

# THE SKEPTIC

Vol. 30, No 4. December 2010



## A MEETING of MINDS

**SPECIAL TAM REPORT**





# Skeptical Groups in Australia

## **Australian Skeptics Inc – Eran Segev**

[www.skeptics.com.au](http://www.skeptics.com.au)

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[president@skeptics.com.au](mailto:president@skeptics.com.au)

Sydney Skeptics in the Pub – 6pm first Thursday of each month at the City Hotel, corner of Kent & King Streets in the city (meeting upstairs)

Dinner meetings are held on a regular basis

**Next dinner: March 19** - guest speaker Choice tester Chris Barnes. Bookings online or contact [nsw@skeptics.com.au](mailto:nsw@skeptics.com.au)

## **Hunter Skeptics Inc – John Turner**

Tel: (02) 4959 6286 [johnaturner@westnet.com.au](mailto:johnaturner@westnet.com.au)

We produce a 4-page e-newsletter six times a year; contact the newsletter editor ([kevinmcdonald@hotmail.net.au](mailto:kevinmcdonald@hotmail.net.au)) to add your email address to receive the e-newsletter.

Meetings are held upstairs at The Cricketers Arms Hotel, Cooks Hill on the first Monday of each even-numbered month, commencing 7.00pm, with a guest speaker on an interesting topic.

## **Australian Skeptics (Vic) Inc – Terry Kelly**

GPO Box 5166, Melbourne VIC 3001

Tel: 1 800 666 996 [vic@skeptics.com.au](mailto:vic@skeptics.com.au)

Skeptics' Café – Third Monday of every month, with guest speaker. La Notte, 140 Lygon St. Meal from 6pm, speaker at 8pm sharp.

More details on our web site [www.skeptics.com.au/vic](http://www.skeptics.com.au/vic)

## **Borderline Skeptics Inc – Russell Kelly**

PO Box 17, Mitta Mitta, Victoria 3701

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Meetings are held quarterly on second Tuesday at Albury/Wodonga on pre-announced dates and venues.

## **Gold Coast Skeptics – Lilian Derrick**

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Contact Lilian to find out news of more events.

## **Queensland Skeptics Association Inc – Bob Bruce**

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Hear Bob on 4BC Paranormal Panel - 9-10pm Tuesdays

Meeting with guest speaker on the last Monday of every month at the Red Brick Hotel, 81 Annerley Road, South Brisbane. Dinner from 6pm, speaker at 7.30pm.

See our web site for details: [www.qldskeptics.com](http://www.qldskeptics.com)

## **Canberra Skeptics – Michael O'Rourke & Pierre Le Count**

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Monthly talks usually take place on the 13th of each month at the Innovations Theatre at the ANU. Dates and topics are subject to change. Canberra Skeptics in the Pub gather from time to time at King O'Malleys Pub in Civic. For up-to-date details, visit our web site at: [www.meetup.com/SocialSkepticsCanberra/](http://www.meetup.com/SocialSkepticsCanberra/)

## **Skeptics SA – Laurie Eddie**

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Thinking and Drinking - Skeptics in the Pub, on the third Friday of every month. Contact [nigeldk@adam.com.au](mailto:nigeldk@adam.com.au)  
[www.meetup.com/Thinking-and-Drinking-Skeptics-in-the-Pub/calendar/10205558](http://www.meetup.com/Thinking-and-Drinking-Skeptics-in-the-Pub/calendar/10205558) or <http://tinyurl.com/loqdr>

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Tel: (08) 9448 8458 [info@undeceivingourselves.com](mailto:info@undeceivingourselves.com)

All meetings start at 7:30 pm at Grace Vaughan House, 227 Stubbs Terrace, Shenton Park

Further details of all our meetings and speakers are on our website at [www.undeceivingourselves.com](http://www.undeceivingourselves.com)

## **Australian Skeptics in Tasmania – Leyon Parker**

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Skeptics in the Pub - 2nd Monday each month, 6.30pm, Ball and Chain restaurant, Salamanca Place, Hobart

## **Darwin Skeptics – Brian de Kretser**

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# THE SKEPTIC

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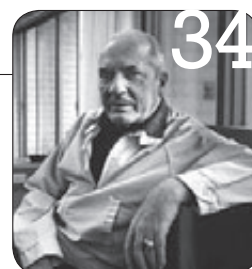
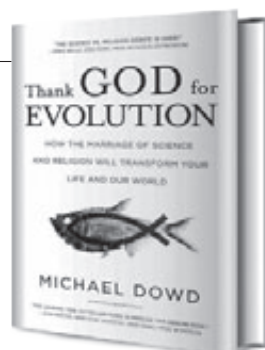


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# Onward ...

This issue marks the completion of our 30th year of publishing *The Skeptic*. Only the US *Skeptical Inquirer*, now into its 34th year, has been published longer. We've come a long way in those 30 years, and we are decidedly stronger, wiser and, perhaps ironically, younger

In our 30th year, Australian Skeptics and the skeptical movement generally have taken a decided turn to the ... well, what do you call a turn to the young? South? Youth? Whatever, the skeptical movement has changed from 30 years ago – a greater number of young people, a more even mix of genders, and a growing emphasis on activism and pro-activism than has previously been seen.

I mean to say – 30 years! Many of our readers and members of the skeptical movement weren't alive 30 years ago.

So it's encouraging to see each year showing a little more development, a little more stretching of wings, and a lot more growth.

In fact, this 30th year has been particularly noteworthy. Top of the heap would be the concerted campaign against the ignorance and misinformation typified by the Australian (anti)Vaccination Network. Drawing on the combined effort of many individuals, largely under the umbrella of the SAVN, this campaign has shown the power of a cooperative effort, a meeting of minds.

As the Australian Skeptics, we were very pleased to honour the SAVN with the Skeptic of the Year Award for 2010. This is the first time the SotY has gone to an organisation instead of an individual. Daniel Raffaele was instrumental in establishing SAVN, and he was justly called to the podium to accept the award. But in true cooperative fashion he called upon fellow SAVNers Ken McLeod and Wendy Wilkinson to join him on the stage. A standing ovation ensued, and the three beamed like they'd just won an Oscar, and in Australian skeptical circles

they probably had.

And speaking of winning an Oscar, TAM Australia (another meeting of minds) was an equally exciting moment. The largest gathering of Skeptics ever in Australia, and the first Amazing Meeting ever held here, and it was as successful as it was exciting. You need only look at the super-sized report in this issue to taste the diversity and quality of presentations.

It was particularly gratifying to have young people – many present for their first skeptical gathering – thanking the organising committee and expressing the boost to their confidence and excitement (that word again) that the convention gave them. Many expressed how they no longer felt like solitary figures of reason standing in a sea of ignorance (pardon the purple prose, but one grows poetic in the face of such passion). They said that they had a new sense of community which would help to drive them to take heart and to be more active.

From the Skeptics' point of view, TAM Oz was an important transition. The number of overseas speakers outshone the previous 'world' event ten years ago, and signified a new acceptance of the role our local activities play on the world stage. In fact, in many ways, Australian skeptics lead the pack in terms of activism and their use of social media. The SAVN's continued success is indicative of that.

Bringing our discussion to a full circle, I realised about 30 seconds before giving a presentation at TAM Oz that celebrating our 30th anniversary made us not only the second oldest skeptical group in the world but, considering that the original CSICOP group had rebranded and remade itself in a different image, we were in fact the longest-lived skeptical group in the world. Something more to be proud of in a very busy 30th year. ■

- Tim Mendham, editor

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**Editorial submission deadline for the next issue:**  
January 15, 2011



# Around the traps...

## The non-menstruating museum

AFP reports that New Zealand's national Te Papa Museum in Wellington has warned pregnant or menstruating women to stay away from some of its exhibits or risk an encounter with angry Maori spirits.

The museum confirmed that it had invited regional museum staff on a behind-the-scenes tour of its collections on the condition that women who were pregnant or menstruating did not attend.

The museum's Maori adviser, Michelle Hippolite, said the condition was because some of the Maori artefacts had been used in wars and were believed to contain sprits that could harm pregnant or menstruating women visiting the exhibit.

"They may have an encounter that may be a form of communication," she told Radio NZ.

"Those of us that are accompanying the group might not see this, hear it or understand what may be happening."

Te Papa spokeswoman Jane Keig said the policy was not an outright ban, rather it was strong advice designed to protect pregnant and menstruating woman from exhibits which Maori people believed could hurt them.



Grothe and Daniel Loxton.

The team of Richard Saunders, Kylie Sturgess and Dr Rachael Dunlop were a part of Skeptic Track panels and demonstrations on skepticism, activism, new media and much more. The children's show, *The Mystery Investigators*, made a return, with Richard Saunders presenting a workshop on origami and Dr Dunlop hosting a panel on blogging. Kylie Sturgess appeared on panels about the intersection of skepticism, psychology and education, and hosted a panel on "Women: Myths, Feminism And Skepticism". All three appeared on the Podcast Beyond Belief live show, discussing skeptical parenting.

Highlights for 2010 included a panel on "Raising Skeptical Geeks" featuring Jamy Ian Swiss, Adam 'Mythbuster' Savage and radio broadcaster Desiree Schell of Skeptically Speaking. This year Dragon\*Con offered a two-hour sold-out scientific paranormal investigation workshop by Benjamin Radford, which was hosted by the Paranormal Track.

## Cancer council on prayer

Excerpt from article "MacKillop Cancer Prayers 'Betray a False Thinking'" by Amy Corderoy, *Sydney Morning Herald*, October 12, 2010:

The chief executive of the Cancer Council, Ian Olver, said the jury was still out on whether praying helped with cancer.

"But there are a myriad of anecdotal reports of praying helping," he said.

Professor Olver said spiritual well-being was an important predictor of quality of life.

"My own view is that prayer as an adjunct to conventional medical treatments is fine," he said.

Source: <http://www.smh.com.au/national/mackillop-cancer-prayers-betray-a-false-thinking-20101011-16g2u.html>

## Skeptics at Dragon\*Con

For the third year in a row, members of the Australian Skeptics and the Skeptic Zone podcast presented at Dragon\*Con, a world-famous science fiction and pop culture convention in Atlanta, Georgia. With more than 40,000 fans, dealers, exhibitors, artists, guests, and volunteers from all over the world, it is regularly attended by the likes of James Randi, DJ

## HOT ITEMS ON THE SKEPTICS SHOP AT TAM AUSTRALIA

- Black Placebo bands (followed by red, then blue and green) – all sold out quickly when people started buying ten at a time.
- Men's TAM shirts – disappeared faster than women's because women were buying those instead of women's (if you know what we mean).
- Pamela Gay's T-shirts – whoosh!

## Holy Druids!

The BBC reported in October that 'druidry' is to become the first pagan practice to be given official recognition as a religion.

The UK Charity Commission has accepted that "druids' worship of spirits arising from the natural world could be seen as a religious activity, and has therefore granted the Druid Network charitable status which will give druidry valuable tax breaks.

"The commission says the network's work in promoting druidry as a religion is in the public interest. The move comes thousands of years after the first druids worshipped in Britain. Druidry was one the first known spiritual practices in Britain, and druids existed in Celtic societies elsewhere in Europe as well."

A report prepared for the commission states that "there is sufficient coherence among the varied expressions and experiences labelled as druidry to be certain that this is a religious movement (not merely a loose amalgam of individual fantasies)".

## Holy Druids! *Continued...*



Druidry's followers are not restricted to one god or creator, the BBC report says, but worship the spirit they believe inhabits the earth and forces of nature such as thunder. Druids also worship the spirits of places, such as mountains and rivers, with rituals focused particularly on the turning of the seasons.

"After a four-year inquiry, the Charity Commission decided that druidry offered coherent practices for the worship of a supreme being, and provided a beneficial moral framework. A statement on the network's website welcomed the decision and said: 'This has been a long hard struggle taking over five years to complete.'

"The decision will also mean that druidry will have the status of a genuine faith."

## Best selling titles at Embiggen Books' stand at TAM Australia

1. *Demon Haunted World* by Carl Sagan
2. *The Australian Book of Atheism* by Warren Bonett
3. *Flim Flam* by James Randi
4. *Trick or Treatment* by Simon Singh
5. *59 Seconds* by Richard Wiseman
6. *Pale Blue Dot* by Carl Sagan
7. *The Grand Design* by Stephen Hawking
8. *Hitch-22* by Christopher Hitchens
9. *Skeptoid 1 & 2* by Brian Dunning
10. *Evolution* by Daniel Loxton

Source Warren Bonett, *Embiggen Books*, <http://embiggenbooks.com/> - highly recommended, no woo!

## Creationists at sea ... unfortunately

The Florida Citizens for Science groups has complained that a sidebar in a marine science textbook recommended for approval in Florida is "packed with good ol' fashioned creationist language".

According to the US National Center for Science Education, the text in question, *Life on an Ocean Planet* (Current Publishing, 2011), was recently recommended for state approval by the state's Instructional Materials Adoption Committee. But FCFS president Joe Wolf wrote to Florida Department of Education Commissioner Eric Smith, suggesting that the sidebar on "Questions about the Origin and Development of Life" is "simultaneously actively misinforming, at odds with state standards, and ultimately irrelevant to marine science".

The sidebar makes a variety of historical and scientific errors. For example, it claims that in the *Origin of Species* "Darwin proposed that life arose from nonliving matter"; it equates

microevolution with genetic drift; and it contends that selective breeding demonstrates genetic drift. Moreover, although the sidebar acknowledges that "the vast majority of biologists (probably more than 95%)" accept evolution, it also airs, without attempting to debunk, a variety of creationist claims (which are attributed to unnamed 'skeptics'), including that the fossil record "does not contain the many transitional species one would expect", that "evolution doesn't adequately explain how a complex structure ... could come to exist through infrequent random mutations," that transitional features could not be favoured by natural selection, and that "the hypotheses that ... chemicals can lead to abiogenesis are highly debatable".

The FCFS isn't sure what the Adoption Committee recommended: "Information about the committee vote indicates they voted to approve the textbook overall, and a second vote was called for to remove the sidebar. That second vote failed but a compromise was reached to 'fix' the sidebar."

## The Hot Band sales pitch

A transcript of an actual conversation between a skeptic and a pharmacist selling a Power Balance alternative called Hot Band (names withheld):

**Sales assistant:** Can I help you?

**Customer:** I was just interested in this Hot Band. Can you tell me a bit about how it works.

**Assistant:** I don't actually know all that much about it but the owner is a pharmacist and he wears one. I don't know. People swear by them. A lot of people have bought them. Would you like to speak with him?

**Customer:** Yes, that would be great. Thanks.

**Assistant:** I'll just go and get him.

A short time later a man wearing a white pharmacist's lab coat came down the stairs and was directed towards me by her. I noticed that he was wearing a band similar to the product in the Hot Band box on his wrist. A conversation followed to the effect:

**Pharmacist:** Hi. Can I help you?

**Customer:** Yes, I was just interested in the Hot Band. I see that you're wearing one. Are they good?

**Pharmacist:** Well ... I don't know really.

**Customer:** But why do you wear one?

**Pharmacist:** Yeah, I got it for free ... and it's a bit of a fashion statement. I don't know.

**Customer:** It says on the package that it corrects my ionic balance. What is ionic balance?

**Pharmacist:** Oh... it's [he then looked in another direction] ... I don't really know what it is but it's supposed to improve your balance. I don't know. Choice did a report on them and panned them. I think there's going to be a backlash against them soon.

**Customer:** Do you think you should be selling them in the pharmacy and wearing one, if it's no good?

**Pharmacist:** Yeah, I don't really know ... It comes with a money back guarantee, so you can try it out and if it doesn't work you can always bring it back. It's up to you. ■

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**Be there or, or be naked**



# AMAZ!NG

Tim Mendham, Steve Roberts, Jessica Singer, Philip Peters and Krissy Wilson report on TAM Australia 2010.



**E**xhausted, inspired and proud" ... "a fantastic weekend, engaging, informative and very smooth" ... "something that I will remember for the rest of my life". Encouraging stuff for the first The Amazing Meeting ever held in Australia.

On November 26-28 over 600 people from across Australia, New Zealand and sundry other places gathered in Sydney for skepticism, sense and socialising. And they weren't disappointed – the cream of Australian and overseas skeptics with Randi, Singh, Dunning, all of the SGU rogues, Pamela Gay, Dick Smith, Loretta Marron, Eugenie Scott, Dr Karl ... the list goes on and on.

Attendees praised the variety of the presentations – from dealing with the paranormal to skeptical activism; 'intelligent' design to intelligence and the law; education, medicine, psychology, astronomy, illusion, two live podcasts and a fascinating dose of history and reminiscence when Randi and Dick Smith got together to relive the early days of Australia Skeptics.

The choice of venue raised a few eyebrows, but the Sydney Masonic Centre, with its in-the-round (or actually square) Grand Lodge, gave all a closer view of the presenters than the usual long hall. While there was a definite need for those on the bench seats on the periphery to grow friendlier to allow others space to sit, and some upstairs thought those same benches were a tad bottom-testing, these were minor quibbles in what was overall considered a huge success.

Exhausted? Absolutely. Informative? Definitely. Memorable? Conclusively. Amazing? You just had to be there.

But you can get a taste of what it was like and what was covered in the following blow-by-blow description of each session. Read on for TAM Australia in précis.

## PARANORMAL IN AUSTRALIA - PANEL

Tim Mendham (moderator), Barry Williams, James Randi, Steve Roberts and Ian Bryce

The first ever TAM Australia kicked off with a panel discussion by three hoary representatives of Australian skepticism: Barry Williams, Ian Bryce and Steve Roberts (sorry Steve!). The venerable trio was joined by the ever youthful James Randi and the positively adolescent Tim Mendham (as moderator) to discuss the paranormal in Australia. With so many years experience behind each of them, it was natural that the panel examined the subject from a historical perspective first. So, what has changed since the first issue of *The Skeptic* in 1981? Back then, the paranormal was dominant and there was only one article on a medical topic: psychic surgery.

Thirty years later the focus has changed and alternative medicine has become a huge area of skeptical activism. However, belief in the paranormal still

remains high - a significant proportion of the population believes in witches, angels, UFOs, miracles, heaven, astrology, ESP and life after death. The media still often report such things uncritically and this is accepted by its audience. Steve's view is that believers often don't want paranormal phenomena to be explained, as they want to feel important and to baffle the supposed scientific conspiracy.

When asked to consider whether it is dangerous to believe in the paranormal, the answer was a resounding yes. As Randi said, any truly-believed false

conventional medical terminology, and concerns should be raised with any method of treatment which includes: claims to cure everything; use of testimonials; appeals to ancient wisdom and gurus.

Is there a claimed conspiracy of suppression? If the treatment is done offshore, why? What is the mechanism and is it plausible? If something looks too good to be true, it probably is!

The quality of evidence runs consecutively from anecdote to preliminary to rigorous to systematic review. Anecdotes are worse than useless

because they can confirm what you wish was true.

Loretta Marron needed all her skills in science to take on the weird cures thrust upon her as a cancer sufferer. She focuses her efforts by defining

objectives, producing professional-quality documents targeted at company boards and the like, and on getting the TGA to take action. Her resources include university courses and libraries, the TGA's course on advertising, individuals in the Skeptics, radio/TV support groups, and local persons of influence. She gets her message out with articles, blogs and by public comments on new legislation. She paces herself, doesn't overload and has fun doing it. Skeptics can help her and others by adopting a project, making comments on materials provided, keeping abreast, networking and contributing expertise and time.

The TGA publishes a very good and robust advertising code, but the big flaw is that someone has to complain - the TGA cannot act of its own volition. The Nightingale Collaboration is starting up on the web to assess alternative claims and to promote a broader

understanding of the issues.

Ken McLeod recalled an appalling moment in the 1950s when his sister came down with polio, and there was no available treatment. Later in life, lies and harassment by Meryl Dorey and the Australian Vaccination Network motivated him to get officials to take action. Because of this action, journalists no longer feel the need to consult the AVN to achieve 'balance', and indeed find the AVN's actions "rather chilling".

The Stop the AVN group operates in the information vacuum created by the refusal of cowardly politicians to speak out; practically all government departments except the Plague Locusts Commission have been approached, and their turn will come.

As a public-health nurse, Wendy Wilkinson had a similar "watershed moment" as Ken during the 2009 outbreak of pertussis, after which, noting the AVN's use of fallacies, misinformation and outright lies, she focussed on the AVN's finances, causing the NSW Office of Liquor Gaming and Racing to revoke its charity status, and for the OLGR to review its own procedures whereby that status was originally granted. [SR]

## SKEPTICAL ACTIVISM - WORKSHOP

Brian Dunning (moderator), Travis Roy, Elliot Birch, Jason Ball, Evan Bernstein, Rebecca Watson and Jason Brown

Moderator Brian Dunning summed up one of the emerging themes of TAM Australia when he described the goal

of this workshop: to explore practical ideas for positive and effective skeptical activism - a "What do I do next?" session (to quote Daniel Loxton). The changes in the focus of skeptical activism are demonstrated

by Mark Plummer, one of the original founders of the Australian Skeptics, who described from the floor how, over the



notion is dangerous as it makes people vulnerable. Ian (challenge co-ordinator and scientific investigator of the Australian Skeptics) has seen firsthand the damage done, especially to people's wallets, by investing in things like the Lutec free energy machine. Barry Williams made the point that paranormal ideas and claims become particularly dangerous when supported uncritically by government authorities.

To quote James Randi "Don't forget the Carlos caper" and stay vigilant. [JS]

## EVIDENCE BASED MEDICINE - WORKSHOP

Dr Rachael Dunlop (moderator), Dr Steve Novella, Dr Michael Vagg, Wendy Wilkinson, Loretta Marron and Ken McLeod

In contrast to pseudoscience, scientific work in medicine features published results, peer review, multiple confirmation, a body of evidence, self correction, checking claims with PubMed, MedLine and Google Scholar, and allowing for the placebo effect.

But alternative medicine is hijacking

"... absolutely brilliant. There was a great atmosphere and an interesting range of speakers. I would not have missed it for the world." Simon Singh



# AMAZING

*Continued...*

past 30 years of skepticism, his more aggressive and confrontational approach has mellowed.

As Rebecca Watson pointed out, the desire to achieve something positive and “just do shit” can generate an enormous response, as was demonstrated by the free pertussis vaccination program supported by the Skepchicks at Dragon\*Con.

Evan Bernstein made the point that the approach should depend on the subject matter as some subjects justify a more serious angle. Being as personable and normal as possible goes a long way, as does not imposing beliefs on others. Travis Roy recommends assessing the target and the audience, as confrontation can obscure the message and alienate the people you want to reach. The key for him is to choose something interesting and run with it.

Confrontation still has its place, particularly when combined with humour - Jason Brown favours this and uses appropriately-directed disdain to great effect.

The internet now dominates our approach and during the workshop, TAM Oz was number two in Australia on Twitter (thanks to Richard Saunders for this information). Jason Ball and Elliot Birch are experts on harnessing e-mail, Google, Facebook and Twitter for far-reaching activism at low cost - always a consideration, particularly for students. If you are lucky enough to have some money, spend it on things like audio, video and graphic design which require quality to be effective. Money can also be well-spent on skeptical events - Jason Brown is committed to holding a Skepticamp in the next six months and scored an immediate donation from the floor for this purpose.

Most importantly, whatever line of activism you choose, have fun. [JS]

## JAMES RANDI

If it's true that John Edward was performing in the Masonic Centre on the

day before TAM Oz, then the answer to the question posed in the title of James Randi's talk “Is there still a chimera to be slain” has to be a resounding yes. It must be the sceptical equivalent of an exorcism to hold an Amazing Meeting in a venue recently vacated by Edward and Randi's presence would have blasted any lingering ‘psychic’ pestilence right out of the building.

Randi has made it his life's work to fight ‘woo woo’ and has turned it into a vocation. So when a definition of ‘woo woo’ appears in Webster's dictionary will Randi's work be over? Unfortunately not: magnets, petrol savers, laundry balls and other scams just keep coming and Randi has seen them all in varying degrees.

Some scams he describes as shameful, such as the purchase of bomb detection dowsing rods by the US government for use by the military in Iraq. Examination of the device showed that they contain only unconnected wires and a circuit board culled from a domestic gadget.

Other scams are hilarious and Randi's experience as a conjurer (his preferred term rather than magician) helps him when even experienced scientists can be fooled. This was illustrated by his anecdote of being contacted by the Lawrence Livermore National Laboratory to be informed that he had lost the \$1 million challenge, as they had discovered a man with genuine telekinetic powers. After a little research, Randi was able to show that the supposed telekinetic feat was in fact Martin Gardiner's levitating matchbox trick and that was the end of that. Randi also has unfinished business with Sylvia Browne. She agreed to take the \$1 million challenge on the Larry King show, but is yet to contact the JREF to be tested. Apparently talking to dead people is a piece of cake compared to finding Randi. [JS]

## DR KARL

Dr Karl Kruszelnicki entertained us with a string of at-first-sight unconnected but vastly entertaining factoids, all delivered at his usual breakneck pace. He began by considering the social problem of a brassiere that becomes two face masks in an emergency - but who says there is an emergency? A pocket guide to identifying weapons of mass destruction warns that the official radioactive/biological warning symbols may not be properly displayed on such items. Correlation between school exams and deaths of grandmothers indicates ceasing to set exams, enrolling only orphans, or getting students not to tell their families about impending tests.

Recent annual surveys of trustworthiness place Dr Karl in positions 7, 11, 14, 10, 11, 12 and by graphing this data he showed that when he's much older he can be as untrustworthy as the Prime Minister; it was particularly annoying for him to be placed at #11 when The Wiggles were at #10. However, for online dating, Dr Karl was first choice, easily beating David Hicks.

