer has not been eliminated from our population? Indeed the McIndoe paper stated: “Thus, whether or not the lesion is completely excised does not appear to influence the possibility of invasion occurring subsequently.”<sup>15</sup>

12. “evidence of continuing disease, demonstrating that the intervention was inadequate... this differs from group 1 patients, who were successfully treated at the outset.”

As stated above, Group 1 and Group 2 had a similar range of treatments, the differences did not relate to treatment but rather whether or not they had continuing disease.

13. “This paper [McCredie et al. 2008] gave a direct estimate of the rate of progression from CIN3 to invasive cancer. For 143 women that were managed

by only punch or wedge biopsy the cumulative incidence was 31.3 percent at 30 years and 50.3 percent in a subgroup who had persistent disease at 24 months.”

The methodology of the 2008 paper has been questioned by Sandercock and Burls, who wrote: “This paper states clearly that the authors divided their sample into adequately and inadequately treated groups. However, a major problem in their methods is that they use the *outcome following treatment* as part of the classification system.” Sandercock and Burls cite the 2008 paper:

“Any procedure followed by a positive smear in the following 6–24 months was classified as inadequate treatment (Figure 1). Four women who developed cancer within 2 years of CIN3 diagnosis, but who had no follow-up cytology, were assumed to have had inadequate treatment.”

Sandercock and Burls comment that: “Given that they partially base the classification of adequacy of treatment on outcomes, it is totally unsurprising and uninformative that the authors should find that women who are classified as ‘inadequately treated’ have poorer outcomes. It is difficult to follow exactly what this paper was trying to prove, but as a means to demonstrate that conservative treatment led to worse outcomes, the methods are wholly inadequate.”<sup>16</sup>

14. “This study [McCredie study] is important as it shows the medical experience of the women, where they were subjected to many interventions that were not meant to treat but rather to monitor.”

Apart from the questionable methodology referred to above, it should also be noted that a study on *outcomes* cannot make such pronouncements on what the *intentions* were of those who managed the women's conditions.

15. "[Green's] 'atypical' viewpoint was also promoted in the scientific literature and in the press, creating confusion within the medical scene and with the public."

For Coffey this included undergraduate and postgraduate medical students. Yet Green's achievement was to encourage an openness to look at the evidence. In this, he followed Thomas McKeown, the British Professor of Social Medicine who questioned the role of modern medicine by studying data on causes of death over a 200-year period (this included a questioning of the role of cervical screening).<sup>17</sup> Far from creating confusion, Green's willingness to debate the evidence and to question modern medicine and technological interventions is exactly what a modern democratic society should seek to promote, and this should certainly be a goal of the Skeptics Society.

**Linda Bryder is Professor of History at Auckland University and author of *A History of the 'Unfortunate Experiment' at National Women's Hospital*, Auckland University Press, 2009.**

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forum

## Cartwright Report a plank in advocacy

I'M a men's health promoter working out of Christchurch and have some reflections after reading the discussions about the Cartwright report.

I'm staggered at times by the difference in response by health and social systems to men's and women's needs, despite there being arguably worse health and social outcomes overall for men.

I point to the rich legacy of Women's Health Centres and Women's Support Centres around the country over the last 20 years. I note the health promotion campaigns run through the community that are targeted wholly at women (see *Appetite for Life*), or framed to be less accessible by men (Green Prescription). I'm staggered when I see a "Parent's" Breast-Feeding programme, and a migrant/refugee health programme that is once again wholly for women.

I came in late to seeing the current social work/ health promotion environment, but it's hard for me not to conclude that a lot of advocacy has occurred for women to get these services, and that the Cartwright Report was one plank in that advocacy, regardless of whether it was valid or not.

So, I'll acknowledge in my sympathy for men, being smug to see the report challenged, and at the same time uncomfortable with having that response. I wish a skeptical eye had been put onto all of the public money spent on our health and social dollar and am glad that the NZS took this one on.

Donald Pettitt  
Manager, Canterbury Men's Centre, [www.canmen.org.nz](http://www.canmen.org.nz)

(Thanks for your comments. However, this topic is now closed! - ed.)



# So who are these ‘scientists anonymous’?

*Alison Campbell finds the creationists are still trying to get into our schools.*



A FRIEND of mine, who happens to be a biology teacher, recently forwarded me an email. Quite apart from the fact that the sender had sent it to what looks like every secondary school in the country and didn’t have the courtesy to bcc the mailing list, there are a number of issues around it that give me some concern.

But first, the email:

TO: Faculty Head of Science / Head of Biology Department

Please find attached a new resource (pp. 12-14) by Dr Jerry Bergman on the left recurrent laryngeal nerve (RLN) for the teaching and learning of Senior Science/Biology (human evolution). [Edit: The original email had a link to the article on RLN, which was on the Institute for Creation Research website.]

- Much evidence exists that the present design results from developmental constraints.
- There are indications that this design serves to fine-tune laryngeal functions.
- The nerve serves to innervate other organs after it branches from the vagus on its way to the larynx.
- The design provides backup innervation to the larynx in case another nerve is damaged.
- No evidence exists that the design causes any disadvantage.

Freely share this resource with the teaching staff in your faculty/department.