He gave a passionate exposition of solar/wind power, with projected figures answering all criticisms; one-third of the ACT if covered with mirrors - and





why not? - would power Australia, and one-third of Victoria the world. The 1925-1932 Sydney Harbour Bridge was an example of building-in capacity for the future. Murphy's law was expounded in its original version, and shown to work, expensively, on Venus. Dr Karl was once expected to discuss feminism with Germaine Greer, but when he opened with a remark on penile sensation and vaginal engulfment, the program was frantically blacked out, giving way to an advertisement for sheep dip.

All this and more, and he showed his holiday slides too! [SR]

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## GEO HRAB

As the audience was recovering from Dr Karl's talk, the pronounced George Hrab (pronounced George Hrab) played guitar and sang a few of his songs: "I Won't Be Famous", "Everybody Alive Will Die Someday", the nerdy "When I Was Your Age", the emotionally laden "Small Comforts", and "I Never Knew" (... what rhymed with orange / Till you asked me to fix your squeaky door hinge). Whince.

His guest by video, Dr Robert Pittinger, answered prepared audience questions and got everything wrong. Geo's finale "Twitter Song" was made up of ghastly puns, such as "People who cry at weddings suffer from eye dew" and "Waiters in Finland have difficulty clearing away the dishes at the end of the meal" which Geo helpfully explained, for those of us who did not get it. [SR]

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## SIMON TAYLOR

This aspiring young magician prefers small audiences, but has worked 600 and more on cruise ships. "It's not a show you gotta see, it's a show you gotta be part of", he says. At the end of the convention's exhausting first day (and that only a half day!), with an audience recently harangued by Dr Karl and Geo Hrab, he found it hard to get the show warmed up, but eventually gained complete control and threw in a few good ad-libs. An audience of Skeptics is one of the hardest for a magician to work with - when asked for an English word,



tonight someone offered "echidna" - but Simon kept his confidence and delivered a few good tricks, some rather obvious and some not. His patter sometimes took a little too long and went off-topic, but a final mind-reading act with three victims was well delivered and quite baffling for most of us. An amusing performance, good for what it was, but Simon Taylor lacks the towering stage presence of an older magician. One day, though. [SR]

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## BRIAN DUNNING

Brian Dunning, the voice of the *Skeptoid* podcast, gave an original and thoroughly entertaining presentation on mysterious sounds. From the depths of the ocean to outer space, it seems we are confronted, and often confounded, by these mysteries. While the so-called 'bloop' remains our most intriguing undersea noise, other sounds have been used to solve mysteries. The Rendlesham forest UFO incident (sometimes referred to as "Britain's Roswell") was solved to the satisfaction of any reasonable person back in the 80s, but it was entertaining to see how an audio recording can further discredit alien involvement.

The talk went beyond the obvious targets of skeptical investigation to show

man-made mysteries with examples of coded messages by international spies and the tricks used to 'find' secret messages using reverse speech. Brian has a contagious passion for sound with examples of musical tunes played by the most unlikely items that kept everybody guessing. It seems that we are surrounded by them, as if the world were not wondrous enough already. [PP]

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## LORETTA MARRON

Loretta Marron is a tireless crusader defending the public from health fraud. It comes as no surprise, then, that she had been very active since she last appeared at a skeptics' conference, which was only a year ago. Showing no signs of slowing down, Loretta revealed her latest campaign aimed at getting the TGA (Therapeutic Goods Administration) to ban dodgy and dangerous devices. It seems that products are either "registered" or "listed". It is the listed products that don't need to have proven efficacy. This provides an open door for unscrupulous merchants to peddle anything with wild claims, as long as they cause no actual harm. This is where Loretta steps in, gathering evidence and informing the TGA and our elected officials of fake medical devices.

She has already had some success getting devices banned, but it is a slow process. Guests were invited to join the fight with some basic advice to keep an eye out for devices that could not possibly work and not to keep silent. Complaining is important because it is ridiculously easy to have a product listed, but very difficult to have anything banned. This is not a glamorous role to play, but arguably the most important thing skeptics can contribute to society. [PP]

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## KRISSY WILSON

Dr Krissy Wilson must have the most varied background of any of the TAM Oz speakers - actress (she was in *The Bill*), stand-up comedian, singer, airline stewardess and a doctorate and lectureship in psychology. To this CV she

# AMAZING

Continued...

added elbologist. Not just any elbologist, mind you, but Dr Sioux Ryersis, "Australia's leading elbologist – world renowned exponent of the ancient art of divination through the power of the elbow!"

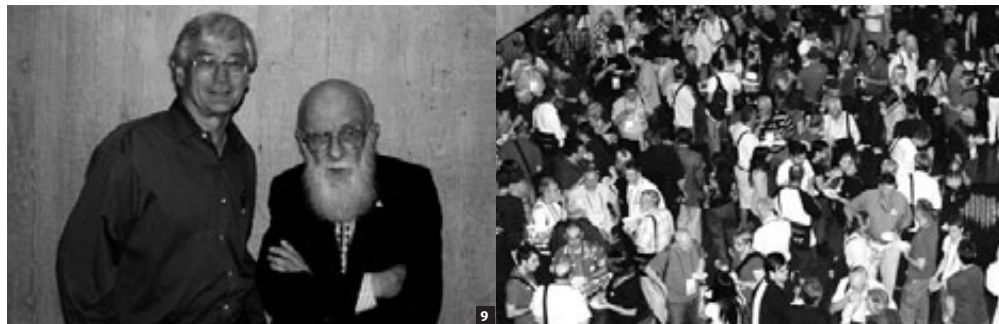
If you think Krissy was taking the piss, you'd be right. She described her experience in giving free psychic readings, attending the Mind Body Wallet festival garbed in appropriate gypsy-like black hair and floral print dress, and some classic analyses of

famous elbows (Queen, Prime Minister, a lizard). But not content with taking on belief, she added doubt to her list of sins – skeptical doubt, pinning such 'self-delusions' as a skeptic's conviction that believers are different to non-believers, we support critical thinking, rationality

is all, and a refusal to blindly follow charismatic leaders (picking Richard Dawkins as a case in point).

Some skeptics may have squirmed in their seats at this turning the tables. Just as many nodded their heads in approval.

The one disappointment was Krissy's



## SKEPTICS' AWARDS ... AND THE WINNER IS

The annual Australian Skeptics' Awards are always a highlight, whether thoroughly endorsed or highly controversial. And this year was no exception..

**The 2010 Skeptic of the Year** went to the Stop the Australian Vaccination Network (SAVN). This is the first time the award has gone to an organisation instead of individual, but it was roundly supported by the audience who gave a standing ovation to the three SAVN representatives, Daniel Raffaele, Ken McLeod and Wendy Wilkinson [below - McLeod, Wilkinson, Raffaele]. The citation read: "A group devoted to the cause of countering the misleading and harmful claims of the Australian (anti) Vaccination Network through the cooperative efforts of its more than 2000 members and supporters and which has done so with diligence, honesty and ethics." There was hardly a dry eye in the place as Ken described the driving force behind the group's foundation – the death of Toni and Dave McCaffery's daughter Dana, and the dangerous anti-vaccination activities of the AVN.

**The 2010 Thornett Award** for the Promotion of Reason – an award instituted last year – went to, again, Ken McLeod and Wendy Wilkinson, both of whom were surprised to have received the additional recognition. This went for their "relentless campaign to ensure that the Australian (anti)Vaccination Network's activities are brought into the light of official scrutiny, and their subsequent success in this campaign". Each

received \$1000 and the total support of all of those present.

**The 2010 Bent Spoon Award**, the least desirable award of the event, went to the Australian Curriculum and Reporting Authority (ACARA) for its draft science curriculum. It was acknowledged that the curriculum as awarded was a draft document, and that ACARA was working on revisions, but the draft included outrageous omissions such as the virtual sidelining of evolution, including the absence of any specific course on the evolution of man or reference to the lynchpin of the topic, Charles Darwin. The draft also left the way open for the teaching of creationism – a practice prohibited in most states – and included traditional Aboriginal beliefs and Chinese and alternative medicine as components of a science course. ACARA's chair, Barry McGaw, has admitted that the science curriculum is a particularly difficult exercise, and is likely to be further developed. We hope so, but until then, the draft curriculum remains a sad document indeed.

Additional awards, presented in absentia, went to

journalist Steve Cannane "for his honest and diligent approach to journalism and the pursuit of truth in all of its aspects and wherever it may lead" and to Australian Skeptics' co-founder, Mark Plummer, for his "inspiration and leadership in establishing the Australian Skeptics in its formative years, and for [his] continued drive in creating what is now a vibrant and successful skeptical organisation".





“... a resounding success and something that I will remember for the rest of my life.” *Daniel Raffaele, SAVN* (which won the Australian Skeptic of the Year award for 2010)



inability to perform the Monkees' I'm a Believer on stage, complete with go-going Saunders and Hrab.

Lively? She always is. Cutting to the quick? Painfully so. [TM]

## JAMES RANDI & DICK SMITH

These two grand old men were joined on stage for the first time in many years (if ever), and seated in comfy chairs they recalled the divining trials of 1980 which began the skeptical movement in Australia. Nothing could convince Australia's best dowisers that their powers might have waned, and all came up with excuses for poor performance (notably, “randomness” and “the presence of skeptics”). Many journalists were thus weaned off their vague belief in divining.

The Carlos hoax was a reaction to the gullibility of the press and public to a series of gurus and mystics that infested these shores at the time; every statement in the Carlos press release was a lie but nobody checked up on the quoted (bogus) sources.

Then there was Randi's infamous appearance on the Don Lane show, whose host was besotted with a Mr Uri Geller. Don got angry not so much at Randi but because he suddenly realised that Geller had betrayed him. Then it was Dick's turn, admitting that the Australian Geographic shops once sold a divining rod, said to be “as effective as any other”, and offered the “original design” coat-hanger car radio aerial for \$150 but they sold only one, in the post to a Mr R. Smith.

A Mr B. Williams asked if the pair felt ashamed, now that skepticism has arisen and spread so much that it is hindering the operations of dowisers and psychics, but Dick pointed out that the capacity

for self delusion is infinite. Randi vigorously denies being a debunker; he is an investigator first and foremost - debunking can occur only after you have got the facts. He particularly objects to celebrities being treated as if they know something.

The word “skeptic” is mis-applied to groups of deniers, notably “AGW skeptics”. Denier groups get too much exposure on the media because the public is so stupid. James wrote that we know very little about AGW and the size of its possible effect; everyone agreed with this, but half the readers congratulated him for opposing the deniers and the other half for agreeing with them. Dick's wealthy friends are all AGW deniers, but he prefers to focus on the wasteful misuse of resources. Having sold his shops at age 35, he could have “stayed on the treadmill of making yet more money” but chose instead to do the things he wanted to do; this led to him being told “you are so lucky”. The audience gave a mighty standing ovation, one of several at the conference. [SR]

## SGU PODCAST

The SGU crew – Steve, Bob and Jay Novella, Rebecca Watson and Evan Bernstein - lined up to do a special podcast from ‘down-under’ which, unsurprisingly, had a distinctly Australian flavour. The date was 27 November and Today in Skeptical History celebrated the birth in 1880 of Ralph Freeman, the design engineer for the Sydney Harbour Bridge.

The crew had obviously been on a crash (and burn?) course of all things Australian. Rebecca Watson has learned how sleeping fruit bats poo upside down. Jay researched all things lethal

in Australia but (luckily for him) has been disappointed in the distinct lack of spiders, snakes and sharks just waiting to get him. Steven now knows that prawns not shrimps go on the barbie. Evan spoke about the latest crystal skull discovery and how most of these (undeniably beautiful) artefacts of wood can be traced as originating from a small town in Germany in the 19th century. Bob's cosmology segment covered Roger Penrose's controversial cyclic universe model. In the Monkey vs Bird, Steven showed how a group of chimps (OK, OK, we know they're apes not monkeys) are winning hands down in avoiding and even disabling bush meat



traps. As we were in the Grand Lodge of the Masonic Centre, Jay explained the background of freemasonry. But Science or Fiction really stole the show thanks to the assistance of 11 year old Alex, the youngest skeptic at the convention. [JS]

## FRED WATSON

Fred Watson is Astronomer-in-Charge of the Anglo-Australian Observatory but always seems to be able to find time and enthusiasm to speak to public groups,



# AMAZING

*Continued...*

and he does so in an engaging and even humorous way (you try and find humour in planetoids). He also covers a multitude of facts in a too-short half hour.

He described Saturn and showed leading-edge photos of the planet and its moons and its ice-and-rock rings, which are only 100m thick. Our environment on Earth may be unique in the Universe; there is still nowhere else known to harbour living organisms, these being defined as self-replicating, self-sustaining, and capable of Darwinian evolution. And the new field of astrobiology is important because it allows astronomers to talk about sex.

Anyway, back to Saturn and its 63 moons; the Cassini spacecraft has orbited the planet since 2004, and photographed Iapetus with its dark/light sides, Hyperion whose surface is undisturbed since the Late Heavy Bombardment (3.9 billion years ago), Enceladus which has liquid water and rocks beneath its icy surface, and Titan which has rain, rivers, lakes and seas of ethane and methane, plus liquid water under pressure. It also has a deficiency of hydrogen and acetylene, and it is speculated that local microbes are breathing these gases. Cassini - a spacecraft touched by a gloved Dr Karl Kruszelnicki before takeoff in 1997 - still has seven years and 43 near passes to go. [SR]

## SCIENCE-BASED MEDICINE - PANEL

Dr Rachael Dunlop (moderator), Dr Steve Novella, Prof Ian Harris, Joanne Benhamu

The panel answered questions about the use of this new paradigm in the research and practising of medicine, in preference to the empirical. Critical thinking was not part of the training of nurses, doctors or surgeons, but some panel members acquired it by following the logical arguments in good articles in journals (but there is no tuition in how to

distinguish good articles from bad ones) and by being aware of confirmation bias and the low value of anecdotal evidence. When a doctor tolerates homeopathy "because it works", this is anecdotal evidence.

There is much resistance to change in medical practice and, despite a perpetual shortage of resources, some useless old habits persist, such as charting the fluid balance of patients (inaccurately, and the information usually has no use).

Assessors of science-based medicine must be aware that drug companies are sponsoring the trials, and look out for similar biases. For instance, when discussing whether radiotherapy might be of use to a patient, it is well-known not to ask a radiotherapist because he/she will always say yes. More structures for digesting information are needed, and the ethics of research must be weighed against the ethics of medical care.

Placebos are useful but a whole "therapeutic envelope" is needed - apart from the white pill itself, the pills should be described as expensive, the doctors wearing white coats, the patients kept waiting and then told how hard it is to get in. All these things help with the placebo effect.

Science is self-correcting and works like a democracy, compared to the dictatorship of alt-med, but different doctors can still recommend different treatments, for example exercise vs spine-fusion for back pain. Patients expect something to be done with them.

And finally, an ironic word of warning: performing a procedure that goes wrong would attract worse litigation than not doing the procedure at all.

## SKEPTICISM AND THE LAW - PANEL

Julian Morrow (moderator), Martin Hadley, Nick Cowdery and Simon Singh

One of the emergent themes of TAM Oz has been the enthusiastic encouragement of activism; the message being, "Don't just get angry; get even" which may involve using a complaint procedure. The workshop on skepticism and the law focused on two key issues of the law



as a tool and, crucially, as a potential trap. The panellists gave at times, a salutary lesson in what could happen if the target of your attack decides to sue. The financial and personal costs of a lengthy libel case was graphically summarised by the inspirational Simon Singh. Happily for Simon, he was able to draw on independent resources to fund his case but a naive blogger may not be so fortunate. Nick Cowdery made the point that both civil and criminal law are not interested in searching for the truth, but rather in dispute resolution. The consensus on how to protect yourself was endorsed by all: be sure of your facts, get yourself a good lawyer and keep a copy of *The Skeptic* in the car. [KW]

## PAUL WILLIS & HIS DUCK

The scheduled Tracy King was unable to attend, so MC Paul Willis leaped into the fray, along with his duck.

Paul's scientific career began with the study of fossilised crocodiles, these being much safer than live ones. Cladistic analysis usefully groups animals according to various attributes and easily shows up their evolutionary paths. By this means dinosaurs are divided into bird-hipped and lizard-hipped groups; birds evolved, confusingly, from the latter group. The biggest dinosaur was, of course, Australian (cheers) but we have only its footprints, one metre across. Birds are the only modern animals that have a wishbone (furcula), and dinosaurs had this too. Similar cladistic groupings have been done from DNA, and from blood proteins of animals.

The evolutionary traits of birds are easily shown by pulling apart a roast duck, and Paul, clad in apron, did this despite the mess. He used to use chickens but, as sold, these are not mature birds and you don't get the head and neck. He thus demonstrated that God must hate creationists because she has given us all this evidence for evolution, and it is edible; every creationist who eats a chicken is forced to see it. Boil up the bones of your next chicken or duck, keep the femur, wave it at the next Jehovah's Witness and ask him to explain the Fourth Trochanter, unique to birds and dinosaurs. [SR]

## SIMON SINGH

After you've seen the charming and mild-mannered Dr Simon Singh in the flesh it's hard to image him libelling anybody, but that's what he was accused of by the British Chiropractic Association in 2008 in response to an article on the use of chiropractic for paediatric conditions in *The Guardian*. The BCA ultimately withdrew its claim two years later, but even this victory cost Simon inordinate amounts of money, time and anxiety. In retrospect, Simon focuses on the good things which came out of that very difficult period. First and foremost, his son was born (though presumably not because of the BCA case). Next, it resulted in an examination and critique by Edzard Ernst of 80 chiropractic studies. The examination was refereed by the British *Medical Journal* and concluded that the BCA's evidence (based on the studies) for the use of chiropractic for paediatric conditions is neither complete or substantial. Lastly, the case has helped focus attention in the UK on the need for reform of the libel laws to discourage 'libel tourism', a situation which is completely out of control – publish an article in Iceland, get sued by a litigant in Upper Volta, and have the case undertaken in the UK. [JS]

## MEDIA PANEL

Tim Mendham (moderator), Dr Rob Morrison, Dr Paul Willis and Steve Cannane

Rob Morrison pointed out that the number of trained science journalists is decreasing, and the average journalist can fail to spot a good science story, but science can be reported well by using advice from experts while watching out for being bamboozled, at which some pressure groups excel. Paul Willis added that most broadcasting – including the federally-funded ABC – is driven by ratings, not mention advertising income, even at the expense of truth; thus if an expert looks foolish, the story will sell better.

Steve Cannane, recognised the previous day for his contribution to

journalism, stressed that he had never been pressured by management to run a particular slant to a story, and that the ABC's Lateline reports good current stories that are in the public interest, regardless of pressure from aggressive and even litigious groups.

Tim Mendham pointed out the media's obsession with trivial stories, especially TV where attractive visuals might be more influential than the content – what one newsreader referred to as the "falling chimney" syndrome.

The media's target audience is like an intelligent ten-year-old but there is still no need to 'dumb down' content, a description that Rob felt insulting. Paul then described 'post-modern management', where current thinking imposes the disastrous notion that all points of view are equally valid and all groups should be appeased; shows like *Catalyst* have to resist this, while always airing the principal relevant views, especially if these are testable.

Then there is the issue of 'an expert'. This could be someone who has recently published peer-reviewed research and is generally respected in their field. The danger is that some scientists stray outside their field of relevance, and valueless people such as actors, authors and lords get media attention when the scientific discipline is not only outside of their area of expertise but probably outside of any comprehension at all.

Complaints by viewers are worthwhile, especially to the ABC. [SR]

## SKEPTICAL EDUCATION

Eran Segev (moderator), Dr Eugenie Scott, Helen Walton, Peter Ellerton and Dale Roy

An impressive group of educators discussed two key issues regarding sceptical education- the teaching of the scientific method in schools and the role of parents in fostering critical thinking in their children.

Eugenie Scott began by emphasising that sceptical thinking is critical thinking and that an understanding of how science works is crucial, but that responsibility for teaching critical thinking is a matter of some controversy.

# AMAZING

*Continued...*

How can we be sure, for example, that primary teachers themselves understand how science works? Peter Ellerton added the importance of eking out exactly what these specific transferable skills are and from Helen Walton came the encouraging news that despite some considerable objection from religious-based members of the community, ethics classes will now be trialled in schools in NSW from 2011 for years 5 to 6. These classes will enable children to explore values, and examine their own opinions and those of others.

A final thread focussed on the role of parents. All agreed that although children are naturally curious, developmentally appropriate guidance will help teach children how to think as critical viewers. The key is to encourage children to be observers of nature and the world around them and is the first step in thinking about what they are seeing.

## PAMELA GAY

In the constant battle against 'woo woo' Dr Pamela Gay counts herself lucky to have reality on her side because the universe is so amazing.

Pamela believes that we skeptics don't have to be arrogant when trying to change people's views. If you're going to, fight for something rather than against something else, fight to get people engaged and to understand.

Anyone can contribute to original scientific research through citizen science projects such as GalaxyZoo and this helps to inspire people who often believe that they are not smart enough to do science.

Pamela's advice is to learn something everyday which is based in reality, inspire other people and, in the words of Phil Plait, don't be a dick.

Her own speech was inspiring, and generally regarded as one of the highlights of the whole convention. [JS]

## SGU QUIZ

Everyone

Unfortunately, due to illness, Catherine Lumby was unable to attend the meeting to give her scheduled presentation, so to take her place an impromptu quiz was arranged. The team on stage consisted of members of the SGU and was headed by George Hrab. They were pitted against the audience who gave their answers live, in full view on twitter. Rebecca Watson had the unenviable role of asking the questions and attempting to keep order. This was arguably one of the most entertaining sessions of the conference. Much hilarity ensued with some very amusing responses from the audience and great banter from the team on stage. Highlights included the revelation of George Hrab's virility, not to mention his knowledge of Rolf Harris, and that hapless Australians are under constant fear of death from psychotic cows. The audience turned out to be way smarter than the panel and a great time was had by all. Hats off to the organisers for the last minute re shuffle and congratulations to Rebecca for a fantastic job as compere, not to mention preparing the questions in just 30 minutes. [KW]

## SKEPTIC'S Q&A

Eran Segev (moderator), James Randi, Steve Novella, Brian Dunning, Rachael Dunlop

Replacing Eran Segev's talk on education (family illnesses on a grand scale hampering his presentation) was a Skeptic's Q&A panel, giving the audience a chance to ask a wide range of questions that had obviously been nagging them for some time. These ranged for those on skeptical management issues to complex questions on scientific principles and results. One concerned why respected institutions are teaching chiropractic – the response was that it has gone into the mainstream and is recognised by health funds; it gets confused with massage; there are marketing pressures; and there are 'shruggies' in fund administration.

With the advent of internet, there has



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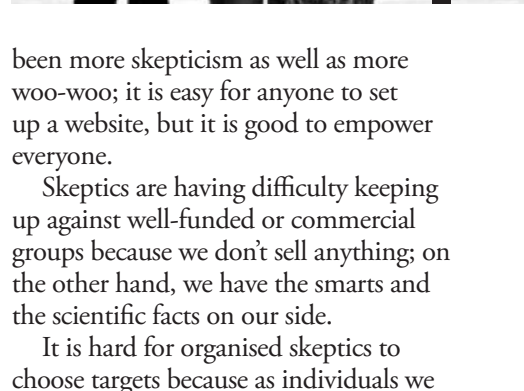
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been more skepticism as well as more woo-woo; it is easy for anyone to set up a website, but it is good to empower everyone.

Skeptics are having difficulty keeping up against well-funded or commercial groups because we don't sell anything; on the other hand, we have the smarts and the scientific facts on our side.

It is hard for organised skeptics to choose targets because as individuals we





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“I have returned home from Tam Australia exhausted, inspired and proud. It was a huge success and I can't wait for the next event. The international celebrities were certainly wonderful but so were the local contributors. The other significant outcome was the opportunity to meet people and to build relationships. Thank you once again.” *Mark Lumb*



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## SOCIAL EVENTS AND BONHOMIE

All Skeptical conventions are but the core of a wide range of get-togethers, whether formal or informal. TAM Oz was no exception.

On the Thursday prior, there were two main gatherings. One was at the usual Sydney Skeptics in the Pub venue in the CBD, attended by about 200 people, including many of the guest speakers (Randi, Dunning, the SGUers, etc). Surprisingly, 200 people in one room didn't seem to overtax the air-conditioning, but it did mean the bar staff earned their salaries.

Across the CBD was an open-mike function at another pub which attracted creative types of all sorts, gathered in a darkened room akin to a smoky jazz club (but without the smoke). Many presentations ensued, ranging from the serious to the humorous, including Jason Brown's rewriting of Monty Python's Universe song for a metric age, and Maureen Chuck's heartfelt suggestions on ensuring someone's final wishes are followed.

A number of people attended both pub functions, challenging both legs and liver.

On the Friday night was the SGU dinner, attended by about 270 people (apparently putting a severe strain on the Masonic Centre's table-installers). The Rogues held an auction of a guest session on the Science or Fiction segment of their podcast to be held the next day, and a whole session's participation for a later date. The latter went for \$1500, but the former was highlighted by the spirited bidding by Nick Southall on behalf of his 11-year-old son (and fanatic SGU fan) Alex. (See the sidebar elsewhere.) Alex won, and his father was out of pocket by \$900.

As an alternative that evening, Simon Taylor demonstrated mentalism and magic in the Grand Lodge – spooky feelings all round (see separate review in this article).

Saturday night was the cruise – free beer and wine (mostly), a buffet with pasta, and enough wind to blow several Skeptics into the drink. Fortunately none did – but who was counting? At least the weather persuaded many to bunch-up downstairs and converse like crazy. The out-of-town visitors had a chance to see Sydney Harbour by night, the Opera House, Harbour Bridge, etc – and some of those several times as the captain was wisely taking no chances in the choppy conditions.



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# AMAZING

Continued...

all have our own story and preferences, but the SAVN was a good example of a group coming together from heterogeneous origins.

And Randi's \$1,000,000 challenge will continue, despite the administrative overhead, otherwise people would claim it was shut down in order to prevent them claiming it. [SR]

## PSYCHIC PREDICTIONS REVISITED

With the year 2010 nearly complete, Richard Saunders and George Hrab marked the homework of psychics who had rashly made predictions for 2010. Noting that the media always fails to do this, most predictions (ie 93 per cent) were wrong, and the correct ones included vacuities such "Those who neglect to prepare will find it hardest to adapt" and "Prices may fall before rising". There were howlers such as "Barack Obama will have a positive year in 2010".

Prognostications that would have been useful but no psychic predicted included the Haiti earthquake, Polish air disaster, Eyjafjallajökull volcano (which no-one could pronounce), the Gulf of Mexico oil spill, the Melbourne Storm sport scandal, our first female Prime Minister (a scrying which Kevin Rudd would have found particularly useful), Pakistan floods, Christchurch earthquake, Chile mining disaster, NZ mining disaster, a royal engagement, and TAM being a huge success.

This, despite the Golden Rule which is to make as many predictions as possible, because the media will not check your score. [SR]

## EUGENIE SCOTT

Dr Eugenie Scott from the National Centre for Science Education reported on the alarming rise of creationism in Europe, America and Australia. Statistics show that in many countries there is a

lack of trust in the 'theory' of evolution with a reluctance to teach evolution in schools. Italy, Serbia and Turkey, for example, have all had educational controversies re the dropping of teaching evolution. Interestingly, the aetiology for such a trend is found not only in a swing away from science, but that cultural, religious, historical and of course, political factors all contribute. In 1977 the Creation Science Association was set and then in 2003 the Creation Ministries International was established which now has its HQ in Australia. It was no less disturbing as it was surprising to hear that Australia has been particularly keen to welcome the rise in creationism. So how can we account for it? Eugenie suggested that the rise in evangelical Protestantism was a key factor along with the political activism of conservative groups. [KW]

## ENTERTAINMENT PANEL

Geo Hrab (moderator), Julian Morrow, Simon Taylor, James Randi

Entertainment and its relationship with skepticism were the subjects of this panel. According to Julian Morrow, skepticism and comedy are aligned but do not necessarily overlap. His comedy is aimed at power structures and human folly - things with which skeptics are all too familiar. As the most experienced panel member, James Randi has seen occasions where entertainment obscured the message.

With comedy, a message is sometimes best delivered by allowing the audience to discover the joke. Geo pointed out that sometimes the message itself is not enough - it sometimes needs to be 'sexed up' as all writing must be entertaining. Being skeptical should not be the primary aim - there should be something to grab attention. Befittingly, and before making a scene stealing exit, Simon Taylor launched a passionate exposition on entertainment as a process of active communication in which the entertainer needs to know how to make a statement. In wrapping up, James Randi likened all entertainers, whether they are magicians or singers or comedians, to storytellers - that is how they connect with an audience. [JS]



## JOHN SMYRK

Pseudoscience is rife in management paradigms and many popular books and notions are quite unfounded. Simply put, innovation is driven by the value of a goal, balanced by the chance of failure, but modern trendy management ideas are typified by poor theory, no empirical support, false claims, negative benefits and a preponderance of marketing over product worthiness.

For example, after subliminal advertising was discovered in 1958, its proponent admitted the entire claim was bogus, but it is still with us today. Another vacuous work is the Myers-Briggs (an untrained mother and her daughter) personality index, which forces everyone into 16 sharply divided categories; if four people score +95, +5, -5, -95 on a scale, the middle two, despite showing great similarity, are divided and grouped respectively with the outer results. There has never been any advantage from using this and Carl Jung, on whose notions the MBTI scales are based, warned against dividing people into categories.

A popular 1980s book, *In Search of Excellence*, tried to argue that because a set of 43 successful companies all had eight habits, then following those habits should confer success. Within a short time after the book's publication, most of those 43 companies had failed while many noted that were as 'bad' companies prospered. Nonetheless, Peters has made a successful career out of his theories.

The rap up? Business managers are as prone to unsubstantiated theories as anyone. [SR]

## SKEPTIC ZONE

Dr Rachael Dunlop, Richard Saunders, Eran Segev, Stefan Soyka, Joanne Benhamu, Dr Krissy Wilson, Kylie Sturgess, special guest Dr Pamela Gay

The entire Skeptic Zone team met in person for the first time; all looking resplendent in their feather boas, and proceed to cover a variety of their recent investigations covered in past editions of the podcast.

Dr Rachie recalled her report on ear candles; listeners on public transport were guffawing.

'Dr' Stefan Sojka advertised his latest invention, which uses powerful X-rays to confer unusual health benefits as well as imparting a nice suntan, not to mention the wealth created by selling it in a pyramid scheme, with free life insurance (with oneself as beneficiary).

Krissy met Prof Chris French (anomalistic psychology) in Britain, where skepticism has really taken off, with SITP meetings in many large cities.

Eran had visited the full-sized Noah's Ark in Hong Kong, and nurse Jo was horrified at what she saw at the Mind, Body and Wallet festival - a lot of that stuff is harmless but there were cures for cancer and AIDS, and water promoted as a sunscreen (on children). Some visitors to the festival were clearly in doubt, so a skeptical presence is worthwhile, and our actions will be scaled up.

The team's guest, Dr Pamela Gay, uses skepticism to engender curiosity and inspire the imagination, especially of young girls; the proportion of females in science is still dropping to 11 per cent after university, although in nursing more male nurses are needed.

There are apparently bizarre student

projects that have wider benefit, such as making crop circles that involve solving engineering problems, or detecting acid rain by measuring the rounded edges of tombstones. Empowerment like this is positively displacing the woo-woo stuff, you don't need to be a scientist to take part, you just have to have a love of science. [SR]

## ROB MORRISON

Rob Morrison believes in reality, but how we perceive it made for an interesting, if somewhat disturbing insight into the workings of the eyes and brain. The audience was treated to a feast of illusions. While interesting in their own right, they served to illustrate important points of cognition. Our brains do not work like computers, but as pattern recognition devices. This has served the species well for survival and now we can appreciate how it works. The talk was punctuated with regular "ah ha" moments as the audience discovered these principles for themselves. This was probably the most interactive talk of the convention and the best choice for finishing on a high note. [PP]

## CLOSING REMARKS

James Randi closed the ceremony, describing the history of TAM over the years, building from a meeting of

26 people in Florida to a meeting of hundreds and thousands in Las Vegas, followed by the UK and now Australia. TAM Oz, he said, was a worthy member of that community of successful events. A moot point where and when the next TAM Oz would be held, but whatever the case, Randi would be there. And let's hope he will.

And let's hope we all will. ■

## PHOTO CREDITS

(All photos by Geoff Cowan except where noted.)

1. James Randi; 2. Grand Lodge at the Sydney Masonic Centre [photo: Cat Wilson]; 3. Maynard & Simon Singh; 4. TAM committee (back - Rachael Dunlop, Richard Saunders, Tim Mendham; front Randi, Eran Segev, Jo Benhamu); 5. Brian Dunning exultant [photo: Ruth Ellison]; 6. George Hrab [photo: Gail Miller]; 7. Krissy Wilson makes a point [Ellison]; 8. Loretta Marron [Miller]; 9. Dick Smith & Randi; 10. Tea time; 11. Barry 'Santa' Williams [Ellison]; 12. Law panel - Hadley, Cowdrey, Singh, Morrow; 13. SGU rogues - Evan Bernstein, Bob Novella, Rebecca Watson, Steve Novella, Jay Novella; 14. Simon Singh pensive; 15. Pamela Gay; 16. Fred Watson; 17. Simon Taylor; 18. Young Aust Skeptics Richard Hughes & Jason Ball with Watson; 19. Karl Kruszelnicki; 20. Freethought University Alliance; 21. SGU dinner - Dunlop, Saunders, Chris Higgins, Segev [photo: Alastair D'Silva?]; 22. Randi doll; 23. Rob Morrison; 24. TAM designers Thom & Rikki, Kylie Sturgess centre; 25. MC Paul Willis excited; 26. Richard Hughes (YAS), Dick Smith, & Singh and Alex Ritchie seated [photo: B. Sheep]; 27. Hrab tears a phone book; 29. Eugenie Scott

## STAR OF THE EVENT?

The most referenced person in the whole of TAM would have to be Alex Southall. 11-year-old Alex, categorised as "Boy Genius" on his name tag, is a fanatical follower of the Skeptics' Guide to the Universe, listening to the podcasts in his dad's car on the trip to and from school. He simply had to come, just to meet his heroes.

And he did, with bells on.

At the SGU dinner, his father outbid everyone else for a place for Alex on the SGU podcast the next day, and he proved himself a formidable participant

in the Science or Fiction component. Rebecca Watson fell in love with him, offering to take him home and saying he was nicer than Bob Novella. Jay Novella and Alex [at right] shared a microphone, with the lion's share going to Alex. And though he didn't correctly pick the 'fictional fact', he surprised everyone with eloquence and wit beyond his years. (Steve Novella's suggestion that "We learn from failure" elicited a rapid-fire



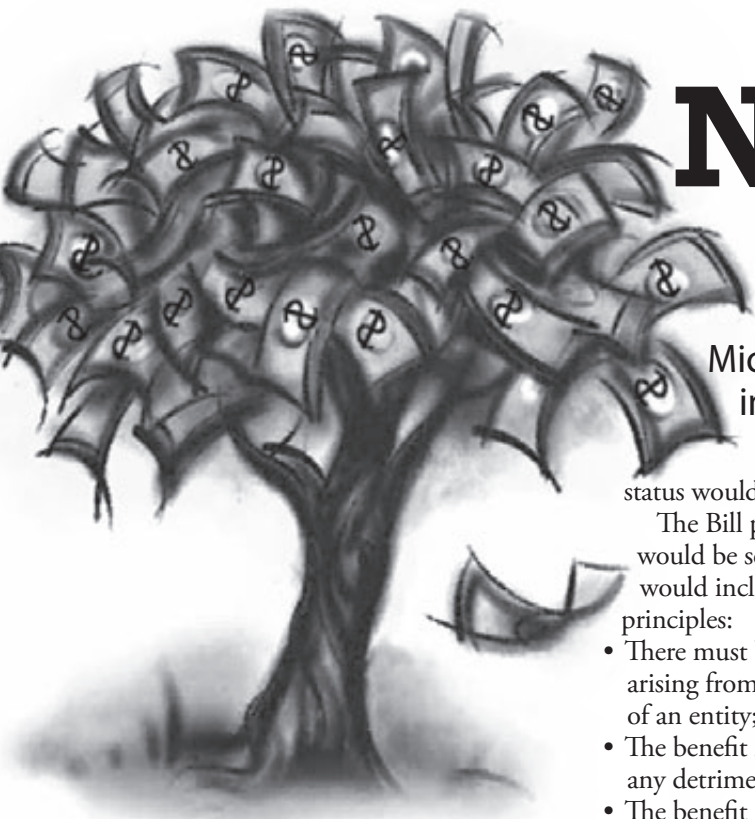
"Apparently" from Alex. Steve was stunned, or annoyed - hard to tell which.)

From then on Alex was used as a touchpoint for other discussions on the future of skeptics, the role of critical thinking in education and even the Skeptics' future organisational

management.

And one young lad spent the entire proceedings beaming from ear to ear. He was in the skeptical equivalent of heaven.





# NOT for PROFTT?

Michael Wolloghan reports on a Senate hearing into churches, charities and cults.

Religions and not-for-profit charities have always played an important and diverse role in sunburnt Australia.

Interestingly, in Australia, any public not-for-profit group is deemed 'charitable' in Australia and tax exempt if its main purpose and activities are for "the relief of poverty; the advancement of education; the advancement of religion; or other purposes beneficial to the community".

However, the general public's trust and confidence in the work of such groups - whatever it might be - has certainly wavered or at times been non-existent. Naturally, members of the public consider transparency and accountability to be of paramount importance in the not-for-profit sector.

In simple terms, people have often asked - "Where does all the money go and what is done with it?"

Unfortunately, many dangerous and destructive cults have been able to obtain tax exempt status because they allege they are religious institutions.

In May the federal Tax Laws Amendment (Public Benefit Test) Bill 2010 was introduced into the Senate as a private member's bill by independent senator, Nick Xenophon. The Bill wished to introduce a 'public benefit test' against which the aims and activities of a group seeking tax exempt

status would be assessed.

The Bill proposed that the test would be set out in regulations and would include the following key principles:

- There must be an identifiable benefit arising from the aims and activities of an entity;
- The benefit must be balanced against any detriment or harm; and
- The benefit must be to the public or a significant section of the public and not merely to individuals with a material connection to the entity.

Xenophon said the Bill was brought about by some immensely disturbing stories he had heard from victims of the Church of Scientology. He accused the group of being a "two-faced, criminal organisation" and believed that the Church's tax-exempt status needed to be immediately investigated.

After discussion and advice the Bill was referred to the Senate Economics Legislation Committee for a detailed inquiry and report.

A public hearing on the Bill took place over two days in June. Some of the witnesses who appeared at the hearing included former politician Dr Stephen Mutch, Cult Information and Family Support, the Atheist Foundation of Australia, ex-members of Scientology and - of course - the Church of Scientology.

At the hearing, Mutch commented on the not-for-profit sector. "This state of affairs is entirely unsatisfactory. It is inadequate. It is not transparent enough. It can be improved." He also astutely noted: "The Australian Taxation Office and other agencies have incorrectly or correctly, I am not sure, implemented a widely inclusive definition of religion. At the same time,

they have continued to accept the now outdated presumption of public benefit. This laissez-faire approach, in my view, allows a loophole through which all sorts of undesirable groups can gain access to tax exempt status as religious charities."

Former Scientologist Carmel Underwood passionately explained to the Committee that "the Church of Scientology is the furthest thing from charitable and is completely self serving. It is abundantly clear to me that the Church of Scientology is an organisation which looks after itself to the detriment of its members and society."

After some damning condemnation of Scientology, Ros Hodgkins, from Cult Information and Family Support (CIFS), made the point that "this is not about one or two groups".

"CIFS can confidently estimate that there are many hundreds - if not more; perhaps thousands - of groups operating within Australia that claim tax exemption simply because they claim a religious status".

This chilling claim would not go unnoticed by the Committee.

The Church of Scientology feebly defended itself at the inquiry. It had previously described attempts at an inquiry as a "political witch hunt". Michael Ferriss, from the New Zealand branch, was asked why his church had an income drop from \$2.6 million to \$374,000 from 2007 to 2008. He somewhat comically explained it wasn't anything to do with reporting to the newly established Charities Commission of New Zealand. "I think that drop in income, was actually, from memory, [due to] the exchange rate drop," he said, but later acknowledged he wasn't sure.

The inquiry finally adjourned after the Australian Taxation Office and the Department of the Treasury appeared before the Committee. It was clearly established by the end of the inquiry that very little was known about the size of the not-for-profit sector.

Estimations of the value of the tax breaks given to such groups varied wildly from \$1 billion to \$8 billion.

In September the Committee issued a report on its findings and recommendations.

It recognised that the 'third sector' receives considerable tax breaks and agreed the groups involved in this area should be extremely transparent and accountable. Nevertheless, the Committee felt the Bill presented was too narrow to respond to all of issues raised. It recommended that the government create a working group that would work towards making a single independent national commission for not-for-profit organisations. This commission would be somewhat akin to the Charity Commissions in the United Kingdom and New Zealand.

The role of this new Australian commission would include the following:

- Promote public trust and confidence in the charitable sector;
- Encourage and promote the effective use of charitable resources; and
- Develop and maintain a register of all not-for-profit organisations in Australia using a unique identifying number (for example, an ABN);
- Develop and maintain an accessible, searchable public interface;
- Undertake either an annual descriptive analysis of the organisations that it regulates or provide the required information annually to the ABS for collation and analysis;
- Educate and assist charities in relation to matters of good governance and management;
- Facilitate, consider and process applications for registration as charitable entities;
- Process annual returns submitted by

charitable entities;

- Supply information and documents in appropriate circumstances for the purposes of the Tax Acts;
  - Monitor charitable entities and their activities to ensure that registered entities continue to be qualified;
  - Inquire into charitable entities and persons engaging in serious wrongdoing in connection with a charitable entity;
  - Monitor and promote compliance with legislation;
  - Consider, report and make recommendations in relation to any matter relating to charities; and
  - Stimulate and promote research into any matter relating to charities.
- Perhaps one of the most fascinating recommendations was relating to the Attorney-General's Department.

It was suggested they provide a report on the operation of the French government agency, Miviludes (Interministerial

Mission for

Monitoring and Combating Cultic Deviances), and other law enforcement agencies overseas assigned with monitoring and controlling the unacceptable and/or illegal activities of cult-like organisations that use psychological pressure and breaches of general and industrial law to maintain control over individuals.

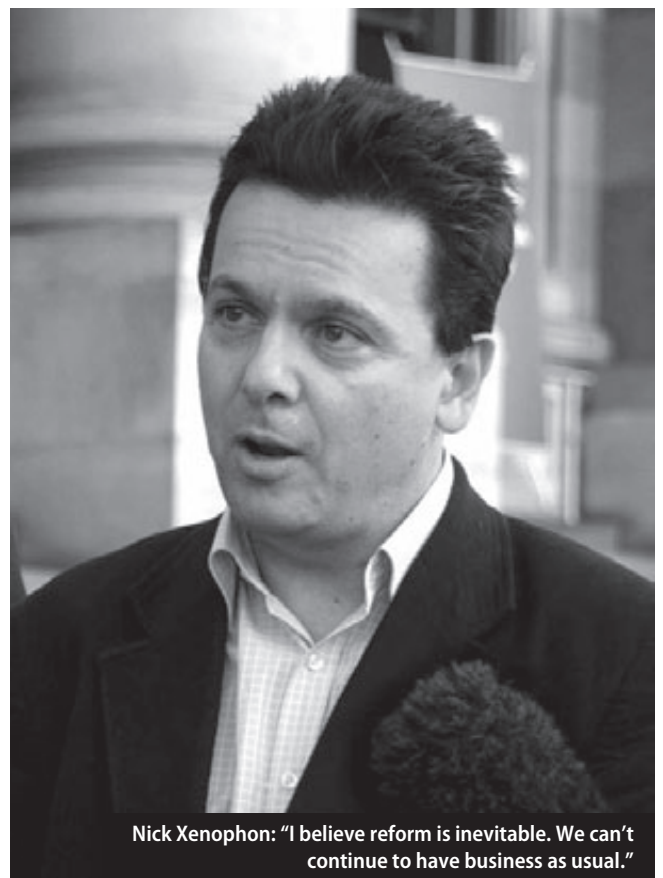
If a group like Miviludes were to be formed in Australia, it would be a major step in combating destructive cults. Indeed, it should be the responsibility of the government to ensure that people, especially minors, are

protected from these dangerous groups.

So far there has been positive bipartisan support for a charities commission. Xenophon said "I believe reform is now inevitable. We can't continue to have business as usual when it comes to organisations that have been beyond any reasonable level of accountability."

Alarming, soon after the Committee's report was released, the Victorian state government was under fire for sponsoring a controversial Scientology drug treatment group called Narconon. Former Scientologist Paul Schofield provocatively asked "Why is the Brumby government sponsoring a Scientology recruitment group aimed at vulnerable people?"

The powers that be have made effective efforts to look into the not-for-profit sector and hopefully won't become complacent. It's crucial that moves are made to prevent and combat aberrant organisations and individuals involved in them - because we shouldn't tolerate an intolerable situation. ■



Nick Xenophon: "I believe reform is inevitable. We can't continue to have business as usual."

# DRIP by DRIP

Martin Hadley and Tim Mendham report on another apparent breach of legislation by the AVN – one more in a stream of schemes.

Despite a string of findings against the AVN from various official bodies with prosecution a possibility (see below), you'd think that the AVN would tread ever-so-carefully to comply with the rules and regulations that apply to them.

Consider this: The AVN is prohibited under S9 of the Charitable Fundraising Act, 1991, from conducting "fundraising appeals".

A "fundraising appeal" comes under the Act when the fundraiser "represents" that the funds are being raised for a "charitable purpose". As well as the generally understood meaning of those words, the Act also includes "any benevolent, philanthropic or patriotic purpose".

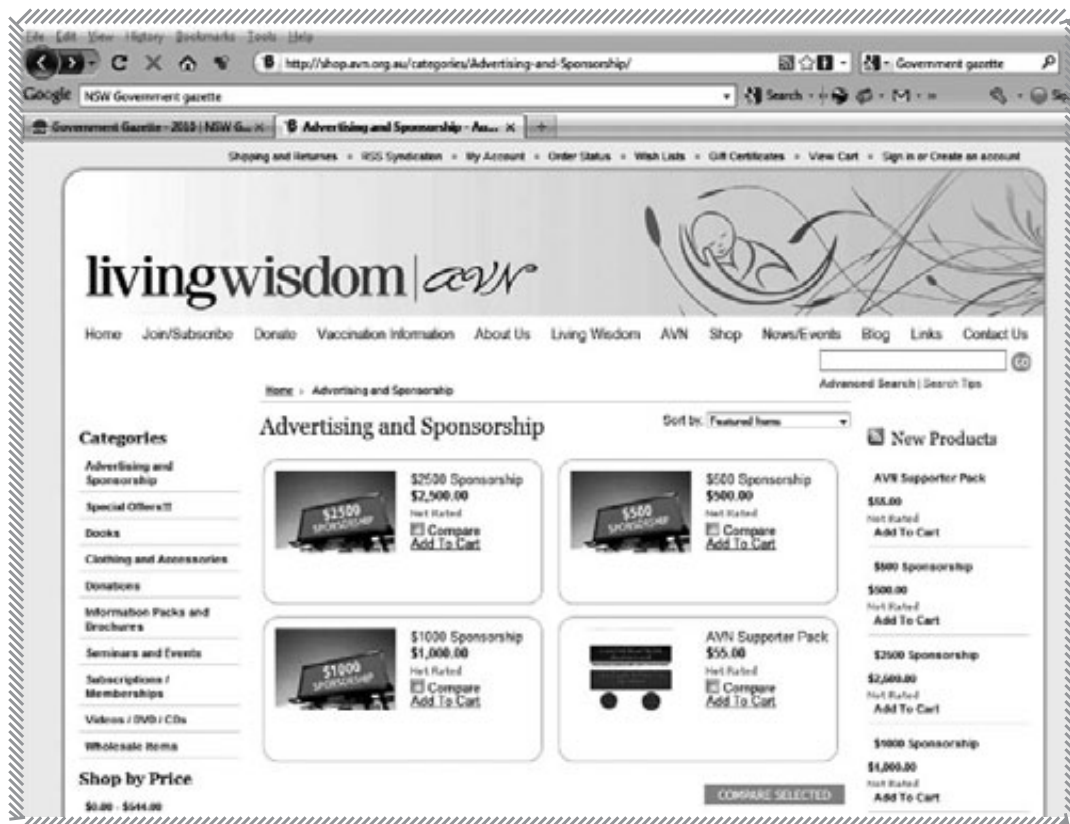
It continues with a wide definition covering any inflow of money whether or not the payer gets something back. Calling the payment a "sponsorship" does not evade the Act.

The only ways around the wide definition are a few specific exceptions:

- Membership fees;
- An appeal to "members only";
- Seeking bequests to go in a will;
- An appeal to fellow employees.

Going back to the definition of "fundraising appeal", clearly the AVN was *claiming* to be acting in that way. The responsible Minister eventually thought differently and revoked its licence on October 15. From the above you can see: no licence, no fundraising and, therefore, no sponsorships.

But what did we find on the AVN's website? You guessed it, appeals for money in the guise of "sponsorship" and



"commercial undertakings".

The AVN/*Living Wisdom* website sales pitch<sup>1</sup> for sponsorship asked businesses if they wanted to make a tax deductible sponsorship deal, with total value of the package offered by the AVN worth \$1782.00 in return for the \$2500 sponsorship.

Other sponsorships were offered for \$1000 and \$500 with the same pattern of partial value and an urge to claim the whole lot as a business deduction.

The interesting aspect is that not long after the "Advertising and Sponsorship" offer appeared on the AVN's website it was taken down, replaced by a more commercial "Advertising" offer, with goods and services worth \$2732 for the \$2500 ad rate.

But the NSW Office of Liquor Gaming and Racing (OLGR) has indicated that it would look into it.

**Above** Screen capture of the AVN/*Living Wisdom* call for sponsorships (now taken down).

The original action may have been somewhat imprudent given that the AVN will soon appear at the NSW Administrative Decisions Tribunal to appeal against the Minister's decision to cancel the AVN's Charitable Fundraising Authority.

No doubt the AVN will claim the sponsorship offer to be an "honest mistake", and such things do happen. But this latest event is one of many issues over the last 12 months which have made 2010 "interesting times" (at the least) for the AVN.