Yours sincerely,

Scientists Anonymous (NZ)

PRIVACY ACT/DISCLAIMER  
Dissemination of extraordinary science resources will be made once or twice a year at the most (opt out).

All replies will be read but not necessarily acknowledged (no-reply policy applies).

The distribution of resources through this mailing system is not by the Publishers.

It’s immediately obvious that this is a thinly disguised attempt by cdesign proponentsists to get ‘intelligent design’ materials into the classroom [*Those unfamiliar with the term ‘cdesign proponentsists’ please use*

*Google - ed.*]. The use of the word ‘design’ is a dead giveaway there. The arrangement of the laryngeal nerves has been noted by biologists as an example of poor ‘design’ as it doesn’t follow a straightforward path to the organs it innervates (and in fact follows an extremely lengthy detour in giraffes!), leading to the question, why would a ‘designer’ use such poor planning? (There’s a good YouTube clip on the subject.) That the ID proponents now seem to be arguing that poor design is actually purposeful and thus still evidence of a designer smacks of grasping at straws. Furthermore, the article that the email originally linked to is mounted on the Institute for Creation Research website – it’s not published in a peer-reviewed journal. So there’s nothing “extraordinary” about this particular “resource”.

Of more significance, I think, is the identity of the originators of this message (and I note they promise others in future; at least one can opt out!). “Scientists Anonymous”. This is an attempt at an appeal to authority – a bunch of scientists say so, so we should give it some weight.

But we shouldn’t – because we don’t know who they are. No-one’s publicly signed their name to this stuff, so why should

we accept their authority in this matter? Are there really any practising scientists there? Are any of them biologists? Who knows... but it adds no weight to their proclaimed position on this issue. The only person mentioned by name, Jerry Bergman, is indeed a biologist by training, for whom the first Google entries are citations by Answer in Genesis and CreationWiki. Google Scholar indicates that

his recent publications are not in the area of biological sciences but promote anti-evolution ideas including the one that Darwin's writings influenced Hitler's attitudes to various racial groups (an idea that's been thoroughly debunked elsewhere).

A search for 'scientists anonymous' brings up a students' Facebook site and a book of the same name about women scientists. So who, exactly, are these

'Scientists Anonymous' who are behind the email to schools, and why aren't they prepared to put their names to the document?

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

from the vaults

## Creationism in Wellington schools

*Creationism is not a new problem in New Zealand schools, as this article excerpt from NZ Skeptic 18 (December 1990) illustrates.*

### A report of a survey conducted in 1988

**I**N ORDER to ascertain to what extent creationist ideas and influence have penetrated secondary school science courses, we sent the following questionnaire to secondary schools in the Wellington region.

1. Approximately how many hours are devoted to the teaching of evolution in your school and what proportion of pupils are taught it?

2. Are creationist ideas being taught at your school as part of a science course?

3. Do any science teachers in your school use Creationist literature with their classes?

Nine replies were received from about 35 schools circulated. Although this provides only a small sample, and few generalisations can be made, the replies represent a good cross section, from central city large schools to "suburban" schools, and single sex and co-ed schools.

Most teachers made no comment of any concern they may have felt about the influence of Creationism in our schools, but 2 teachers specifically stated they felt there is a problem and that they are concerned about it. Most teachers expressed confidence that their 7th form pupils were able to decide for themselves on the merits or otherwise of the Creationist arguments, but one teacher specifically stated a concern that some pupils had already been "indoctrinated" and that few pupils had "the scientific background to adequately evaluate Creationist literature." Two schools said their science teaching staff included a Creationist (and a third school, from which no reply was received, is known to us). Hence, 3 out of 10 schools have Creationists on their science teaching staff.

Evolution is clearly absent altogether from lower Form (Forms 3-5) courses, and comprises a minor part, if any, of the 6th Form Biology course. In Form 7 it constitutes a major part (generally 20-35 hours) of the Biology

course, which is taken by about 20-30% of the 7th Form. This presumably represents about 3% of the school role.

In total, 4 of the 9 schools expose their pupils to Creationist ideas in the teaching of evolution – generally as a "stimulus for discussion" but, in 2 cases, to show that there are "alternatives that many people accept". Students are encouraged to discuss the question and to "decide for themselves". Two mentioned that they had taken classes to hear Dr Wilder-Smith (a prominent Creationist spokesman) talk, during his recent visit to New Zealand.

...

Roger Cooper (Paleontologist, NZ Geological Survey)  
Gordon Hewitt (Biologist, School of Health Sciences, Central Institute of Technology)  
Frank Andrews (Astronomer, Carter Observatory)  
Dave Burton (Zoologist, Victoria University)

*If undelivered, return to:*

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Lower Hutt 5040

New Zealand  
Permit No. 3357

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### Skeptics in the Pub

Skeptics in the Pub groups are now up and running in Auckland, Wellington, Christchurch and Dunedin – and Hamilton and Tauranga have regular Café Scientifiques, which are also worth attending!

See [skepticsinthepub.net.nz](http://skepticsinthepub.net.nz) for details on meetups, blog posts and forums.

For Café Scientifique visit [sci.waikato.ac.nz/cafescientifique/](http://sci.waikato.ac.nz/cafescientifique/)

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