## AN UNFORTUNATE CALENDAR

On 11 February, the OLGR, which administers the Charitable Fundraising Act, conducted a flying visit to the AVN



bunker at Bangalow (near Byron Bay) to conduct an on-site audit, following the lodging of five complaints that the AVN was operating in breach of the Act.<sup>2</sup>

On 7 July the NSW Health Care Complaints Commission (HCCC), which administers the NSW Health Care Complaints Act, issued its report on the activities of the AVN and its occasional president and spokesperson Meryl Dorey. The HCCC found that the AVN “provides misleading and inaccurate information on the subject of vaccination”.<sup>3</sup> Further, the HCCC recommended (among other things) that the AVN post a disclaimer on its website to the effect that the AVN’s purpose is to provide information against vaccination in order to balance what it believes is the substantial amount of pro-vaccination information available elsewhere. The AVN refused to post that disclaimer.

On 26 July, following the AVN’s continuing refusal to display the disclaimer, the HCCC issued a public warning<sup>4</sup> that: “The AVN’s failure to include a notice on its website of the nature recommended by the Commission may result in members of the public making improperly informed decisions about whether or not to vaccinate, and therefore poses a risk to public health and safety.”

The HCCC report was followed by a storm of bad press, beginning with an ABC TV *Lateline* program in which Nobel Laureate Professor Peter Doherty described childhood vaccination denial as a “crime against humanity”.<sup>5</sup> Significantly, the media then began to routinely label the AVN as “anti-vaccination” and stopped calling on Meryl Dorey as the default talking head whenever vaccination was in the news.

On 4 August, *Lateline* revealed<sup>6</sup> that, following its investigation, the OLGR said its audit of the AVN had detected a number of breaches of charity fundraising laws, including fundraising without an authority; unauthorised expenditure; and failure to keep proper records of income and expenditure. The AVN was given 28 days to explain why it should be allowed to continue raising funds as a charity.

On 1 September, a *Sydney Morning Herald*<sup>7</sup> story showed that the AVN was “under fire for allegedly breaching

copyright laws by selling newspaper and medical journal articles online without permission from the authors”. It went on to say that the AVN withdrew 11 information packs from its website after complaints from authors.

This was the first time the AVN’s financial activities were attacked.

On 15 October, Kevin Greene, the responsible Minister for the purposes of the Charitable Fundraising Act 1991, revoked the AVN’s Charitable Fundraising Authority on the grounds that: fundraising appeals had not been conducted in good faith for charitable purposes; fundraising appeals had been improperly administered; and it is in the public interest.”<sup>8</sup> The Minister gave particular consideration to the AVN’s refusal to publish the disclaimer requested by the HCCC.<sup>9</sup>

So now, according to the Act, the AVN is prohibited from making appeals to the public for money in NSW. The AVN may continue to appeal to its members for money.

This was the second time the AVN’s financial activities were attacked.

In a letter to the three people who had submitted the complaints that had led to the OLGR’s audit, the A/Assistant Director Charities, Daniel Zuccanni, revealed that the investigation had detected:

- Five breaches of the Charitable Fundraising Act 1991;
- Two breaches of the Charitable Fundraising Regulation 2008;
- Ten breaches of the “conditions attached to an authority granted under the Charitable Fundraising Act 1991”; and
- Three breaches of the Charitable Trusts Act 1993.

Together, the fines applicable under the Charitable Fundraising Act total \$22,000, and one breach attracts a penalty of six months imprisonment. Penalties under the Charitable Trusts Act were not mentioned in the letter. OLGR has referred these matters to the Dept of Justice and Attorney General who, as we go to press, is considering what action to

take from here.

Dorey has said that: “Despite a very intense auditing process, the OLGR was unable to use fundraising or fiscal irregularities as an excuse to revoke our fundraising authority. They admitted that there were no serious breaches of the Act nor was there any evidence of fraud or other illegal activities.”<sup>10</sup>

That’s a bold statement, particularly considering the open-and-closed sponsorship deal.

The AVN is in no financial position to risk legal trouble. The latest available annual financial statement, covering 2009, includes an auditor’s

statement on page 20 that says: “There is an inherent uncertainty whether the Association will be able to continue as a going concern without the ability to continue to generate external funding from donations and sponsorships.”<sup>11</sup>

It will be interesting to see how many businesses regard the AVN advertising package as good value. ■

**“ There is an inherent uncertainty whether the [AVN] will be able to continue as a going concern ”**

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# Decision time



Martin Bridgstock suggests a way in which skeptics can make sense of abstruse scientific controversies, including climate change.

**H**ow should skeptics deal with scientific issues? I am not talking about paranormal claims of the kind we often see analysed in these pages. I am talking about controversies where scientists themselves seem to disagree, where a decision has to be made about what to do, and yet the arguments concern arcane scientific considerations. The safety of genetically modified crops is one example. So is the question of how long our fossil fuels will last. On many important issues, the non-scientific public needs to make judgements, and yet we do not have the expertise to do so.

This paper shows one way in which a non-expert can arrive at a reasoned judgement about an important scientific issue. I will use the issue of anthropogenic global warming (AGW) as an example of how the method works.

At the end of this article I will come to a conclusion about AGW, and you can then decide what you think of my method and my conclusions.

## THE CONTESTED TERRAIN

What is the AGW argument about? The key proposition in AGW is that human activity – cars, agriculture and so on – is increasing the proportion of certain gases in the atmosphere. These greenhouse gases – the best-known is carbon dioxide – have a well-established property. They are transparent to visible light, but not to infrared. So the sun's rays shine through the atmosphere and warm the Earth. The Earth, warming, then re-emits the energy as infrared, which is then partly absorbed and held close to the Earth by the greenhouse gases. It is logical to infer that, as the

concentration of greenhouse gases increases, the Earth will be warmed as well.

However, that simple inference does not necessarily follow. There is a whole set of processes happening, some of which lead to the Earth's warming, and some of which might restrain that process. For example, both an increase in carbon dioxide and a warming of the Earth could be conducive to the growth of more plant life. Plants absorb carbon dioxide, and so would tend to reduce any warming effects.

There are many other factors, and clouds are one of the most complex. On the one hand, clouds hold in warmth from the Earth. Most of us are aware that a cloudy night is usually warmer than a clear night. On the other hand, clouds tend to throw off the sun's

rays, reflecting them back into space. Therefore, whether clouds contribute to global warming, or restrain it, varies according to circumstances.

Imagine these types of process, and many more, being used to explain trends in the Earth's climate. To make matters more complex, land and ocean behave quite differently in affecting the climate, as do the various layers of the atmosphere, the ice caps and much more. It seems clear that the only way to understand and predict the Earth's climate is to construct huge computer models of how the climate behaves, building in all the many variables which may be important. The values of the variables must be closely estimated and the interactions between the variables properly described. Then, inside a computer, the model can be set going and the future predicted.

### IS GLOBAL WARMING A SKEPTICAL MATTER?

Should skeptics become involved in the AGW controversy? My first tentative conclusion is that, as far as I can tell, skepticism does not apply to the climate change issue. Why not? Well, according to the Australian Skeptics (2010), skepticism concerns the scientific investigation of paranormal and pseudoscientific claims. That is the heart of their definition of skepticism, and I recommend that all skeptics should be aware of it.

Now, the types of process I have described above are not paranormal, nor are they pseudoscientific. All are well established by research. In addition, linking them together in models to understand the Earth is a perfectly logical – indeed inevitable – next step. It is completely scientific: how could we possibly understand the Earth's climate if we didn't create huge theoretical models of how it all works? Of course, the models may be wrong in their predictions, but that is a necessary feature of science.

It follows that, since climate modelling is not paranormal, and is not pseudoscientific; it does not fall within the purview of skepticism. It is a genuinely scientific debate. However, the reason why everyone should be

concerned about the debate's outcome is obvious: if the climate change theorists are right, we have a major problem heading our way and we ought to do something about it. If not, then the AGW ideas must be firmly discarded. It is an important topic, and needs to be argued out.

My first step was to look at a few simple books and papers on the topic. The enormity and complexity of the issues rapidly became clear. To work my way to a point where I could understand and critique the various arguments about climate change would, I estimated, take between three and five years of study. I could not devote all my time to climate change research, as I have a family and academic responsibilities. In addition all, this work would not make me a fully-fledged climate scientist; it would simply put me in a position where I could make reasoned judgements on the claims of the real scientists.

Since I am 62 now, and most projects take longer than I expect, I might be aged 70 or more before I finally achieve my goal. Could there be another way?

**“ People we dislike can sometimes be right, and people we like can be resoundingly wrong.”**

### SOME BAD WAYS OF THINKING

I noticed that some people – skeptics and others – sometimes make decisions about the question of global warming on badly-considered grounds. They may take a stance on the issue because they disapprove of the people on one side of the debate. For example, they dislike tree-hugging bleeding-heart leftish environmentalists, or they hate rapacious corporations who will say or do anything to make a profit. A moment's reflection should show that this is not a very intelligent way of proceeding. In the real world, people we dislike can sometimes be right, and people we like can be resoundingly wrong. Our skepticism should lead us in the direction of wanting to look at evidence.

A second ill-considered approach is to take a single argument and use that to make a decision. For example, I

was talking to a well-known Australian skeptic a while ago, and he told me that he did not believe in climate change. His reason was that if the air near the Earth warmed up, it would rise through convection, and be replaced by cooler air, and so global warming would not take place.

The argument struck me as flawed at the time, but even if it is correct it is inadequate. Equally, a glib argument to the effect that “Humans are putting out more and more carbon dioxide, and that's why the climate is changing” simply does not stand up to any sort of critical consideration. The logical gaps in those arguments, and their total inadequacy, should be clear to anyone. As we have seen, a proper understanding of climate involves a massive assembly of processes and interactions: no one consideration decides the outcome completely.

Finally, I was struck by a comment from a Canberra skeptic when I presented my ideas on this topic. He said that he accepted that humans were causing global warming, but he was

angered by abuse from some pro-AGW people. I mentioned at the time that I had come across some recent, rather nasty abuse going the other way (eg Evans 2010). My own view is that abuse in any important issue is inappropriate, and that the best reproof we can offer is simply to concentrate upon evidence and argument: that is, we should regard abuse as beneath serious consideration. Closely linked to these arguments are those attacking the motives of one side or the other. I have seen suggestions that pro-AGW scientists are simply after research money, and that anti-AGW people are funded by energy corporations. These may, or may not, be true, but our key focus should be on evidence and reasoning: who is right, and why?

### EXPERT SCIENTIFIC OPINION

The dilemma I face should now be clear. Normal skeptical methods do not



## Decision time

*Continued...*

apply to the climate change controversy, because it is a genuine scientific debate. In essence it centres on whether the vast, complex models used to simulate the climate of the Earth can be trusted to any extent, or whether they are grossly misleading.

Short of spending all those years studying the science of climate change, how can I arrive at a reasoned conclusion on this matter? I have devised a method which allows me to tentatively come to some conclusions. If my method is reasonable, then it may be applied to other scientific controversies. If it is wrong, then I need to understand why.

My method begins with a suggestion by Bertrand Russell (1961). He argued that in an expert controversy, there is no certainty at all that the experts are right. However, he went on: if the experts are agreed that a particular proposition is true, then we cannot state with certainty that it is not. I would modify this a little, and say that we should take the considered opinions of scientific experts seriously. If they generally agree that something is so, we would require extremely good evidence – and a high degree of expertise – to say that it is not.

On the face of it, this looks almost as arduous as becoming a climate expert. How do we decide who is an ‘expert’ in a scientific area, and how do we examine what their opinions are? Luckily, this has already been done. William Anderegg and some colleagues (2010) compiled an enormous list of climate scientists who had published a report, or signed statements regarding whether or not climate change was due to human activity. Anderegg and his colleagues divided this list of 1372 scientists into those who were convinced by the evidence that humans were causing climate change, and those who were unconvinced. Roughly two-thirds of the scientists were convinced by the evidence.

Now a two-thirds majority among relevant scientists is nowhere near enough for us to conclude that the

experts are all agreed. It looks very much as though the issue is scientifically undecided. However, Anderegg and his colleagues went further with their research, and this changed the picture dramatically. They worked out who were the most productive of the 1300-odd scientists, as judged by their lists of relevant publications. The two hundred top scientists were then looked at, and a rather different pattern emerged. Of the top two hundred climate scientists in the world, 97.5 per cent were convinced by the evidence that humans were influencing climate change. This is quite startling, as it means that out of those 200 scientists, fully 195 were convinced by the evidence.

The picture becomes even more extreme when the top 50 scientists were investigated. Out of the top 50, Anderegg and his colleagues found, fully 98 per cent were convinced by the evidence that humans were playing a part in changing the climate. Turn that into real people, and only one out of the top fifty scientists in the relevant area is not convinced. Given the cross-grained nature of humans, I would judge that to be as near to a consensus as any real group of people can ever reach. My tentative conclusion is that despite many claims to the contrary, it really does look as if there is an effective consensus on climate change among top scientists in the area, and the consensus appears to be that humans are playing a part. Since I take scientific opinion seriously, this suggests to me that there is a good case for accepting AGW.

The Anderegg research is one piece of evidence which, to the non-specialist, might suggest that there is an appreciable human input into climate change: a huge majority of the top scientists think that this is so. Obviously, more evidence would also be welcome. Earlier, I estimated that it

might take me three to five years, from my current ignorance, to be able to understand all the issues concerned with climate change.

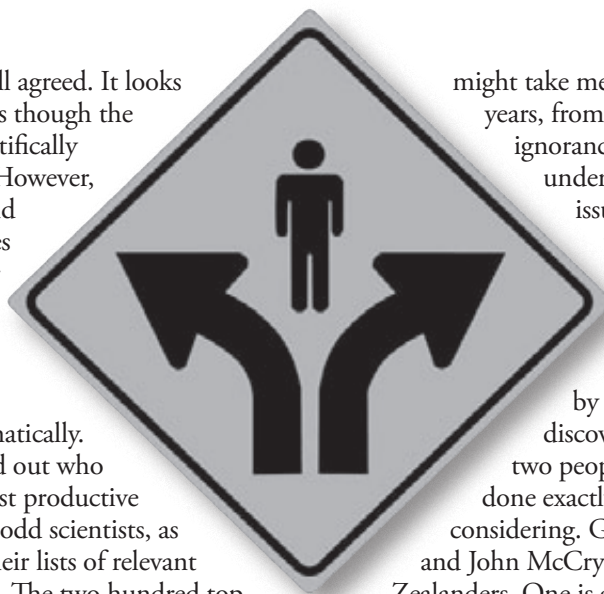
To my amazement, and quite by chance, I discovered that

two people have done exactly what I was considering. Gareth Morgan and John McCrystal are New Zealanders. One is a writer, the other an academic in a school of business. Between them, they decided to investigate the problem of climate change and decide who, behind all the shouting, was actually right.

When they began, Morgan and McCrystal (2009) were ‘agnostic’ on the climate change topic. They didn’t know who, if anyone, was actually right. They read the relevant literature, corresponded with leading proponents and opponents, and also invited people on both sides to comment on the main arguments of their opposition. The entire exercise took them 18 months, which is conspicuously faster than I could have managed.

In their book, they review the evidence and come to a considered conclusion: “On the balance of evidence, observations of the natural world would support a coherent theory of why increased concentrations of greenhouse gases due to human activity will produce significant global warming, in which case policy initiatives to address global warming and its consequences are worth evaluating ... It has to be said that only a few of the Sceptics are actually sceptics: too many are mere gadflies and deniers.” (Morgan and McCrystal, 2009: 248)

This is a pretty clear-cut verdict. Let me stress that it does not come out of the blue. Morgan and McCrystal spend a couple of hundred pages reviewing and evaluating the evidence. Indeed, their book is one of the best primers I have come across on the key issues. In addition, they have a website with



supplementary information, including pro and anti-AGW arguments. (Morgan and McCrystal 2010)

You may think that the last sentence of the quote is rather unpleasant to those who do not accept human influence on climate change. However, Morgan and McCrystal are at least equally tough on the other side. The scientists of the International Panel for Climate Change – the chief proponents of human-induced global warming – are characterised as arrogant, as being atrocious communicators and as having lost the public debate over the issue. In addition, scientists on this side are heavily criticised for the ‘hockey stick’ fiasco, in which a statistical curve was unjustifiably fitted to a range of data. On the other hand, Morgan and McCrystal’s conclusion about the ‘anti’ case is pretty tough: “Scientifically meritorious argument against the theory of anthropogenic global warming tends to be thin on the ground.” (Morgan and McCrystal 2009: 244)

It is worth noting that Morgan and McCrystal also add that much is uncertain about the future of climate change. Because of the uncertainty in the scientific models, neither the degree of warming nor its timing can be clearly established. I might also add that once we have accepted that we are causing climate change, there still remains the issue of how grave a problem it will be, and what we should do about it. These are separate issues, even more fraught by uncertainty.

I now have two different reasons for regarding human-influenced climate change as being probably a justified theory. I know that among top scientists in the relevant field there is a near-consensus, and that Morgan and McCrystal, starting from agnosticism, have ended up endorsing that position after much research. Of course, they could be wrong. On balance, though, I have to weigh up the probabilities, and these point in a pro-AGW direction.

## TWO OTHER POINTS

Two other considerations do weigh fairly heavily with me. I mention both of them with a good deal of caution, but they influence my view and they

may influence those of other skeptics. First, many prominent scientific bodies have come out in support of the theory of human-induced climate change.

After my presentation at the Australian National University, leading Canberra skeptic Nick Ware gave me a booklet published by the Australian Academy of Sciences (2010), titled *The Science of Climate Change*.

At the end, after reviewing the arguments and evidence, the Academy concludes: “We are very confident of several fundamental conclusions about climate change: that human activities since the industrial revolution have sharply increased greenhouse gas concentrations, that these added gases have a warming effect; and that the Earth’s surface has indeed warmed since the Industrial revolution. Therefore, we are very confident that human-induced global warming is a real phenomenon.” (Australian Academy of Sciences 2010: 16)

Other major scientific bodies have also made similar pronouncements. I find the statement by the Geological Society of America (2010) to be especially telling, since geologists are often among the most outspoken critics of human-induced climate change. This statement takes the view that: “... global climate has warmed and that human activities (mainly greenhouse-gas emissions) account for most of the warming since the middle 1900s. If current trends continue, the projected increase in global temperature by the end of the twenty first century will result in large impacts on humans and other species.” (Geological Society of America 2010)

Why am I influenced by statements like these? Am I deferring to people with important-sounding positions and titles? That is not my reason. In principle, it could be possible that the climate science community has got things wrong. Perhaps it is dominated by a few fanatics, or has been corrupted. These statements from major scientific bodies

resemble references. They are saying, in effect, “The science here is good, and the people are trustworthy.” To me, that is another point in favour of AGW.

I am influenced in my judgment by one further consideration. I will state it as carefully as I can, and request any readers to make sure that they understand exactly what I am saying, as it is very easy to misinterpret this point. Back in the 1980s, I first became involved with the Australian Skeptics over opposition to creation science in Queensland. Creation science, as we all know, is a pernicious doctrine based upon Christian fundamentalism. Its core is the view that the book of Genesis, literally interpreted, is a valid scientific theory, and can be treated as a scientific explanation of how the Earth and all its living organisms came to be. (Bridgstock 1986a)

The creationists were extremely skilful at creating organisations which looked, to the uninformed observer, exactly like scientific ones. There were research organisations such as the Institute for Creation Research and the Creation Research Society. There were ‘scientific’ journals, such as the *Ex Nihilo Technical Journal*. There were PhDs

who would speak eloquently and with conviction about the value of the ‘creation paradigm’. And there poured forth a mass of books, films and leaflets in support of

creationist claims. The book co-authored by Ken Smith and myself (Bridgstock and Smith 1986) is largely a critique of this propaganda assault.

And yet it was all fake. It was, quite literally, a pseudoscience. The creationists did almost no research, and relied on misrepresentations of genuine science for their ‘evidence’ (Bridgstock 1986b). For a long time, though, a huge section of the population accepted that creation science was in fact scientific. In the United States, many still do.

What I learned from this was that it is possible, given sufficient resources and determination, to create a

**“How do we decide who is an expert in a scientific area, and how do we examine what their opinions are?”**

# Decision time

Continued...

pseudoscience, a fake science. It will boast PhD researchers, will publish books and professional-looking journals, and will present a superficially convincing case for the most outlandish propositions.

How do you recruit PhDs for this kind of enterprise? I think there are two ways. No matter how weird your views, it is likely that somewhere in the research world there will be a few people with perfectly genuine PhDs who believe as you do. They can be hired and put to work. Then, other people friendly to your cause can gain PhDs through 'degree mills' which exist in the USA and, from time to time, in the UK. One prominent creation scientist, apparently, gained his PhD through a 'university' situated in a Florida motel! (Bridgstock 1986b). In short, given sufficient resources and determination, it is possible for someone with any belief – no matter how weird – to create a pseudoscience which supports his ideas. Obviously, we should be very wary of accepting the claims of any such pseudoscience. The problem remains, though, of how non-specialists tell the real from the fake.

There seem to be only two ways of working out whether a given body of dissenting knowledge is a genuinely scientific movement, or whether it is a constructed pseudoscience. One way is to acquire expertise. As I have already indicated, it could take several years to progress from being an ignoramus on a specialised topic to the point where one can make sense of it. The other way is to look at key indicators of scientific status. For example, have the proponents of the scientific dissent published papers in major scientific journals? Are an appreciable number of them widely acknowledged by their scientific peers as being first-rate authorities in the discipline?

Although the pseudoscience of creationism marshalled a fair array of PhDs, it turns out that many of them were not in relevant specialties, and

some were actually bogus. What is more, creation scientists made very little contribution to the scientific literature. Therefore, this strongly suggests that they were, in fact, pseudoscientists.

I am not suggesting that people who dissent from climate change are pseudo-scientists. However, it does seem uncomfortably true that the dissenters have contributed relatively little to the top work in climate change, which again rather resembles the contribution of creation scientists. Therefore, a handful of major papers in top journals would go a long way to dispel the question mark which hangs, in my mind, over climate change dissent.

## CONCLUSION

In this paper, I have tried to show how a non-scientist like myself can arrive at a reasoned conclusion about a complex scientific issue. I first noted that an overwhelming majority of top climate scientists do appear to accept that human activity is contributing towards global warming. Second, two non-scientists have already done what I was considering doing, and analysed the arguments and evidence pro and con, to come to a qualified conclusion that AGW is indeed happening. Third, major scientific associations, including the Australian Academy of Science and the Geological Society of America, have come out strongly in support of AGW. Finally, I am a little uneasy at the apparent similarity between some aspects of climate change dissent and the creation science movement: I would like to be convinced that the resemblance is only a passing one. Taken together, these points suggest to me that the case for AGW is probably strong enough to accept.

All of my reasoning and conclusions could be wrong. In that case, it should be possible to point out my errors and make an even better case for another conclusion. In the meantime, I am going to read relevant work by Lord Nicholas Stern and the International Panel on Climate Change. The question of what is to be done about climate change is at least as tricky as the question of whether it is happening. ■

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About the author:

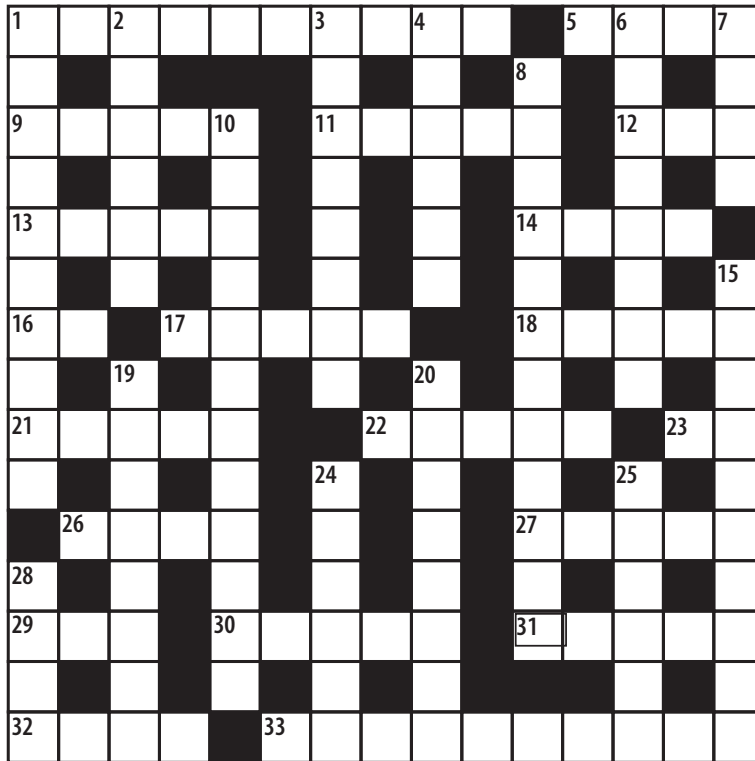
**Martin Bridgstock** is a senior lecturer in the School of Biomolecular and Physical Sciences at Griffith University and the author of *Beyond Belief*.





# Brain testers

## CRYPTIC CROSSWORD no 8



Tim Mendham + Steve Roberts

## DR BOB'S BRAIN BUSTERS

1. The ancient Persians preferred to make important decisions when they were drunk, and review them later when sober. What happened if they were sober and a new decision was urgently needed?
2. Which country or province is the world's largest supplier of legal opium products?
3. Ingmar Bergman's *The Seventh Seal* was premiered on 16 Feb 1957. Why are most Swedish-made films premiered just before or after Xmas?
4. If you were visited by Her Majesty Queen Elizabeth II and she said she fancied a cup of tea, how should you add milk and/or sugar to it?

Answers on page 62

## ACROSS

1. Expected score for a physician who mixes up car sales. (10)
5. A French negation of an unknown contributor. (4)
9. Not the low point for a magician. (5)
11. The low point, but not for a magician. (5)
12. Heard to be an old 15? It's enough to worry you. (3)
13. Nick the actor from the ethanol team. (5)
14. Not a victim, but nonetheless with some ability. (4)
16. & 23. Rousing support for a couple of gods? (2)
17. This drug starts off pure, if usually modified. (5)
18. Weight for a play? (5)
21. A terror to be terrorised. (5)
23. Gents in overseas portents. (5)
23. See 16 across.
26. Time to regret and correct. (4)
27. Hibernian is sort of angry? (5)
29. Regret the day you cull a marsupial? (3)
30. Retails prison accommodation? (5)
31. Doric projection said to collect rain. (5)
32. Brother queen or brother rabbit – it's all south to me. (4)
33. Expected score for a Moon goddess or a Moon dog? (10)

## DOWN

1. Expected score is a mundanity made extraordinary. (10)
2. For a UFOlogist, Jenny is a pretty poor lander. (6)
3. Taxonomist disappears into an alien sun. (8)
4. The global body is finished, just like zombies. (6)
6. Guiders Steve, Rob and Jay make short works. (8)
7. Divorcee found in the Northern Territory subsequently. (4)
8. Skeptoid burning, and in confusion. (5,7)
10. Familiar with pubs? Or just lacking a track record? (12)
15. Expected score is a group of words in need of recasting. (10)
19. Scary and selectively scared. (8)
20. Silly boars aim to find the food of the gods. (8)
24. Scallywags the rocky monster. (6)
25. How a digital dump would skulk. (6)
28. Skeptical singer George utilises the human resource muscle. (4)

# What's in the papers?



Research supporting a product that shields us from electromagnetic forces is lacking in method, detail and reason. Jason Brown is not surprised.

A new product that's smaller than a five cent piece but powerful enough to shield us from the potentially harmful electromagnetic radiation generated by mobile phones and other electronic devices, released amid a fanfare of publicity? Worth looking at?

The QLink Mini employs patented 'sympathetic resonance technology' (SRT) which can maintain the strength of naturally occurring protective energy systems within our bodies.

OK, if you can't smell the bullshit already, then your nose is broken.

The product is basically a small shiny sticker which you put on your mobile phone to shield you against harmful 'electromagnetic rays'. Let's just forget for a moment that those electromagnetic rays are what makes your phone work and that blocking them would make it unusable as ... well ... a phone, and look at the product itself, shall we?

But is it worth looking at? The fact it's selling widely, that fact it claims 'scientific studies' supporting it, the fact it's bullshit ... yes, it's worth looking at.

Ben Goldacre has already taken on the QLink (see sidebar). It is, of course, nonsense. It contains nothing more than a small resistor [note: a zero-ohm resistor!] unattached to anything. QLink's global advertising claims supporting research from Stanford, Penn State and Wollongong University. Interestingly, the Australian distributor doesn't mention Wollongong Uni, presumably because it's too easy to check up on the empty claim when the

university is just down the road.

This is just ridiculous. What's more ridiculous, it sells for A\$48. What's even more ridiculous, it comes as a pendant for A\$148. But wait – there's more ridiculous, there's a gold pendant version for A\$1598!

No, seriously. Over \$1500 for a \$0.002 resistor on a chain. Which doesn't do anything.

So this is just another sympathetic magic product, like Power Balance, for which ridicule should be deployed. If you've bought one, you're a sucker. If you know someone who's bought one, they're a sucker. If you see one, point and laugh.

Sydney's *Daily Telegraph* recently published a questionably-motivated piece of puffery on the Mini, written (or more likely simply boilerplated) by 'technology reporter' Stephen Fenech, brother of QLink-endorsing athlete Mario Fenech.

Not that I want to imply that there's anything untoward going on here, of course. (Did you read that in a sarcastic tone? Good.)


I asked Stephen Fenech, on Twitter, if he could give me some scientific peer-reviewed evidence to support his assertions.

[sound of crickets]

Helloooo?? Stephen? Looks like he's hiding.

This being the case, I figured I'd take a look at the evidence presented

by QLink itself in its 'scientific studies' link. Here goes.

 The first 'study' offered is "SRT™ and the effects of EMF on Human Brain Cells [Sept. 2002]".

This is a pilot study, so not a fully-blinded, well-controlled, large-sample study. Already one mark against it. The discussion calls out issues with the control (page 15) and mentions that it may be due to power source. Bad control is bad. The study was also single-blind. This is another no-no. This means that the subjects were unaware of whether they had QLink or control, but the experimenters were. And the experimenters did the gathering and analysis of results.

Oh dear.

Adding to this 'oh dear' feeling

**“ Bias could have not simply crept in but marched in wearing a kilt and playing a trombone.”**

is a line at the foot of the study which reads: "This research was funded by Clarus Products International, LLC, San Rafael,

CA, USA".

OK. Who are they? Well it turns out that Clarus is the manufacturer of QLink.


Oh dear oh dear.

Funding bias is a well-studied effect these days. This study has small samples, poor blinding, an inconsistent control and a clear funding issue. It also does not appear to have been peer-reviewed or published anywhere reputable.

Google Scholar finds the study only on [scientificcommons.org](http://scientificcommons.org). The single-blinding alone is enough to knock this out of the “clear support for the hypothesis” running.

Oh dear. Oh dear. Oh dear.

All told, a black mark. No points.

 The second paper is entitled “Effects of Q-Link® Pendant on the Blood and Biological Terrain [Apr 2001]” by Dr Robert Young.


My major problem with this study is that it's a live blood analysis. This consists of an experimenter gazing into a microscope at slides of a subject's blood, and interpreting what they see. Rather like looking into a crystal ball.

Though it claims to be double-blind, there are no details on blinding. There is no detail on what the “inactive QLink” control actually entails, since as far as Ben Goldacre could make out, all QLink pendants are inactive. The

attached pictures are low-detail, and I'm buggered if I can see a difference in the “live” slides. There's also no detail on how the “dried” samples were handled during drying.

The analysis is necessarily subjective and is not, in my opinion, valid in any way. There are many places in which bias could have not simply crept in but marched in wearing a kilt and playing a trombone, and this is not to mention the quack status of the technique itself. The “study” is just five pages long, of which about half is low resolution imagery.

Nil points to Dr Robert Young and QLink.

 The third study is “Effects of Q-Link® Pendant on Skin Conductivity Changes and Stress [March 2000]”

This one is an acupuncture study. I kid you not. A methodology that's been shown to have no measurable

effect beyond that of a placebo (a toothpick twisted on the skin, if you were wondering). And they're using it to... what?

The PDF of this study is graph-heavy and detail-light, but it looks like they applied a skin galvanometer to so-called ‘acupuncture points’, then blew a hairdryer (which they call the “applied stressor”) in the subjects' faces. They then compared “had a Qlink” to “didn't have a Qlink” and drew their conclusions. No, seriously. That's what they did. Oh, and they used an electrical muscle stimulator, but that's less hilarious.

Of course, the word “blind” does not even appear in the paper, so I can only assume that this experiment was unblinded, and that both experimenter and subject were aware of the presence, and presumably the purported function, of the pendant.

Big fat fail. Zero.

## BEN GOLDACRE ON Q-LINK - TESTED BY DORKS, POWERED BY CRYSTAL

It has been flattered by the *Times*, the *Mail*, and ITV's *London Today*, and I can see why. It's a very sciencey-looking pendant, a bit like a digital memory card for a camera, with eight contact pads on the circuit board on the front, a hi-tech electronic component mounted in the centre, and a copper coil around the edge.

Last summer I obtained one of these devices and took it to Camp Dorkbot, an annual festival for dorks held – in a joke taken too far – at a scout camp outside Dorking. Here, in the sunshine, some of the nation's cheekiest electronics geeks examined the QLink. We chucked probes at it, and tried to detect any ‘frequencies’ emitted, with no joy. And then we did what any proper dork does when presented with an interesting device: we broke it open.

Drilling down, the first thing we came to was the circuit board. This, we noted with some amusement, was not in any sense connected to the copper coil, and therefore is not powered by it. The eight copper pads do have some intriguing-looking circuit board tracks coming out of them, but they too, on close inspection, are connected to absolutely nothing. A gracious term to describe their purpose might be “decorative”. I'm also not clear if I can call something a circuit board when there is no circuit.

Finally, there is a modern surface mount electronic component soldered to the centre of the device. It looks impressive, but whatever it is, it is connected to absolutely nothing. Close examination

with a magnifying glass, and experiments with a multimeter and oscilloscope, revealed that this component on the ‘circuit board’ is a zero-ohm resistor.

This is simply a resistor that has pretty much no resistance – a bit of wire in a tiny box. It might sound like an absurd component, but they're quite common in modern circuits, because they can be used to bridge the gap between adjacent tracks on a circuit board with a standard-size component.

Now to be fair, such a component is not cheap. I'm assuming this is an extremely high quality surface mount resistor, manufactured to very high tolerances – well-calibrated and sourced in small quantities. You buy them on paper tape in 7in reels, each reel containing about 5000 resistors. You could easily pay as much as £0.005 for such a resistor. Sorry, I was being sarcastic. They are very cheap indeed.

And that's it. No microchip. A coil connected to nothing. And a zero-ohm resistor which costs half a penny and is connected to nothing.

I contacted [qlinkworld.co.uk](http://qlinkworld.co.uk) to discuss my findings. They kindly contacted the inventor, who informed me they have always been clear the QLink does not use electronics components “in a conventional electronic way”. And apparently the energy pattern reprogramming work is done by some finely powdered crystal embedded in the resin.

Oh, hang on, I get it: it's a new age crystal pendant.


Source: <http://www.badsience.net/2007/05/the-amazing-qlink-science-pendant/>





# What's in the papers?

Continued...

 The fourth study offered is “University of Vienna Analysis of Skin Conductivity [April 2001]”.


A slight digression. Do you know what an e-meter is? An e-meter is a device used by Scientology Auditors to measure reactions during auditing sessions. It is a low-sensitivity skin galvanometer. That is, it measures skin conductivity.

Before I've even opened the 78kb PDF I'm sighing at this 'study'.

And on opening it, it's worse. Not even single blinding. Really, University of Vienna? Are you not embarrassed, as an institution, to have this nonsense

out on the web?

Immediate fail. This one is discounted immediately due to the total lack of blinding.

 Fifth paper: “Effects of Q-Link Pendant on Human EEG Responses [April 2000]”

The PDF is just 6kb in size. No, seriously, 6kb. And I might as well post the whole thing right here, because, well... it's funny:

“EMF, EEG Brainwaves and the QLink Pendant”

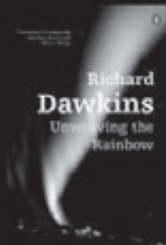
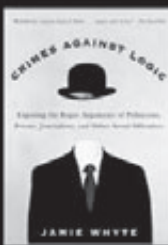
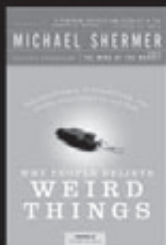
“Dr William Tiller, Professor Emeritus, Stanford University and Dr Norman Shealy, Holos Institute of Health, Founder American Holistic Medical Association and Board Certified Neurosurgeon, conducted a joint scientific study to explore the effects of EMF on human brain waves (EEGs). It is clear that people have different tolerance levels to EMF.

With this in mind, this EEG study was conducted to interpret the effects of EMF on humans and to determine the potential benefits of the QLink Pendant in aiding people to resist EMF. This double blind study involved 30 subjects and was conducted over the course of one year.

“Conclusions: This research showed significant indication of the QLink Pendant achieving a reduction of the effect of EMF on changes to brain wave patterns. The QLink has shown a capability to help prevent or diminish anomalous electrical activity in the brain caused by EMF sensitivity.

“Prior to these tests using the QLink, there had been no known approach for individuals that allowed them to resist the effects of EMF on brain functions. These tests show the QLink's capability for helping to regulate these effects.

“These conclusions are congruent



## { EmbiggenBooks }

*Reality is that which when you stop believing in it doesn't go away*

- BELIEF IN WITCHES: 22%
- BELIEF IN UFOs: 34%
- BELIEF IN ASTROLOGY: 41%
- BELIEF IN PSYCHIC POWERS SUCH AS ESP: 49%
- BELIEF IN LIFE AFTER DEATH: 53%
- BELIEF IN HEAVEN: 56%
- BELIEF IN HELL: 38%
- BELIEF IN ANGELS: 51%
- BELIEF IN MIRACLES: 63% [UP FROM 36% IN 1990s]
- THE HOLY BOOK IS THE WORD OF GOD: 34%
- THE HOLY BOOK IS LITERALLY TRUE: 27%
- GOD CREATED THE WORLD 10,000 YRS AGO: 23%
- THERE IS – OR SEEMS TO BE – NO GOD: 30%
- THE TEACHINGS OF MY RELIGION HAVE ONLY ONE INTERPRETATION: 21%


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Nielsen Australian poll December 2009

with the experiences of QLink users, who report enhanced mental performance, including increased ability to think and concentrate. The objective facts and conclusions of this study, as well as the subjective experiences of QLink users, indicate the QLink's ability to strengthen resilience and resistance to an electromagnetic (EMF) stressor on brain functions."


That's it. Seriously, that's all. No methods, no discussion, no statistical analysis, just a bald assertion from two 'holistic' doctors.

This one gets minus points from the science panel.

 Paper number six: "Application of Results Conducted (at Bart Cummings and John Morish Stables) to the Horse Racing Industry"

No date next to this one on the site, though it seems to have been carried out in 2001. Again, this is live blood analysis, the scrying of the quackery world, and the word "blind" appears only in a reference to a Tiller study. Tiller you may remember from the "paper" above.

Poor QLink. Still can't get a hit.

 Paper seven: "Effects of Q-Link ClearWave on Anxiety Levels within the Classroom [June 2001]"


Another 'Holos University' study, and it's tempting just to discount the study from that point onwards, but let's be good and soldier on. Again we have a mention of active vs inactive QLinks without any detail on what actually differs between the two. Since there's no described mechanism, how can anyone possibly know what's active or inactive? The results were gathered via subject survey. Not a great objective measure, but perhaps about as valid as it can get given the shaky foundations of the study itself. There's no real detail on the blinding, which states that subjects only used the devices when in the classroom. How were the devices handled outside these times? We're not told. How were they monitored when in the possession of the kids? We're not told.

The study's results differ between 'trait' and 'state' scores, one being

significant, the other not being so, though both control and QLink groups experienced a decrease in scores (1.9 and 3.0 averages respectively in a scale that ranges in score from 20 to 60). The numbers are a bit odd, with a very big disparity between the confidence levels of the two types, and as the experimenters themselves note:

"Do such decreases have a meaningful impact on the student's well being (social validity) and, if so, in which dimensions (academic, interpersonal, emotional, biological...)?"

Probably not.

 Paper eight, and we're nearing the end, folks: "Effects of Q-Link® Pendant on Muscle Weakness and other Chronic Symptoms Attributed to EMF exposures [May 1998] #1"

OK, let's get started and ... oh hell, what, really?


A study by a chiropractor using Applied Kinesiology as the method of data-gathering?

Seriously?

No, that's what it is. An unblinded, subjectively-measured, 20-patient case study on a non-existent condition (EMF sensitivity) conducted, again, with a 'control' of no known specification by a practitioner of a dubious and potentially dangerous form of so-called energy medicine.

The word "blind" does not appear in the study, and the endpoints were patient self-reports.

This is the worst failure yet. Minus two points.

 And oh, what the hell. The last study: "Effects of Q-Link Pendant on Muscle Weakness Patterns in the body [August 1997]"

An 11kb PDF, again outlining in hardly any detail yet another study using applied kinesiology as a methodology, conducted by another chiropractor and gabbling about "acupuncture imbalances".

I've fallen through the rabbit hole and woken up in Narnia. Minus ten for repeating the previous absurdity.

So there we go. Nine slabs o'bullshit. Minus thirteen points on the "is this

even valid" scale.

None of these studies can be rightfully regarded as either strong, valid or positive evidence for the efficacy of QLink, though that won't stop the distributors touting them as scientific support.

So, I've reported them to the ACCC via <http://www.scamwatch.gov.au/>. Others have reported Fenech to his own editors, rival newspapers and *Media Watch* for gross idiocy in trying this on while the internet was awake. Other technology writers pilloried the story mercilessly. The story was taken down from the *Telegraph* website soon after.

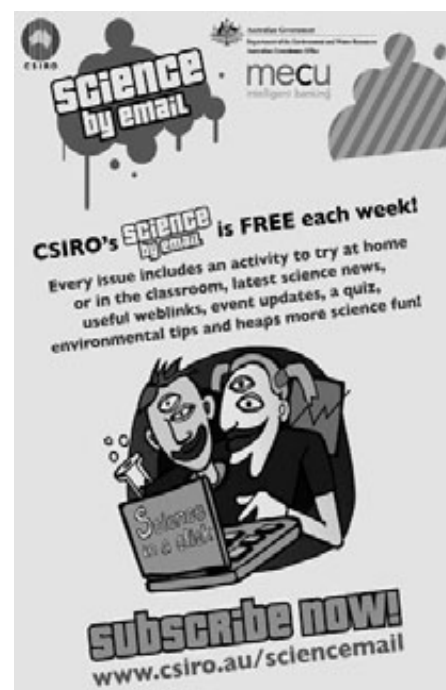
Let's see where that all ends up, shall we? ■

**Editor's note:** *This article first appeared on the author's blog site - see below.*



About the author:

**Jason Brown** publishes a blog at <http://www.mycolleaguesareidiots.com>, where you can find further updates on the QLink and a range of other products and topics.



# The cycle of life →

Conspiracy - stupidity – polyamory – creativity. And so it goes, the almost inevitable realisation that all knowledge is connected and connectable.

## EPIGRAMMATRY: THE ORIGINATORS

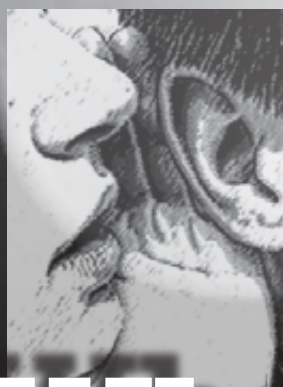
Robert Heinlein's 1941 short story "Logic of Empire" contains the statement: "You have attributed conditions to villainy that simply result from stupidity". It was speculated that Hanlon's Razor might be a corruption of 'Heinlein's Razor'. (Robert A Heinlein and Robert J Hanlon are not related.) However, another similar epigram - "Never ascribe to malice that which is adequately explained by incompetence." - has been widely attributed to Napoleon Bonaparte, and a similar quote appears even earlier in Goethe's *The Sorrows of Young Werther* (1774): "... misunderstandings and neglect create more confusion in this world than trickery and malice. At any rate, the last two are certainly much less frequent." alien technology.

**"Anyone who knows how difficult it is to keep a secret among three men - particularly if they are married - knows how absurd is the idea of a worldwide secret conspiracy consciously controlling all mankind by its financial power."**  
- Oswald Mosley

## STUPIDITY: THE RAZOR

Hanlon's Razor is an eponymous adage which reads: Never attribute to malice that which can be adequately explained by stupidity.

According to Joseph Bigler, the quotation first came from Robert J. Hanlon of Scranton, Pennsylvania as a submission for a book compilation of various jokes related to Murphy's law published in 1980 entitled *Murphy's Law Book Two, More Reasons Why Things Go Wrong*. A common (and more laconic) British version, coined by Sir Bernard Ingham, is the saying "*Cock-up before conspiracy*".



# What goes

## CREATIVITY: THE COUNTERCULTURIST

Science fiction writer Robert Anson Heinlein, sometimes called "the dean of science fiction writers", is also credited with popularising the notion of polyamory. While his 1959 novel *Starship Troopers* was regarded by some as advocating militarism and to some extent fascism (although many passages in the book disparage the inflexibility and stupidity of a purely militaristic mindset), in contrast his 1961 novel *Stranger in a Strange Land* put him in the unexpected role of a pied piper of the sexual revolution, counterculture and the notion of free love and polyamory.



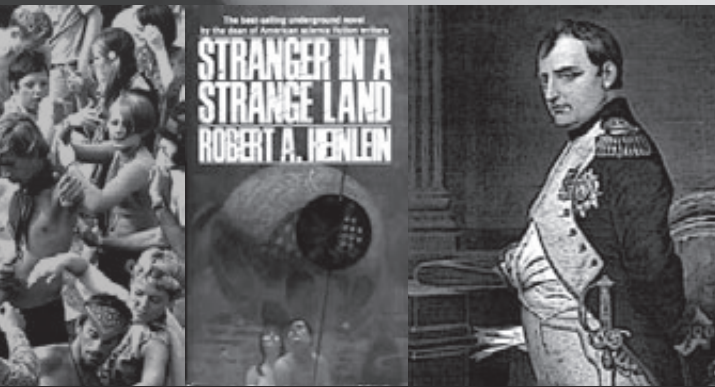
### CONSPIRACY: THE JOURNALIST

The full quotation given by Ingham is “Many journalists have fallen for the conspiracy theory of government. I do assure you that they would produce more accurate work if they adhered to the cock-up theory.” Ingham is a journalist and former civil servant who is best known as Margaret Thatcher’s chief press secretary while she was Prime Minister. Today Ingham lectures in public relations. Another victim of journalistic cock-ups was Bertrand Russell – his marriage to his third wife Dora grew increasingly tenuous and it reached a breaking point over her having two children with an American journalist, Griffin Barry. They separated in 1932 and finally divorced.



**“Secrecy is the beginning of tyranny.”**  
- Robert A. Heinlein

Pic credit: The Heinlein Prize Trust



# around ...

### NON-MONOGAMY: THE POLYAMORIST

Polyamory (from the Greek poly, meaning many or several, and the Latin amor, meaning love) is the practice, desire, or acceptance of having more than one intimate sexual relationship at a time with the consent of everyone involved. The word is occasionally used more broadly to refer to any sexual or romantic relationships that are not sexually exclusive. It is not the same as polygamy. Famous polyamorists include Emma Hamilton, her husband, and Horatio Nelson; and the 18th century King Gustaf III of Sweden and his Queen Sophie Magdalena, who reportedly used the services of a consummation consultant, Count Adolf Fredrik Munck af Fulkila. The latter was rumoured to be the father of the future King Gustaf IV.



**“America is a vast conspiracy to make you happy.”**  
- John Updike

Sources: Wikipedia,  
[www.stealthskater.com/Documents/Quotes\\_1.pdf](http://www.stealthskater.com/Documents/Quotes_1.pdf)

# I protest



Richard Hughes suggests good and bad approaches to making your views felt.

Everywhere I look, people are talking about dicks.

It started at TAM in Las Vegas, when Phil Plait gave his (now infamous) *Don't Be A Dick* speech. I haven't yet watched it myself, but my understanding is that Phil gave a rousing oration on the virtues of patience and charity to the strains of *La Marseillaise* before jet-packing into Washington and ending the Iraq war. Or something.

Naturally, at the mere mention of phalluses, the internet exploded. Some bloggers lauded Phil for what they saw as a stance taken on firm moral principles, while others leapt to the defence of dicks. Still more acknowledged that unprovoked dickery is a bad thing, but wondered if it was actually a substantial problem in the skeptical community in need of addressing – and if so, just who were these 'dicks'?

For me, however, it raised a different set of issues; ones to do with the idea of protestation. Seemingly sparked by the 'Crackergate' incident of 2008 (in which blogger PZ Myers threw a communion wafer in the trash), the skeptical community has been back and forth over the issue of what forms of protest are 'helpful' or 'legitimate'. More recently people on both sides of the 'dick' issue have charged their opposition with having a skeptical blind spot on the issue of tone.

Presumably there would be very few skeptics (if any) who would disagree

with me on the importance of free speech in a democratic society. No matter how much I may disagree with the form or message, I will always defend the right to protest – within certain legal and ethical bounds.

Similarly it would be uncontroversial of me to observe that not all protests are useful. To pretend otherwise – that no legal form of expression could be a hindrance – would be disingenuous (and trivially wrong).

The question then is not, "What forms of protest should we allow?" but "What forms of protest should we promote?" And how should we best go about conveying a message, rather than just causing a media stink?

I'm not going to attempt to tie down the exact ingredients for a 'good' protest here. As the American Justice Potter Stewart once famously quipped (about pornography), "I may not be able to *exactly* define what determines the quality of a protest, but I know it when I see it."

To that end I've tracked down two fairly recent protests, one of which is an example of protesting done well, the other an example of protesting done horribly wrong. Both share a common factor – Islam – yet the styles and causes are sufficiently different to draw distinctions between them.

We'll start with the good: Everybody Draw Mohammed Day. In early April of this year, the creators of the *South Park* cartoon series, Trey Parker and

Matt Stone, received public death threats from a fundamentalist Islamic group for creating an episode of the series that depicted the prophet Mohammed in a bear suit. In response, Comedy Central censored the episode by removing the word 'Mohammed', as well as a featured speech about fear and intimidation.

Enter Molly Norris. A Seattle-based cartoonist, Molly drew a one-off sketch in response to this censorship, portraying various anthropomorphised household objects, each claiming to be the prophet Mohammed. She also jokingly declared the twentieth of May to be the first annual Everybody Draw Mohammed Day.

Pretty soon the event ballooned on the Internet, taking on a life of its own quite separate from Molly. May 20 really did become Everybody Draw Mohammed Day, and around the world people posted pictures or interpretations of Mohammed on Facebook groups and blogs. While some people went overboard and drew pictures specifically aimed at offending Muslims, the vast majority drew inoffensive representations – the winner of the contest being a simple 'connect the dots' representation of Mohammed.

So, why was this a 'good' protest? First, the cause was a noble one: standing up for free speech, and against censorship, is something that I'm always going to get behind. I'd hope all



other right-minded people would do the same.

Equally as important was the manner of the protest. It was constructive, rather than destructive; to participate, all that you needed to do was draw an inoffensive picture of Mohammed. Or draw a stick figure, and label it 'Mohammed'. Or find some old Islamic art that portrays Mohammed, and post that. All acts that, in a sane world, would be meaningless as a form of protest in the first place.

Compare that, then, with the bad: the recent ravings of Terry Jones, the formally obscure Florida pastor who declared September 11 of this year to be International Burn a Koran Day. Ostensibly a campaign against 'radical Islam', Jones' plan to burn a large number of copies of the Koran casts a far too wide net – the Koran being a book important to all of the 1.57 billion Muslims worldwide, and not just the fundamentalist minority.

Worse than that, however, is the actual manner of protest. The act of burning a book is intrinsically oppressive. From the immolation of early Christian texts to the Holocaust-era Nazi purge of 'degenerate' books, the message has always been the same: neither you, nor your ideas, are welcome here. The act is, in and of itself, an implicit threat.

As skeptics, we ought to ally ourselves (where appropriate) with the first type of protest, and publicly distance ourselves from any within our ranks who would take the second road. If we are to champion ourselves as models of reason, we must protest unreason constructively, and not by resorting to the petty threats of unreasonable thugs. ■

About the author

**Richard Hughes** is president of the University of Melbourne Secular Society, and a member of the Young Australian Skeptics. His blog is at [www.divisiblebypi.com](http://www.divisiblebypi.com)



# Off Balance

Tim Mendham reports on the Power Balance's latest brushes with infamy.

The promoters of Power Balance wrist bands are in trouble again. This time the Australian Therapeutic Goods Administration (TGA) has ruled against them.

As the Victorian Skeptics have reported (<http://vicskeptics.wordpress.com/>), the decision says in part that "In reaching this conclusion, the Panel noted that the claims made in the advertisements were extraordinary to such a degree that no reasonable retailer could publish them on the basis of assurances from the product sponsor, without requesting evidence that such claims could lawfully be made about the product."

The TGA hearing was in response to a complaint from noted medical campaigner and Victorian Skeptic Dr Ken Harvey. Ken argued that the benefits claimed for the product were "biologically implausible".

Power Balance wrist bands are coloured silicone rings with two small plastic holograms glued on. The popular bands sell for about A\$60. A pendant version sells for about A\$90. The promoters of Power Balance claim the bands somehow, magically, improve your strength and balance.

Those claims include that "The Power Balance, after years of research and development, has produced a system to safely restore and optimise the electro-magnetic balance within the human body ... IMMEDIATELY [their emphasis]".

The advertisements, placed by Power Balance Australia P/L, also went on to say that "Power Balance's Mylar Holographic Disk ... has been imbedded with an electrical frequency that restores your body's electrical balance, promoting a free exchange of positive and negative ions and align your body's energy pathways."

The TGA finding said that "It was clear that the claims made about

therapeutic benefits from the product had not been verified, were misleading, and were likely to arouse unwarranted expectations regarding its effectiveness. The Panel noted that Power Balance had provided no evidence in support of the claims, and no indication that such evidence existed."

The TGA has asked that Power Balance withdraws its advertisements from further publication, withdraw any claims about the product's effect on "electro-magnetic balance" etc. It also asked for a retraction to be placed prominently on the supplier's website. As of November 23, that retraction has not appeared on the company's website.

But the TGA wasn't the only group having a go at the Power Balance. Choice, the consumer advocacy group, listed Power Balance as one of its Shonky awards for 2010. The Shonkys are given as part of Choice's action to name and shame the biggest rip-offs and scams of the year. Power Balance won for being "stronger, bendier, balancerder, dumber".

Inspired by the Skeptics' own test of the bracelet, Choice put Power Balance through a series of tests, and found that "The only power this bracelet seems to have, placebo effect notwithstanding, is in tipping its distributor's bank balance well and truly into the black – they're reportedly raking it in. So, if a fool and his money are soon parted, there are apparently plenty of fools out there – and they're all conveniently identified with a rubber band bracelet. If you see one, offer to sell them a bridge."

But will this double-barrel debunking of the product stop it from selling by the bucket load? Will there always be suckers for a shonky products? Highly likely, despite the evidence against its efficacy. Power Balance will no doubt continue to sell, along with a number of variations on the same theme such as Eken, QLink, Shuzi and Phiten, among others. ■





# The Evidence is Wrong

Chris Borthwick looks at the work of John Ioannidis, and the contention that most published research findings are false.

We skeptics like to contrast our adherence to evidence-based medicine based on peer-reviewed research to our adversaries' unsupported woo. And this is, of course, absolutely correct; evidence is better than no evidence. In the windy darkness of our ignorance, the smallest flickers of knowledge can give us some light to guide us. We skeptics do tend, however, to overstate our case – to suggest, sometimes, that we are contrasting truth with lies, or certainty with guessing, or right with wrong.

The truth is that it is very difficult indeed to approach the truth, and we must in almost all cases be satisfied with a good deal less. The methods of science, as now defined and as now practiced, may indeed be the best method there is of approaching truth; but that does not exclude the possibility that our approach is, to paraphrase Churchill, the worst possible way of doing it, except for all the others we've tried from time to time.

In the most general possible terms, any attempts to prove that the scientific method is the best possible will inevitably fall foul of the inductive fallacy. The fact that the scientific method has so far proved the most successful of all ways to seek reliable information about the world does not mean that tomorrow a better one will not be devised.

In the most specific possible terms

– well, that's where the research of John Ioannidis into problems with medical statistics comes in.

Ioannidis' most famous paper is "Why Most Published Research Findings Are False" (*PLoS Med.* 2005 August; 2(8): e124, online at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1182327/?tool=pubmed>). Ioannidis is not being provocative, or speaking loosely, or seeking publicity; he is attempting to prove what he asserts, which is that: "There is increasing concern that in modern research, false findings may be the majority or even the vast majority of published research claims. However, this should not be surprising. It can be proven that most claimed research findings are false. ....

**“ There is increasing concern that false findings may be the majority or even vast majority of published research claims. ”**

Simulations show that for most study designs and settings, it is more likely for a research claim to be false than true. Moreover, for many current scientific fields, claimed research findings

may often be simply accurate measures of the prevailing bias.”

And he makes a pretty good fist of it. He tracks down some of the causes: “a research finding is less likely to be true when the studies conducted in a field are smaller; when effect sizes are smaller; when there is a greater number and lesser preselection of tested relationships; where there is greater flexibility in designs, definitions, outcomes, and analytical modes; when there is greater financial and other interest and

prejudice; and when more teams are involved in a scientific field in chase of statistical significance”.

He runs the math: “[In this hypothetical case] in the absence of any bias, when ten independent research teams perform similar experiments around the world, if one of them finds a formally statistically significant association, the probability that the research finding is true is only  $1.5 \times 10^{-4}$ .”

I wouldn't back a horse with those odds.

The trend of his later research may be seen in his article titles: “Limitations are not properly acknowledged in the scientific literature” (*J Clin Epidemiol.* 2007 Apr;60(4):324-9. Epub 2007 Jan 22), “Perfect study, poor evidence: interpretation of biases preceding study design” (*Semin Hematol.* 2008 Jul;45(3):160-6.), “Adverse Events: The More You Search, the More You Find” (*Ann Intern Med* February 21, 2006 144:298-300). The more he looks, the more he finds to support his doubts.

And he's not just taking aim at the fringe, either. In “Contradicted and initially stronger effects in highly cited clinical research” (*JAMA.* 2005 Jul 13;294(2):218-28) he looked at 49 of the most highly regarded research findings in medicine over the previous 13 years, judged by citation impact – articles that led to the widespread adoption of hormone replacement therapy for menopausal women, vitamin E for heart disease, coronary stents for heart attacks, and daily low-dose aspirin to control blood pressure and prevent heart attacks and strokes.

45 of the 49 articles claimed to have



John Ioannidis - among the ruins of yet another piece of poor research?

aren't absolutely correct."

Ioannidis' attack is, of course, evidence-based, and his metrics do rely on later research correcting earlier research. In the long run, it may all come out right. The trouble is that we don't live in the long run. I myself have been on extended periods of medication based on at least two of those 49 articles (aspirin and anti-depressants, to be fully transparent). The truth is great, certainly, and it will prevail, but that doesn't mean it has actually prevailed right now this very moment when you're asking the question. In fact, the odds are against it.

So what's the takeaway? Freeman quotes: "We could solve much of the wrongness problem, Ioannidis says, if the world simply stopped expecting scientists to be right. That's because being wrong in science is fine, and even necessary - as long as scientists recognise that they blew it, report their mistake openly instead of disguising it as a success, and then move on to the next thing, until they come up with the very occasional genuine breakthrough. But as long as careers remain contingent on producing a stream of research that's dressed up to seem more right than it is, scientists will keep delivering exactly that.

"Science is a noble endeavour, but it's also a low-yield endeavour. I'm not sure that more than a very small percentage of medical research is ever likely to lead to major improvements in clinical outcomes and quality of life. We should be very comfortable with that fact."

So - are you feeling comfortable? ■

uncovered effective interventions. Only 34 of these claims had been retested (a problem in itself) and 14 of these (41 per cent) had been refuted or shown to be significantly exaggerated.

Studies at this level are just about the best we can do, and they're wrong two times out of five - good enough for a recreational bet, but you wouldn't want to put the house on it (and we're not even thinking about research in psychology, which I would imagine comes in around the  $10^{-7}$  mark)

For a good introduction to Ioannidis' work turn to an article, "Lies, Damned Lies, and Medical Science", by David Freeman in *The Atlantic* ([www.theatlantic.com/magazine/archive/2010/11/lies-damned-lies-and-medical-science/8269](http://www.theatlantic.com/magazine/archive/2010/11/lies-damned-lies-and-medical-science/8269)).

Freeman says: "His model predicted, in different fields of medical research, rates of wrongness roughly corresponding to the observed rates at which findings were later convincingly refuted: 80 per cent of non-randomised studies (by far the most common type) turn out to be wrong, as do 25 per cent of supposedly gold-standard randomised trials, and as much as 10 per cent of the platinum-standard large randomised trials."

Freeman also quote Doug Altman, an Oxford University researcher who directs the Centre for Statistics in Medicine: "You can question some of the details of John's calculations, but it's hard to argue that the essential ideas



About the author

**Chris Borthwick** works for *Our Community*, a support organisation for Australian not-for-profit groups.

# He loves me He loves me not

CJ Werleman reckons the love/hate relationship between God and her customers may be weighted more to one side than the other.

In a new book by CJ Werleman, the proposition is put that *God Hates You, Hate Him Back*. Elsewhere in this issue, Geoff Cowan reviews the book, but in this interview, he discusses the themes of the book with the author, to discover why we are scared to upset Christians ... and Creationists.

**Q** *What's with the name of the book, *God Hates You, Hate Him Back*?*

**A** Finding the right title was, practically, the hardest thing in producing the book. I believe I went through a dozen or so working titles throughout the writing process, but none captured the true essence of its message. In the final weeks before the due release date, a close mate was talking off the cuff about a scene from *Lethal Weapon 2*, whereby Danny Glover's character says, "I think God hates me!" To which Mel Gibson's (insert your own joke here) character replies, "Well, do what I do. Hate him back." This was the light bulb moment.

The title, I believe, is in synch with the message. That indeed the God of the Old Testament hates any person that is uncircumcised, and he goes to extraordinary lengths to ensure that societies sporting the 'unclean' penis are mercilessly ethnically cleansed at the hands of his wandering, xenophobic, illiterate, misogynistic, and bloody thirsty chosen few. So, if you're not an ancient Hebrew, why not hate him back? I do.

**Q** *You refer to the Bali bombing in the introduction of your book. How much influence did this incident have on the writing of the book?*

**A** Well, I was always suspicious of religion, even as a child. From my early perspective, it seemed to make otherwise intelligent friends and family say some outrageously stupid things. So I made a decision that I didn't need another influence in my life to make a fool of myself. I was already a consistent master of the idiotic statement, as evident by the fact I once tried to convince anyone who'd listen that Tiger Woods would never win a Major.

As for the religiously motivated suicide attacks on Bali in 2005, I guess that that tragic experience was responsible for lighting the motivational fire to dedicate the proceeding several years examining the Abrahamic texts.

**Q** *What was your motivation in writing the book?*

**A** My initial motivation was purely to read and understand the Bible. I've always been a voracious reader, almost to a fault, but it had never even crossed my mind to read God's biography. I mean, let's be honest, the book has a reputation for being as boring and tedious as *Mein Kampf*. But what I soon discovered that once I started paraphrasing different passages to friends, is the Bible is a truly fascinating and entertaining read. For starters, there are more than 200

references to the male genitalia, and who doesn't enjoy a good dick joke?

Ultimately, of all the biblical reference books I had come across, none told the stories, chapter by chapter, in a way that it is entertaining and easy to understand. I believe this is what makes 'God Hates You' unique, and is the reason it has been received as well as it has. Phew!

**Q** *You stated that your intention was to de-mystify the Bible; do you think you have done this?*

**A** I hope so, as that was certainly the objective when I set out to write it. I've had others comment, "Your book has finally made the Bible accessible to people who ordinarily would never dedicate the time to reading the Holy Book from cover-to-cover." If this sentiment is shared by a majority of my readers, and I'm hopeful that's the case, then I've been successful in what I set out to do.

**Q** *Have you received any grief from the god botherers?*

**A** Surprisingly and thankfully, I haven't received an overt death threat. Although, I did hear Christopher Hitchens once said that the guy who doesn't threaten you, is the one to worry about. So there's that, I guess. But most of the hate mail, or the 'doing God's service' mail, comes typically in the form of, "You're going to burn in hell, asshole" or "You're a disgusting heathen maggot!" But I'm OK with all that. It's the condescending "I'm glad you're on the path to Jesus and the truth" types that really push my blood pressure into the hypertension zone.





God hates the author, C J Werleman

nuanced strategy and so forth.

I included the body count metric at the conclusion of each of the Old Testament chapters as a reminder of the atrocities God committed at each step of the journey to the Promised Land. It reminds us that, at least in God's mind, the ends justify the means.

**Q** *At the beginning of the chapter on Leviticus, you state that this chapter is pretty much irrelevant today. Do you think the Bible is irrelevant, period?*

**A** Much of Leviticus is irrelevant today because it reads as an ancient Hebrew cooking manual. It includes the minutiae of preparing a grain offering or animal sacrifice, and the correct method for burning incense. (Interestingly, a recent study in the UK has linked the fumes from incense to respiratory ailments. Thanks again, God.)

I would never say the Bible in its entirety is irrelevant, as it remains the most significant book in the history of western civilisation, but it is irrelevant as a guide to modern moral behaviour, unless you think marrying a 12 year old is a swell idea or trading your wife for two camels and a goat is good business. More importantly, it is irrelevant in its ability to help mankind deal with the big issues we face today – global warming, stem cell research, sustainable habitats, economic management, and so forth.

**Q** *I love the section where you explain, in detail, the section of Leviticus that many Christians cite in regards to homo-sexuality. You enter into a complete list of all the other things that people are not allowed to do, such as two crops per field, that your son can be stoned for cursing daddy etc. As a result, you use the term*

*“Cafeteria Christian” which indicates that believers select certain items on the menu, rather than others.*

*Do you think that Cafeteria Christians undermine the church or demonstrate how the church selects its own because it knows it can't stone teenagers but it can insult homosexuals?*

*Do you think that if atheists push these contradictions, that perhaps, some believers will start to question their belief?*

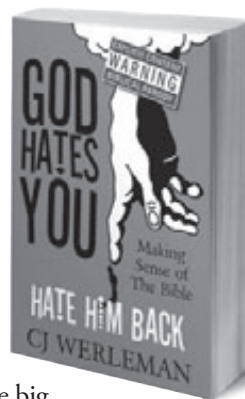
**A** Well, the Cafeteria Christian is born from the fact that a vast majority of Christians have either never read the Bible or not understood it. One particular survey that I cite in the book is one that examined Bible literacy in the United States. The results of that are staggering. While 93 per cent of American households contain at least one copy of the Good Book:

- More than 50 per cent don't know that Genesis is the first book of the Bible.
- More than 50 per cent can't name even one of the Gospels.
- More than 60 per cent can't name at least five of the 10 commandments

It's fair to conclude that, for a majority of Christians, their understanding of the Bible is limited to the sound-bites heard during Sunday's prayer group – “Jesus forgives”, “Love thy neighbour”, “Turn the other cheek” and so on. Moreover,

I know Christians that have called themselves such for the better part of

30 years or more and they've got no clue just how barbaric some of God's 613 commandments truly are. While they're familiar with the phrase “the fall of Jericho”, few understand that this was a thorough God-led genocide of the most heinous kind. But what evangelical minister, whose salary is drawn from the tithing of his flock, is going to educate his sheep with the barbarism of the Old Testament, and the immorality of blood sacrifice within the New?



**Q** *The book shows the many contradictions in the Bible. Why do you think there are so many?*

**A** Simply because it has so many authors, most of whom are anonymous. And no Wikipedia for fact checking. The Old Testament alone has more than 40 different authors, and then we get to the terrible mismatch of irreconcilably varying accounts of the multiple authors of the New Testament, all whose identities remain unknown to us, with the exclusion of Saint Paul.

The further difficulty the New Testament runs into is that the respective accounts (Gospels) of Jesus' life are dressed up as eye-witness accounts, when in fact, these stories were written 30-70 years after he was alleged to have lived. You can imagine the difficulty this presents. It's a real hack job, and one that I present in great detail in my next book.

**Q** *At the end of every chapter you give a body count. Why?*

**A** We love body counts. We try not to, due to the lessons of Vietnam, but we can't help it. Even General Schwarzkopf, during Gulf War Episode One, gloated at the disparate casualty figures between the Iraqis and Coalition forces, while also claiming that he was “not in the business of body counts.” But the General knows that it's a way of keeping the public up to date without getting too deep into

# He loves me He loves me not

Continued...

I absolutely believe that biblical literacy is a fast track path to deconversion. Only a complete ignoramus without a hint of rationality can dismiss the evil contained within the Bible. Ultimately, the more the faithful learn, the sooner they will run out of excuses.

**Q** *Many of the sections that you discuss relate to the importance of sex, sex with whores, death by torture, people like King David hacking people apart and the complete killing of entire races. Now, I know that much of this is just plain fiction and never really happened, such as Noah's Ark, but if people want to believe that God loves them, how do they accept this concept when the Old Testament is just one long snuff movie?*

**A** They accept it because they don't read it. And in not reading it for themselves, they don't believe it or believe me. I've had Christians debate me on the Bible, and they've flat out said things like, "Oh, it does not say that in the Bible." I then point them to the reference, and they're like "Damn, I've never heard that before!"

The other justification or defence they'll offer is the "it comes down to one's own interpretation" excuse. Well, sorry to burst that bubble, but the laws of the Bible are not metaphorical. For instance, when God says you're to be put to death for raping a goat, but when you rape a woman - you only have to pay 50 shekels to her father, and marry her, there is no clever word play or metaphorical excuse to escape with. It's black and white.

**Q** *I have read a number of other reviews of your book. One FaceBook friend of mine, Andrew Atkinson wrote that "I wish this book was mandatory reading for all people on earth" and "This book is one that I would have my children read."*

**A** This is a great review by a well-known atheist book reviewer that I have respect for and who has read 170 books on related sceptic/atheist subjects before getting to yours. How do you respond to that compliment?

How do I respond? I love it! But in all seriousness, I find that kind of praise a little undeserved. I'm not in the same class as Bart Ehrman or Richard Dawkins, I'm not even in the same post code. Amusingly, one book review referred to me as a "blue collar intellectual", and I kind of like that, despite its generosity, as I really do see myself as merely a guy that has the ability to summarise religion in a manner that people at the pub would enjoy listening to.

**Q** *When I was at the Atheist Convention in March 2010, the lead speaker Richard Dawkins delivered a brilliant assessment of religion. I will quote one of his better lines: "The God of the Old Testament is arguably the most unpleasant character in all fiction: jealous and proud of it; a petty, unjust, unforgiving control freak; a vindictive, bloodthirsty ethnic cleanser; a misogynistic, homophobic, racist, sadomasochistic, capriciously malevolent bully."*

*After reading your book I had a greater understanding of that statement than before. When you consider what is stated in the Bible with the conclusions stated above, such as Dawkins, why do you think that religion, especially the creationists who are strictly for the Old Testament, is allowed to operate?*

*Are we as a society so scared of these people that we would rather allow them to push this fiction rather than countering it with rationality, science and reason?*

**A** I think they're allowed to operate, as you call it, because secularists and those on the social left are terrified of calling bullshit on these barbaric ancient mythologies. Political correctness has gone too far. For instance, I think criticising or denouncing Islam should be a free for all. The Koran and the hadiths are morally repugnant doctrines. While I don't deny the right of Muslims to

believe or practice their religion, calling much of their belief reprehensible, however, should be fine. On the proviso, of course, that one can support one's criticism with textual understanding.

It all comes down to the silliness of supporting the mantra, "respect the beliefs of others". What utter rubbish. I acknowledge the right of Muslims to practice their faith wherever and whenever they want, but I don't respect it. The same goes for Nazis, white supremacists, social conservatives, creationists, gay bashers, etc.

**Q** *I was recently reading how creationists in Queensland are teaching kids in scripture the following:*

- That Noah collected dinosaur eggs just before the big flood
- That people and dinosaurs lived together
- That the great flood skewed all the data and subsequently carbon dating is useless
- That DNA was not invented at the time of Adam and Eve, that is why they were allowed to inbreed
- That Adam and Eve had a spell that prevented the dinosaurs from eating them

*The fact that these statements are being taught in state schools, in fact in any school in Australia, is scandalous. These statements fly in the face of science, evidence such as fossils, carbon dating, geology, the list goes on and on.*

*What is your opinion of these creationists?*

*How should atheists, sceptics and rational thinkers go about dealing with these people (besides reading your book)?*

**A** Well, I make the distinction between religious believers and religious believers who believe in the creation story. The latter, simply, are morons. What else can you say about a person who can look at all the evidence available to mankind today, and then still think we descended from a single set of DNA? I having nothing but contempt for a person who believes a 900 year old man ushered two of every species onto a boat and then encouraged them to have sex for the next forty days. Does this make me an asshole? Probably. But life is too grand

and too short to concern myself with the opinions of dimwits.

Ha ... yes, reading my book is a good start for the Ark believers. But the best way to confront their insidiously sneaky campaign of championing 'intelligent design' into our classrooms is to confront them. But they will win, because once again we're terrified of not being politically correct. We're afraid of being called bigots or intolerant for opposing their stupidity. Stupidity that will only serve to retard our school systems, putting today's youth at an unnecessary disadvantage to the educational pace setters of the world. So, wherever you see such nonsense being taught in your child's classroom, do something about it. Make noise, be heard.

**Q** *I recall in March this year, Richard Dawkins was on the ABC Show Q&A. He was talking to a Minister in the Rudd government and the Minister stated he believed that the Earth was less than 10,000 years old. Dawkins was astounded that a person who makes*

*decisions on behalf of the Australian public would believe that the Earth was less than 10,000 years old.*

*After writing a book on the Bible and providing analysis, how would you have responded to such a statement by a minister in government?*

**A** I watched that particular episode and, for someone such as myself who has lived outside of Australia for a number of years, I was shocked that a member of the Australian parliament could present his ill-found beliefs in such an appallingly clumsy and ill thought manner. This is a guy elected by his constituents to think about things, but even when it came to his own faith, which he proudly thrust forth, he hadn't even examined what it was he believed in.

In many ways, we as Aussies like to think we're more socially progressive than the United States, but then you have this guy elected. This should concern us.

**Q** *Finally, can you give us an insight about your next book?*

**A** I always love a question like this. My next book is titled *Jesus Lied. He Was Only Human*. It is more or less a line-by-line debunking of the New Testament and therefore Christianity. It examines the origins of Christianity, the origins of the New Testament, the conflicting accounts and irreconcilable discrepancies of the Gospels, historical flaws, and the hack job manner in which the entire religion was pieced together. I like to think this book leaves no place to hide for Christian apologists. ■

**Note:** *Further details of Werleman's books can be found at [www.cjwerleman.com](http://www.cjwerleman.com)*



About the interviewer:

**Geoff Cowan** is a member of the Australian Skeptics and an active member of the Western Sydney Freethinkers.



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# Catholicism & the Art

Steve Roberts takes a contemplative journey to sanctified territory.

They say that travel broadens the mind, but recently I found it also broadens other parts of the body, not to mention what it did to my motorbike when I recently attended a rally of two-wheeled enthusiasts at Naracoorte, SA.

This is one of the few places I'd not been to. When our kids were young, we camped in every State Park and saw practically every town in Victoria, and much of SA & NSW. And during our travels we visited several very good underground caves, but we never seemed to make it to the famous ones at Naracoorte, where since those days the Victoria Cave has been further explored and found to be of huge size. So I was pleased to see it at last, although less pleased to note that they fleece you for *each* cave to the tune of \$10-\$15. If you took the wife and kids, and spent the day visiting the various caves, you'd be something like \$300 down.

The bike rally was great fun and I can't wait for the next one, however the towns were bit dull - what with it being a Sunday - and the local bottle shops had a poor selection of wines, but plenty of beer, which is what everybody at the rally was drinking in the evening. For Nyarlathotep's sake, here we are camping on the best soil for vineyards in the entire world, between the sacred towns of Coonawarra and Penola, and we're drinking beer! So I made my own private excursion to pay homage to this latter shrine of the grape.

Driving into the town, I felt a strange fear and humility, as a Muslim would on approaching Mecca. I drove very slowly and quietly down the main street, afraid of frightening the local grapes or of disturbing the wine-making process. Penola has been nicely renovated to show off its wineries and fine dining, and it has excellent cafes

and restaurants, but now it has another string to its bow. This town is one of the places where Mary MacKillop hung out; here is where she started her order of nuns, and founded her pioneering kids' school. A clump of Penola's buildings are thus labelled in commemoration.

Uncharitably, I note that a tornado ripped through the town in mid-2010, trashing the main street and damaging the memorial schoolhouse, among 60 other buildings. It also blew the roof off the interpretive centre, a few days before a major clerical visit. That wind god, Aeolus - he really kicks ass; or was it Fujin, the Japanese wind god who was "present at the creation of the world, and first let the winds out of his bag to clear the world of mist".

Google Earth does not show the sites well, and the resolution goes bad about 20 metres from where the relic sites begin. (Everybody, start praying for better pictures.) I looked in vain for a Famous Mary MacKillop Bicycle Shed, behind which our latest saint would have caught Father Keating, er, ministering to the young in his special way. Actually, that was in Kapunda ... now there's a potential for tourism there.

The Church has a patron saint for nearly everything; instead of pestering the Big G you're supposed to pray to the appropriate saint, who (if they feel like it) intercedes with the Big G. For an omnipotent god, this is very inefficient, especially if you pick the wrong saint and have to be referred across to the right one. So, people having problems with their internet connections should

try St Isidore of Seville first. There's a saint for the Bolivian Navy (presumably they are praying for some water), there's a saint specifically for fishermen who live in Folkestone, for people who make bombs there's St Barbara, and St Thomas is the patron saint of skeptics.

Motorcyclists have not just one, but three! Firstly, there's St Columbanus, whose relevance to two-wheeled transport appears to be that he was "well-born, handsome and educated" but was unwelcome in some of the

places he travelled to. Secondly, there's Our Lady of Grace, but she is listed as patron saint of no less than 547 things, including not only motorcyclists but also both Argentina

and Chile, so I bet she's kept pretty busy - as St George must have been, being the patron saint of both England and Germany. Speaking of Chile, St Barbara not only looks after bomb technicians but her job description also gives her responsibility for guarding against mines collapsing. Must try harder!

Anyway, on the way home, evidently I had failed to pray hard enough to St Columbanus, or to St. Sebastian of Aparicio, the patron saint of roadmakers, or (much more likely) I was driving too fast, because I fell off and skated along the road beside my trusty steed. Whether prayer would have helped or not, I can tell you that wearing the proper full armour-plated clothing with steel and carbon-fibre inserts certainly did, so I was able to simply brush off the road dirt, pour a cup of tea from my thermos, pick up all the bits on the road, and drive the bike home. (So I can't tell the joke about how I had bought some bottles of Grange Hermitage and I was shocked to see a red patch spreading over the road, but fortunately it was only blood.)

**“ Funny old thing, sainthood. On October 16, Mary MacKillop wasn't a saint, but the following day she was. Why? ”**



# of Motorcycling

Really, I should have prayed harder, the repair bill will be \$4500 and I can't mitigate it by finding Jesus's face in the scratches and selling the parts on eBay.

The third saint for motorcyclists is Our Lady of the Miraculous Medal ... but hang on, that's the same as the second saint! Is there a Patron Saint of the Disappointed, or of the Short Changed - no, there isn't. Possibly, such could be considered to be oppressed people, whereupon St Anthony of Padua is up there rooting for them; he also does lost objects, because of the following story. Long after Anthony's death, his old prayer book was kept as a treasured relic, and one day it disappeared, so people prayed for help in finding it; a novice found it, but he later admitted that he had 'borrowed' the book, and returned it after receiving a vision of an angry Anthony. So the prayer didn't help.

There is no patron saint for thieves, or for villains or criminals of any sort, but there are patron saints for the victims of various crimes (curiously, not theft). So, in my researches, I found out that the Church already has fourteen saints for "the victims of abuse" - count 'em - SS Adelaide, Agostina Pietrantoni, Fabiola, Germaine Cousin, Godelieve,



Jeanne de Lestonnac, Jeanne Marie de Maille, Joaquina Véduna de Mas, Laura Vicuna, Margaret the Barefooted, Maria Bagnesi, Monica, Pharaildis, and

Rita of Cascia. I bet you've never heard of any of these - and my spell-checker hasn't either - except for the name of a village in SA that was named after somebody who was named after, etc.

Funny old thing, sainthood. On October 16, Mary MacKillop wasn't a saint, but the following day she was, complete with improved location in Heaven, expanded job description and new access privileges. Why? Because some bloke in a frock said so. But what can a new saint find to patronise? Well, there seems to be an intense need in some areas, and according to one fiercely spiritual Catholic, our new St Mary will be big, very big, in Ireland. Those poor mis-handled kiddies - where can they go for spiritual help? Bleughh. As Sinead O'Connor advises, download the Ryan Report but do not under any circumstances read it. ■



About the author:  
**Steve Roberts's** patron saint was famous for getting stoned.

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# The Loneliest

Space travel is good, aliens don't exist, and we have a duty to leave. Einar Vikingur posits the true nature of our place in the universe.

Copernicus was recently pardoned by the Catholic Church for pointing out some five hundred years ago that the Earth was not the centre of the universe. From a physics point of view Copernicus was on the money, but could he have been wrong from another perspective: can a convincing argument be mounted for the case that humans, as a technological civilisation, are alone in the universe, and that the Earth therefore is the centre?

I think this argument, which goes counter to both common wishful thinking and the prevailing opinion, is actually rock solid, and I think it imposes on the human race some striking duties. Put simply, if we are alone then we should do something as a result of it. However, as I will explain, doing something about it is extraordinarily difficult and it is so for reasons which you might not expect.

Perhaps I should just come out with it up front: I reckon the human race is a one-off, that we are the highest beings in the universe, and that therefore our primary goal should be our preservation. It is a moral duty, an obligation, firstly to ourselves and secondly as a repayment for the unlikely sequence of events which led us to this point. I am going to explain to you just how unlikely we are, or indeed how unlikely beings like humans are. We are a miracle, in the literal sense of the word – an improbable event.

For you to savour this essay you need to recalibrate your head with respect to time and distance. Instead of thinking of miles and furlongs you must work

in light years, that being the distance travelled by light in one year. In one second light travels 300,000 kilometres, which is about seven times around the world. It takes about three seconds to travel to the moon, and about eight minutes to travel to us from the sun. The nearest star is about 4.2 light years away, and if you can picture that you are recalibrated for distance.

As for time, our smallest unit needs to be a thousand years, but you need to be able to accept concepts such as this one: if the universe is 13 billion years old, then ten million years is a blink of your eye. If you accept that, you are recalibrated for time. In terms of human context, we began to record things about five thousand years ago, the Aborigines colonised Australia about sixty thousand years ago, and Europeans arrived in Botany Bay one fifth of our smallest time unit ago – and yet the Pilbara is four billion years old.

As far as distance is concerned, we should focus on our backyard, our own galaxy, which belongs to a cluster of galaxies which itself forms a tiny part of the universe. The Milky Way is about 100,000 light years in diameter, and it looks like a rotating fried egg with spiral arms. Our sun sits about two thirds from the centre, on a spiral arm's edge, in a most congenial spot. As I will explain later, humans partly owe their existence to being domiciled in

the beneficial conditions which obtain in a thin doughnut (or annulus) which encircles the blazing and deadly galactic centre about 30,000 light years away.

Having set the scene, I would now like to talk about aliens, or more precisely, the lack of aliens. After that, I want to explain how ludicrously unlikely it is that you exist, both from astrophysics and biological points of view. We then need to examine space travel, not as dreamers but as the engineers and social planners dealing with the problem. Lastly, I want to draw some conclusions about humanity's duty over the next five or ten million years. If you think this statement is a bit odd, you need to return to the previous paragraphs and recalibrate again.

I have long been amused by the Drake Equation, a mathematical sleight of hand which, regardless of input,

always shows the keen believers that our galaxy teems with intelligent life. I call it a sleight of hand because one can make

**“How unlikely humans are. We are a miracle, in the literal sense of the word – an improbable event.”**

the Drake Equation show that even we do not exist, by selecting desirable values for the various factors. Since humans can hardly deny their own existence, despite the determined and convoluted efforts of many philosophers to do so, the utility of the Drake Equation's answers cannot be used as a proof of anything other than desire. For every 'proof' which says we are sure to have a million clever alien races about our neighbourhood, someone can produce proof to the contrary with the same tool.

What is more, via the Search for



# Planet



Other planets - our duty to explore. But what if we don't like them?

Extra-Terrestrial Intelligence (SETI), we have been sweeping the skies for signs of cleverness for several decades with no results whatsoever. It is true that only a tiny fragment of the galaxy has been covered, but with each passing moment the chances diminish for the hopeful ones. They will persist for long decades yet, and the passion of many will rise in direct proportion to their failure, but eventually they will have to bow to the very high probability that we are alone.

SETI advocates, I grant, might be looking in the wrong part of the spectrum, as they use radio and perhaps should be using lasers or whatever. They may just need another ten thousand years of work, or perhaps we should be sending out a message rather than just listening, and waiting for someone to respond. As an amusing aside, a serious broadsheet in Britain recently ran a competition to find an appropriate message we should

broadcast for all those aliens out there. Numerous entries were considered, and the clear winner was this one: "Two thousand years ago we had a very enlightening visit from the Creator's Son – has he been to see you yet?"

Another telling bit of circumstantial evidence for our loneliness is the Fermi Paradox, in which the great Italian physicist asks the question "If aliens are so numerous, where are they?" Despite those who think aliens built the Pyramids and now specialise in crop circles, and the frequent assertions of UFO sightings and alien abductions by earnest folk, the fact of the matter is that there is not a shred of evidence of any kind whatsoever for any aliens ever having visited us. If anyone entertains the tiniest beliefs here, they ought to consider the amazing number of people who claim to have been abducted by aliens for the single purpose of sexual intercourse. While humans hardly know how aliens would think, I expect that if

humans were hovering in an anti-gravity saucer above the planet Meta-Luna, having sex with the locals would not be a top priority for them. The possibility of delusion cannot be ruled out for those who claim UFO sightings and alien abductions, let alone moments of passion with all manner of beings.

Since aliens who reached us would have scant reasons for hiding themselves, there are strong grounds for concluding that they have never been here. Perhaps they cannot execute interstellar travel, they do not want to do it or they just have not made it here as yet – but if these three reasons could be eliminated then we would have to conclude that no aliens exist.

The first explanation is problematic as interstellar travel is so very difficult, but it is not impossible. The second explanation can be eliminated because interstellar expansionism, even if not desired, would eventually be forced upon a race whose sun was nearing

# Loneliest Planet

*Continued...*

extinction, an event as common as in the galaxy as garden snails. The third explanation can be eliminated because an expansionist race, travelling at a reasonable fraction of the speed of light and establishing colonies and then launching again, could easily cover off the whole galaxy in a few million years. If thousands of technological civilisations developed in the past 13 billion years, any number of them would have had to take to the stars or go extinct as their home stars ran out of fuel. And none has been here, to our knowledge, and yet we live on real estate which demonstrably suits water, oxygen and carbon-based life very well.

We could speculate about all kinds of life forms, and our own planet's astonishing variety might at face value attest to the likelihood of alien beings whose provenance lies in silicon or chlorine, and who like to swim in liquid methane. I think quite the opposite, as carbon based life is what has already succeeded and no theoretical work has ever produced convincing arguments to the contrary. I place no faith in the existence of intelligent wraiths or clever crystal formations, beloved of fantasy writers.

## THE UNLIKELY PLANET

The Earth itself is a most improbable thing. To begin with, the formation process of our type of galaxy can create a zone where the probability of having metals is higher than that of the rest. The Milky Way's annulus of metallicity is where our solar system formed and this gave the Earth a metallic core with a floating rocky crust. The core generates heat via decay of radioactive isotopes, slightly unstable forms of stable elements, and the molten core drives tectonic plate movements which form a part of the mechanism which regulates atmospheric temperature over geological time. The metallic core also generates the Earth's magnetic field, which forms a shield of deflection for harmful particles



Collision time: a merge, a spin and a dance and we had the Moon.

and radiation inimical to life.

We are far enough from the galactic core not to be scoured by its intensity, and luckily have probably never been sterilised by a nearby star exploding into a supernova. The Earth derives its energy from a sun which is not only an unusually stable one, it has been so for billions of years. Our orbit is also in the very narrow zone which permits the existence of liquid water, the basis of all life as we know it – the planet needs only move outwards or inwards by a few million kilometres to freeze to an ice ball or boil all the water off.

The solar system was given a gas giant, Jupiter, outside our orbit, and it was like designing a comet, asteroid and debris vacuum cleaner to order for us. The first 500 million years of Earth's existence were molten and boiling because of the heating effect from the kinetic energy delivered by constant bombardment from space. Slowly but surely the vacuum cleaner's gigantic gravity sink created cleaner skies, and the Earth cooled enough for a crust to form.

Then another most improbable thing

happened: the Earth collided with another body, the size of Mars, and after a bit of a merge, spin and dance we had the Moon. And the Moon does two things few know about – it absorbs some of our spin energy as a gravitational dance partner and slows us down, and it also keeps the tilt of the Earth stable at about 23 degrees off the vertical. If the Moon did not slow the Earth's spin, the surface would suffer ceaseless winds of hurricane strength. Picture it simplistically: the solid surface moves faster than the atmosphere. The oceans, lashed by winds, would generate constant waves of enormous size and energy; tsunamis are pond ripples compared to it. And as for the tilt, that is what gives our planet the seasons when coupled with the slight variation of the orbit around the Sun each year. The Moon has been the enabler for stable weather and regular seasons for billions of years and we got it by the most remote chance.

The galaxy contains perhaps as many as 200 billion planets, and in the past few years detection by our astronomers

has become precise enough to confirm that a lot of them are rocky ones like Earth, Venus, Mercury and Mars. The rocky planets which are likeliest to contain metals would generally be in the thin galactic annulus we inhabit, limiting the suitable candidates for life greatly across the Milky Way. When the hopeful speak of uncountable planets upon which intelligent life could form, they are wrong. The number is restricted by processes of galactic formation billions of years ago, both in terms of metallicity and rarity of stable suns. The number is very likely to be tiny, perhaps only in the millions.

Moreover, the chances of having enough metals, with enough radioactivity, to generate tectonic plate movement, the chances of having a debris vacuum cleaner on hand, the chances of a collision or capture which creates a moon, the chances of sitting in an orbit which permits liquid water, the chances of having a strong magnetic shield, the chances of having a stable sun – and all at once, this is improbable to a very extreme degree. Not impossible, as it happened for us, just unimaginably improbable.

### THE LIVELY PLANET

Two immediate observations would be that it is no wonder aliens are not popping up, as good home worlds are hard to get, and secondly, how lucky are we?

Just how lucky we have been from an astrophysics point of view is expressed in a single idea: the Earth provides a friendly environment for life for millions of years at a stretch. Creating simple life is a piece of cake – only a matter of weeks ago did scientists announce their creation of self-replicating life from chemicals out of bottles. There is strong evidence which shows that the Earth began to throw up primitive organisms within a few million years of initial crust formation, perhaps as long ago as 3.8 billion years. Since that moment, through a series of morphing earths driven by volcanic activity, calamities from the sky, stabilisation of the land and water ratio, settling of the large-scale control mechanisms for atmospheric changes such as the formation of

oxygen, life has evolved to produce a technological civilisation.

Scientists have not formed a confident narrative of how we got here, but enough is known for me to conclude that if you thought the astrophysics improbabilities were great, well, I am afraid you and I are even more unlikely. The planet has thrown up life many times, in the most bizarre forms, and mass extinctions have happened many times as well. One imagines that each time some lines survived, and were given another few dozen million years of evolution to produce the next crop – and the formation of complex life can only occur if millions of years of stable and friendly conditions exist. Simple life almost certainly exists upon numerous planets throughout the galaxy, but complex life such as a multi-cellular organism is quite another matter. Intelligence is a further step upwards, and most likely a very big one.

About 65 million years ago, to pick a popular incident, a large asteroid hit the Gulf of Mexico. That cataclysmic event, extended volcanic eruptions and the consequent cooling of the climate eventually killed off the dinosaurs which had been the dominant life form for the previous 140 million years (and remained very stupid the whole time).

It probably took millions of years for the dinosaurs to pop off, and during that time the mousey little warm-blooded mammals got on with the business of generating you and me. The asteroid hit was highly improbable, thanks to Jupiter, but it gave us the starting gun – and modern humans emerged less than a hundred thousand years ago, in a spurt at the very end of an endless sequence of rolling dice.

Our line was so precarious that at one stage we may have been reduced down to just a few thousand individuals clinging to life during the last ice age. And here we are with a beautiful, if patchy, civilisation, and it has happened very fast. A different body line with intelligence could easily have emerged on Earth, and I would argue that

any intelligence eventually embraces technology because it is a logical consequence of enquiry into the physical world. However, there is no need to speculate about pygmy elephants with dexterous and digitised trunks and large brains and their version of Mozart – we are the ones who made it. It was for us that any number of random genetic mutations occurred and then prospered because they conferred an advantage in the competition for survival.

### LEAVING THE PLANET

Let us now look at space travel, and the first thing I should state is that building and powering ships which could take us to the stars is something which we could do today. We can already produce ion drive propulsion units, powered by the sort of reactors used in nuclear submarines, which could accelerate large craft to high sub-light speeds over several months or years. There are many high engineering and design hurdles, and as such craft would have to be the largest structures ever made they would have to be assembled in orbit – the costs and complexities would be unprecedented.

The political will required to accomplish such a feat would also be unprecedented. Such a Herculean

labour would only be done by harnessing the entire world to the goal, for many centuries. The reason why the craft would

**“ It is no wonder aliens are not popping up, as good home worlds are hard to get ”**

have to be gargantuan is that long term space travellers would require the extraordinary protection from space radiation and particles normally afforded by being on the surface of the Earth.

In the absence of the earth's atmosphere and magnetic field, the only known way of affording this protection is a layer of soil several metres thick. This means that the only ships which could be used by humans to traverse interstellar space over the centuries required for flights would be gigantic self-contained arks lined with soil – spinning cylinders or cigars – and able to provide an environment for many thousands of individuals. The spin



# Loneliest Planet

*Continued...*

would simulate gravity, the protective soil would grow food and recycle the air, and the scale of the craft would be large enough to foster a society which could be held stable for the long journeys.

As the arks would deliver people who would be descendants over many generations from the original crew, the level of protection needed for genetic material would have to be commensurate with that given on Earth. The only other way, apart from using soil, would be to generate magnetic fields around a spaceship strong enough to deflect particles and radiation. However, the power consumption and equipment size and mass needed for this render the solution impractical. Engineers cannot easily recreate a magnetic field as effective as that generated by an entire planet.

It is such a prosaic issue to introduce into these big questions: soil! But the fact remains that humans came about because of the special and multiple layers of protection from space given by the Earth. If some of us leave Earth for extended periods, we need to duplicate the protection. For example, all plans for permanent lunar ground stations describe them as buried several metres beneath the surface of the moon.

It is true that what I call 'undiscovered physics' may provide different protective solutions, but I consider it unlikely as the current situation is driven by unalterable fundamental laws. This is indeed dangerous territory, as the laws of Newtonian physics were thought to be the final word until that unusual patent clerk, Albert Einstein, got to them. I shall most happily be proven wrong, but so far String Theory, Alternative Universes and undetectable Dark Matter do not fill me with anything more than

a sense of wonder.

The powering of interstellar craft is governed by Einstein's space-time laws, which prohibit travel at beyond the speed of light. As much as we might like to imagine hyperspatial travel, popping in and out of normal space and other devices of science fiction, I am afraid reality is most likely to be bound by the laws we have already discovered. The 'slow' speed, coupled with the damage caused to living things by space radiation and particles, says that we would have to set off in protected arks.

The arks could not be preceded by faster and smaller reconnaissance craft, and would therefore leave for journeys which could take centuries and yet there would be sparse knowledge of what awaited them at the end. For example, should a rocky planet be found, would it meet the criteria necessary for us? If it did not, but came close, would the crew be willing and able to devote ten or a hundred thousand years to terra-forming the planet? Or would they leave the planet as it was but alter themselves via genomic tweaking to beings who could live there? Or would they set off again? Is it possible to believe that we could construct a stable society in a spinning cylinder in a great emptiness for eons of time? Come to think of it, why would anyone be willing to leave Earth in the first place?

The low odds of finding suitable planets, around a suitable sun, either for immediate occupation or for terra-forming, could be improved greatly by detective work by astronomers before departure. Such work could be refined during the journey by ark-based astronomers. Further, arks could leave in both directions around the metal-rich galactic annulus and work their way around the core. I have done a number of simple calculations, making assumptions about speed and distance plus time needed for terra-forming, time needed

for building arks on new planets and the special problems posed by the long hops needed to get from spiral to spiral. Despite some conservative time and distance assumptions, but maintaining a constant pace which never falters, the task could easily be completed within ten million years. Humans, by then evolved in all sorts of directions but still the cleverest things in the universe, would meet at the other side of the galaxy.

We would leave Mother Earth for one of two reasons. The first one would be to preserve the race from certain extinction because of the Sun's demise as it goes through its natural lifecycle. Fortunately, all the signs put that off for several hundreds of millions of years, so we can relax unless something unusual occurs such as the straying into the solar system of an astronomical body large enough to disrupt the planetary orbits or damage the Sun. This event is most unlikely, and would take geological time to be consummated and several genetic samples, large enough to seed new homes, would be able to escape in arks.

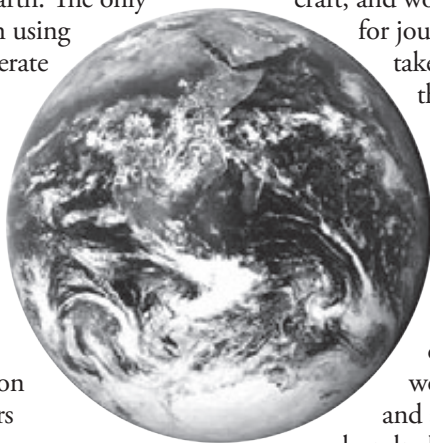
The second reason for sending out arks would be an acceptance of the near certainty that not only are we unique as humans, we are the only technological civilisation in the universe. From that startling conclusion would flow a philosophical debate about our duty, our highest purpose, our responsibility to preserve and perpetuate the race in the same way we are driven to have children. To do that we must go to the stars, because we only have one home now and having all our eggs in one basket is not prudent.

Despite our many flaws, we are too precious to be allowed to go extinct. ■

**Dedication:** *This essay is dedicated to Harry Harrison, who once wrote a short story which contained a startling idea.*

About the author:

**Einar Vikingur** is a graduate of the Royal Military College at Duntroon, has worked in the mining industry and has a BSc in organic chemistry and an MSc in guided weapons engineering.



# Your Stars: DECEMBER 2010

With our Astrologer Dr Duarf Ekaf Jr

## Aries: 19 April-13 May

It's time to hang up your hang-ups and hook up to get a leg up before your time's up, and you beat yourself up. Remember, it's up to you to one-up yourself. Yes, life is looking up.

## Taurus:

### 14 May-19 June

This month you are annoyed at being asked to stand in and write the horoscopes for *The Skeptic*, but you realise that all you really have to do is re-arrange last month's entries! But you soon tire of this.

## Gemini: 20 June-20 July

Your experimental combined hot-air-and-hydrogen balloon will make only the first of a proposed series of test flights. Combined with last month's attempt to shun the conventional use of a parachute in favour of self-hypnosis, you really should .. er ... take a break.

## Cancer: 21 July-9 August

Well, we all know about you, don't we? Some things are best left unsaid. Or, for that matter, untouched. You should consider a career in the Catholic Church.

## Leo: 10 August-15 September

By wearing a T-shirt with your star sign you will attract all sorts of sleazy comments in pubs, but you turn this to your advantage when submitting your entry for the World's Worst Pick-Up Lines competition.

## Virgo: 16 September-30 October

At last you will finally discover how to overdose on homeopathy. You simply don't take the tablets.

## Libra: 31 October-22 November

You confer cleanliness on everyone, well, on most of the population - not to mention the ability to play with cute puppies - and you are so very absorbent. And so soft, especially in the new packet, only \$6.95 for a pack of six at your local supermarket.

## Scorpio: 23 November- 29 November

Be glad, because your constellation actually resembles what it is supposed to be. There it is, up there in the night sky; it's as clear as a homeopathic remedy. As clear as a successful Scientologist. As clear as a list of an astrologer's successful predictions.

## Ophiuchus: 30 November

### -17 December

Off you cast, when knitting is finished. If you customarily believe this stuff, a few cust-ard pies may be thrown. Er.... Phew! Cuss! Making these up is getting difficult. (But it is cust-om - Ed)

## Sagittarius:

### 18 Dec-18 January

I rust taigas in order to get an end-of-year sign (11). (Message to Ed: remember not to pester the crossword consultant to stand in next time.)

## Capricorn: 19 January-15 February

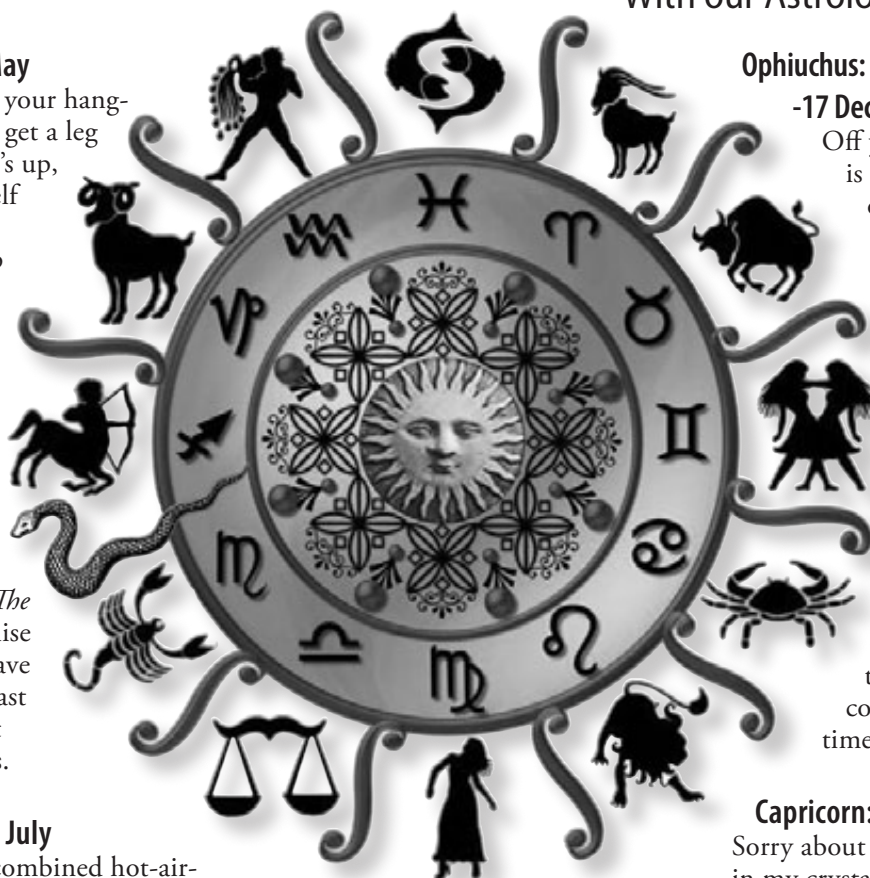
Sorry about this, but when I looked in my crystal ball for you this month, it said "Cannot display the required information - you need to download the latest version of Flush Player. Click here to proceed." And the cat has eaten my mouse.

## Aquarius: 16 February-11 March

Now it says "404 - Page not found". Sometimes it's so hard to be an astrologer. I would be happier if that message simply appeared on my computer screen, but it is imprinted in the cells of the amygdala of my brain.

## Pisces: 12 March-18 April

Something is very fishy about this month. (Ha Ha, we just can't help ourselves! That's because we've just eaten and we're stuffed to the gills. Ha, ha - we've done it again. Aren't you impressed?). ■



# Hit and myth

## Debunking History: 152 Popular Myths Exploded

By Ed Rayner & Ron Stapley (2002 - reprinted and updated 2009)

The History Press, US\$19.95

Over the years we have seen a long list of books that describe various myths and then debunk them, such as *Bad Astronomy* by Phil Plait (2002). But many myths become so ingrained in culture that to challenge them is to invoke discussion and argument, such as the Japanese bombing of Pearl Harbour or the origin of South African apartheid.

The advent of the internet has spawned many sites that have 'evidence' that is basically of a dubious nature or background, so sometimes it is good for the mind to move away from these sites and pick up a good book, examples of which I review on a regular basis for this journal. This is one of those books.

Ed Rayner and Ron Stapley have

compiled a list of 152 popular myths that have been endorsed in history between 1770 to 2003. Quite simply, they address the myths from the perspective of historians with an in-depth analysis looking at all the evidence. Within the preface of the book, Rayner and Stapley make the statement that "we can get the facts of history wrong". They make a comparison between 'errors' and 'myths'; an error being accidental and a myth being a misrepresentation. Example, an error would be that the United States dropped the first atomic bomb on Japan in 1941, when it was 1945. But a myth can seem more appropriate than the truth and subsequently survives time, handed down and not challenged. An example is the apparition of a divine image which resulted in the myth of the Angel of Mons, when it was just mist or fog.

The book addresses many myths from history and actually provides revisions for history including rise of the Nazi Party in 1930s in Germany, who won the battle of Waterloo (not the British!) and many myths regarding the Cold War. Each of the myths has its own section, and clear analysis of the facts develops a conclusion that is logical and concise. The authors do not put their stamp as such on the conclusions, they just draw conclusions from the evidence. The book is supported by an excellent bibliography that is itself sectioned in areas of history.

Some of the interesting skeptic-related discussions include the Angel of Mons, the JFK Assassination (of course) and the unsolved problem of evolution. But the writers, to their credit, do provide evidence that supports some of the myths, but with credible evidence instead of the sort of evidence that was used by some to create the legends in the first place. I was surprised by the myth of whether former British PM Tony Blair lied in regards to the reasons for invading Iraq in 2003. This myth was placed in the Unresolved Problems chapter. Also, excellent sections on the Middle East and Northern Ireland are treated in a manner that no doubt draws upon the authors' experience as history teachers at both secondary and tertiary level. As a student of the Middle East and a long-time reviewer of terrorism-related books and texts, I was impressed by the explanation and background the authors provided and the conclusions drawn, especially for two very difficult issues.

It is a book that would make a nice addition to the skeptic's home library, but to readers of history, it would be of interest and provide fuel for debate over the BBQ or that late night discussion of politics.

It is well worth a look.

- Reviewed by Geoff Cowan





# Love/hate relationship

## God Hates You, Hate Him Back

By CJ Werleman

Dangerous Little Books, **US\$26.66**

Since the publication of the *The God Delusion* by Richard Dawkins, the number of anti-religion books that have started to push the doctrine that religion is a delusion and a false belief has increased. This form of 'militant atheism' puts forward the concept that religion is a source of both conflict and a justification for belief without evidence. A review of many current books on the subject since the publication of *The God Delusion* has supported this opinion and that many aspects of religion, in particular Christianity, are based on false premises and lack of historical fact and evidence. Interestingly, one of Dawkins' greatest critics the Theologian Alistair McGrath stated that Dawkins cannot engage in discussion on religion as he is ignorant. Dawkins' response was simple: "Do you have to read a book on leprechaunology before disbelieving in leprechauns?"

In taking Dawkins' statement literally, I think that reading about the Bible as opposed to reading

the Bible itself can assist a reader in making up his/her mind in regards to whether the Bible is a suitable tool for religious belief or disbelief. CJ Werleman's book, *God Hates You, Hate Him Back* provides a blow-by-blow account of all 66 books of the Bible and through a balance of comedy, sarcasm, and sound analysis of the books themselves, demonstrates that the Bible is simply a document that really cannot be taken seriously.

Werleman's approach is rather different from most books on the Bible. Instead of selecting certain sections and providing analysis, Werleman

simply reads every chapter and verse and draws separate conclusions. This demonstrates a number of issues with the Bible as its inconsistency and contradictions are evident, and for example:

- That 'god' is generally an awful person, because of the way he kills many people, and allows rape, pillage, plunder and death, all in his name.
- That the Bible has some rules that are generally out of step with current society, such as stoning teenagers for speaking back to parents

From these points, the reader can understand the title of the book, and when you review the author's career and some of the incidents that have occurred in his life, you can start to appreciate the title of the book and how Werleman starts to fit into the scheme of militant atheism.

In my research for this review, I looked at a number of sources and one particular interview that the author had with atheist writer Jake Farr-Wharton in 2009 ([www.rustylime.com/show\\_article.php?id=3808](http://www.rustylime.com/show_article.php?id=3808)). In that interview, Werleman outlines his experiences which include being witness to a suicide attack in 2005. The interview details the attack and connects the resolve he had to write a book.

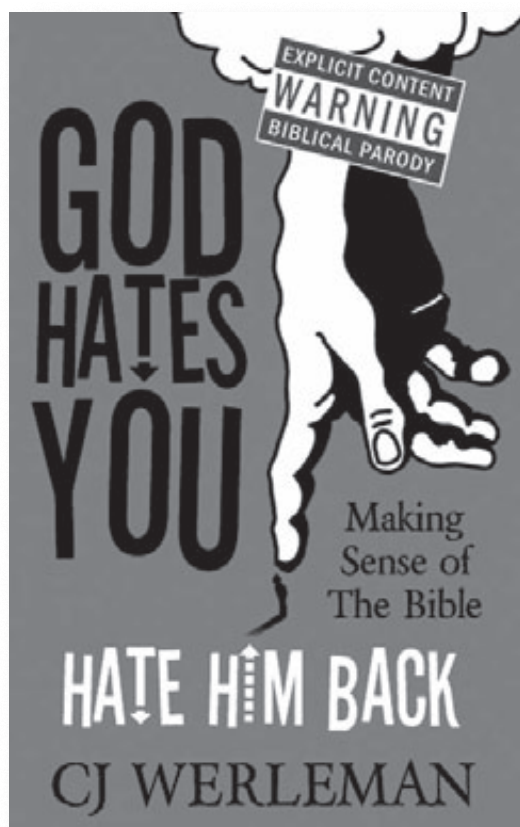
The book commences with an introduction to the Bible and its sub-division into books of the Pentateuch, history books, poetry books, books of the prophets, and then into the rough and tumble of the New Testament. Each of the Bible's 66 books is described and analysed separately.

Werleman's style is informative, sarcastic, comical, but it gets the point through in a logical manner that makes sense, especially to an atheist reviewer such as me. A believer might find the discussion offensive, but I doubt that this is Werleman's intention. He demonstrates the somewhat illogical and evil aspects of the Bible for the reader, reinforced at the end of each chapter with a body count. This new idea in relation to Bible scholarship - the number of people who died in that chapter - provides a quantitative perspective of the chapter and reinforces the grim premise of religion.

Werleman has written another book on the life of Jesus, called *Jesus Lied - He was Only Human*. I have no doubt that that book is as informative and enjoyable as his first.

- Reviewed by Geoff Cowan

**Editor's note:** See Geoff Cowan's interview with CJ Werleman elsewhere in this issue.



# An answer to Colson

## Thank God for Evolution – How the Marriage of Science and Religion Will Transform Your Life and Our World

By Michael Dowd

Plume, A\$21.95

In *Thank God for Evolution*, Michael Dowd takes the wind out of the sails of the likes of creationist Charles Colson.

Dowd, a former creationist himself, has been called “an evolutionary evangelist”. He is a Uniting Church pastor, journeying across the US with his wife who is a science writer. Their message is that unless religion makes peace with the many scientific facts now known about our world, it will become irrelevant. Dowd begins by freely admitting that science can’t explain everything and that the way the so-called ‘strong force’ fits in with the other three forces (gravity, electromagnetism and the

weak force) is still largely unknown. But while science does not allow for any substance or being to be present before the Big Bang, Dowd puts God there (as an emanation).

As regards evolution, Dowd is at pains to explain what he knows and this is a bold move in the climate of USA religions. He points out that revered books such as the Bible and the Koran could not possibly know much beyond their own history, local geography

and the stories told, which are all noticeably similar. Just because he is preaching the god message does not make him a creationist – in fact he is at pains to point out that he is not. He is perhaps too lenient over ‘intelligent

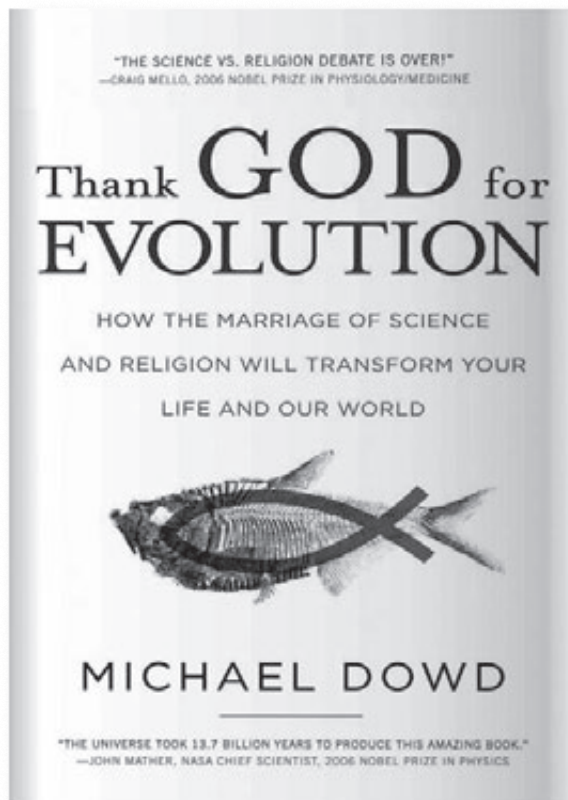


design’ to impress the average scientist, but he does make it clear that there are many flavours of this particular belief and some do not require a short world time scale or an intolerance of evolution.

A criticism can be made of wordiness and some trivialisation of important matters, but then Dowd’s mission is to reach the non-intellectual population, the naïve or easily swayed, and to offer an alternative to the cancer of hardline creationism. A book of this size and subject is almost bound to have some trite passages, but it also contains words of wisdom, such as the inspiring letter that Richard Dawkins wrote to his daughter when she was ten. Apparently, Dowd gained the famous evolutionist’s permission to quote this letter in its entirety. It alerts the little girl to the importance of evidence and points out that neither tradition, authority nor revelation provide reason enough to believe that things are the way people say they are without evidence to back them up.

Although it is asking a bit much for Skeptics to read this book from cover to cover, it is important that Dowd’s efforts be known in Australia where some are in jeopardy of being influenced by the pernicious words of Colson without pausing to consider another religious but more reasoned view.

- Reviewed by Helen Lawrence

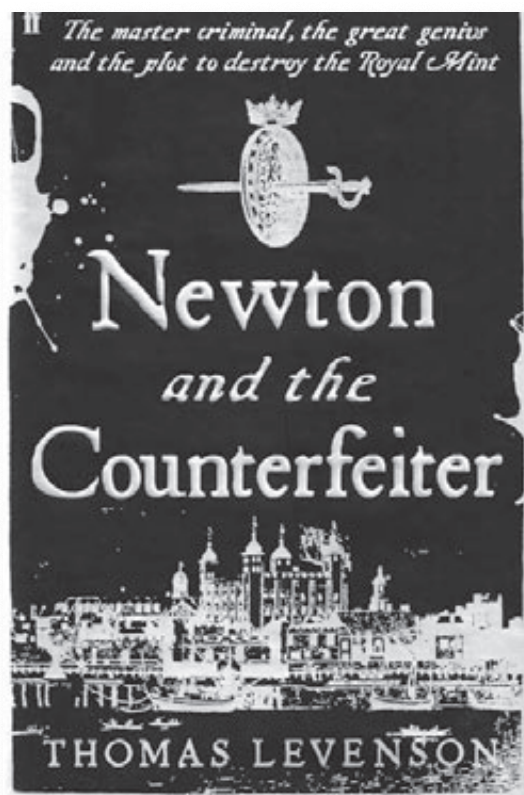


# Show me the money

## Newton and the Counterfeiter – The Master Criminal, The Great Genius and The Plot To Destroy The Royal Mint

By Thomas Levenson

Faber & Faber, A\$24.99



It is not commonly known that Isaac Newton was, for a short period of his prodigiously long career, responsible for prosecuting crimes against England's currency. This is not surprising, as common knowledge about Newton seems to be entirely restricted to apples and gravity. Newly out in paperback, *Newton and the Counterfeiter* gives us the story of this interesting and, until recently, largely ignored period of Newton's life.

Levenson weaves together strands of biography, history and journalism, starting

with a compressed but competent biography of Newton up to 1690. It is a promising start - highly readable and refreshingly free from speculative musings on Newton's character.

In 1694, Newton was invited to take up the post of Warden of the Royal Mint. Historically, this had been a sinecure, and was likely political patronage worked by his friend John Locke. It was an ill-timed gesture if so. The Mint had just embarked on recoinage every piece of England's devalued, unreliable and dwindling currency. It was an immense undertaking but, with characteristic energy and thoroughness, Newton had

soon thrown himself into its administration. Levenson weaves in an informative discussion on the economics of seventeenth century England, explaining why the recoinage was necessary, what its effects were, and why fraud was so common.

One of the duties that Newton found less attractive was the Warden's role in policing the currency. Clipping and coining - shaving precious metal from real coins, and making counterfeit ones respectively - were both capital crimes. It was the Warden's responsibility to prosecute offenders. Demurring at first, Newton eventually took to the role with determination. His dogged pursuit and prosecution of one William Challoner, the counterfeiter of the title, forms the core of the book.

The story of Challoner is, perhaps, the book's one great strength and is certainly its greatest novelty. Though a great sensation for the pamphleteers of the time, Challoner, quite possibly the most brazen counterfeiter ever, has rarely been written about since.

Levenson treats Challoner objectively, resisting any temptation to paint him as a loveable rogue. Certainly he was a rogue, a skilled craftsman, and a high-handed strategist and self-promoter, who tried to secure parliamentary patronage for his own ideas on the recoinage. But loveable he was not, cheerfully sending various people, innocent and not so innocent, to the gallows by betraying them for reward.

Inevitably, this bold streak would be Challoner's undoing. His fall creates a ready-made story arc, and Levenson takes full advantage of it. He creates non-fiction as readable as a novel, while never slipping into sensationalism or irritating scene-making.

A dual biography, a social history and a journalistic account is an ambitious undertaking for one book, but *Newton and the Counterfeiter* is entirely successful. Levenson is principally a science-history writer, and it shows in the thoroughness of his research and his approach to evidence: sifting it, explaining it, and making it plain when necessary. It is an approach that more writers in this genre would do well to emulate.



**Right:** Sir Isaac Newton contemplating the gravity of money.

- Reviewed by Jo Stewart



# Climate changes

In which exception is taken to figures, climates, economics and goalposts



Mark Lawson shouldn't be allowed to rewrite history in his favour.

He wrote in the recent Forum (*The Skeptic*, 30:3, page 57): "The same applies to those who doubted me when I pointed out more than a year ago, correctly, that the direct warming of CO<sub>2</sub> in the atmosphere is limited."

What he actually wrote in March 2009 (*The Skeptic*, 29:1, page 64): "As engineers who deal with greenhouse systems will tell you, the warming effects of CO<sub>2</sub> cut out at a certain point. It is widely accepted that CO<sub>2</sub> will have some effect but that there is also a saturation point."

This is not correct, as noted at the time. A good summary of the underlying physics and validating observations (with references) can be found online<sup>1</sup>: The atmosphere of Venus and its intense greenhouse effect disproves the CO<sub>2</sub> saturation hypothesis.

Infrared CO<sub>2</sub> analysis used in industry and anaesthesia would not be possible if CO<sub>2</sub> saturated; how could concentrations over the saturation level be measured?

Back to the current forum: "The argument has been over secondary warming or feedback effects in the climate models."

The available evidence constrains the response ('climate sensitivity') to a doubling of CO<sub>2</sub> concentration to 3±1 degree C (95 per cent confidence limits). This includes the water vapour positive feedback.

A summary of the observational, paleoclimate and modelling evidence can be found online<sup>2</sup>.

Very low values have been suggested by some authors, but this would imply that ice ages were and are impossible.

With regard to the economic analysis, without quantifying the difference between the MER vs PPP methods we're left with a dispute between panellists. There is obvious controversy in the field: "A team of SRES researchers responded to this criticism [MER vs PPP], indicating that the use of MER or PPP data does not in itself lead to different emission projections outside the range of the literature. In addition, they stated that the use of PPP data in most scenarios models was (and still is) infeasible, due to lack of required data in PPP

terms, for example price elasticities and social accounting matrices."<sup>4</sup>

The SRES scenarios weren't changed, presumably to enable consistency across reports.

A cynic would suggest that this would also prevent accusations of moving the goalposts by critics. Are emissions tracking any of the scenarios?

Yes they are.

A 2009 paper by Le Quere *et al* shows that fossil fuel emissions are tracking the upper bound of the IPCC scenarios<sup>5</sup>. (Figure 1 in this document is a very useful graph.)

Is CO<sub>2</sub> rising as predicted by the IPCC? From projections presented in the 2001 assessment report<sup>6</sup>: Predicted upper bounds for 2100 CO<sub>2</sub> concentrations (multiple models) - 382-396ppm; actual measured<sup>7</sup>: 388ppm.

The Copenhagen statement Mark complained about is valid.

Robert O'Connor  
Gorokan NSW

## REFERENCES

1. <http://www.skepticalscience.com/saturated-co2-effect.htm>
2. <http://www.skepticalscience.com/climate-sensitivity.htm>; <http://www.skepticalscience.com/water-vapor-greenhouse-gas.htm>
3. *IPCC AR4 SYR synthesis report*, section 3.1, [http://www.ipcc.ch/publications\\_and\\_data/ar4/syr/en/mains3.html#3-1](http://www.ipcc.ch/publications_and_data/ar4/syr/en/mains3.html#3-1), footnote 11.
4. *IPCC 4th Assessment Report*, Working Group III. Section 3.2.1.4. The use of MER in economic and emissions scenarios modelling. [http://www.ipcc.ch/publications\\_and\\_data/ar4/wg3/en/ch3s3-2-1-4.html](http://www.ipcc.ch/publications_and_data/ar4/wg3/en/ch3s3-2-1-4.html)
5. Le Quere C., Raupach M.R., Canadell J.G. et al. Trends in the sources and sinks of carbon dioxide. *Nature Geoscience* 2, 831 - 836 (2009), preprint downloaded from <https://www.science.purdue.edu/eas/wp-content/oldcarbon/LeQuere.Nature.GEO.2009.final.pdf>
6. *IPCC Third Assessment Report*, annex II, accessed at <http://www.ipcc.ch/ipccreports/tar/wg1/531.htm>
7. <http://co2now.org>; <http://www.esrl.noaa.gov/gmd/ccgg/trends/>

## ... and some further debate

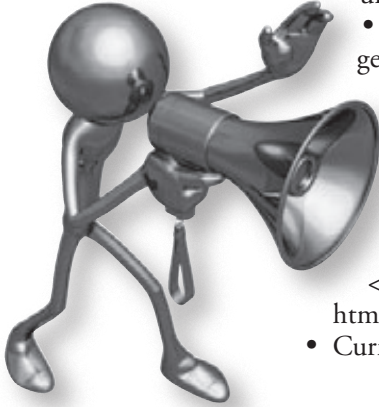
In *The Skeptic*, 30:3, page 57, Mark Lawson makes the statement/claim in his ultimate paragraph, that: "Concentrations of methane in the atmosphere levelled off around the turn of the century."

But Lawson offers no supporting data, no references, no citations, no authority for this claim.

Perhaps your readers would be better informed by more proper reporting - see links below - which quite clearly rebut the bland and uncorroborated assertions by Lawson.

- Climate forcing of geological and geomorphological hazards, 28 May 2010 <http://rsta.royalsocietypublishing.org/content/368/1919.toc>
- Gas Hydrates: past and future geohazard, 2010 <http://rsta.royalsocietypublishing.org/content/368/1919/2369.abstract>; [http://cdiac.ornl.gov/pns/current\\_ghg.html](http://cdiac.ornl.gov/pns/current_ghg.html)

- Current Greenhouse Concentrations



Updated, September 2010 [cdiac.ornl.gov/pns/current\\_ghg.html](http://cdiac.ornl.gov/pns/current_ghg.html)

- Papers on Atmospheric Methane Concentrations, 8 April 2010 <http://agwobserver.wordpress.com/2010/04/08/papers-on-atmospheric-methane-concentration/>
- Trends in atmospheric methane, 7 Jan 2009 <http://zipcodezoo.com/Trends/Trends%20in%20Atmospheric%20Methane.asp>
- Growth of methane concentration in the atmosphere, May 2006 [http://ecen.com/eee55/eee55e/growth\\_of%20methane\\_concentration\\_in\\_atmosphere.htm](http://ecen.com/eee55/eee55e/growth_of%20methane_concentration_in_atmosphere.htm)

Colin Kline  
Mt Helen Vic

## Proof of belief?

In which is discussed skepticism, agnosticism, religion and panentheism

I am not an atheist and I have trouble understanding how a true skeptic can be an atheist. By definition, a skeptic is a person who harbours doubts and seeks evidence, in religion as much as any other human activity. I have a growing concern that we are allowing the currently popular atheist movement to take over our broader mission – to seek and value evidence over fraud and superstition.

And that brings us to the immediate stimulus for I am concerned that in placing the test of factual proof for existence of God (and the particular role of Jesus in the lives of many), and then finding it wanting, many skeptics then fail to apply the same level of proof to the total absence of anything beyond our physical world. To them 'nothingness' is self-evident and requires no evidential proof. While this public stance is clearly very profitable at present, it is surely the antithesis of what true skeptics stand for.

Although religious believers, as much as skeptics, include those who are ill-informed, bigoted or irrational, they have always included

some of the finest minds on the planet. Most religious adherents find no need to leave their intellect at the doors of their church each Sunday morning. Countless scientists and laypersons have no problem in reconciling their studies and passion for science with an acknowledgement of something 'more' in our universe. Are they to be ignored and belittled just because their belief is inconvenient? Where is the respect and tolerance for others in such a response?

By God, I am not talking here about some bearded old guy lurking behind the clouds, intervening every now and again to bring good or evil to our everyday existence. Many of us see this figure as just a proverbial straw man, a useful construct of God promoted by those keen to utilise the absurdity of this model to then 'prove' the absurdity of the God notion in general. Many of us have found it quite painful moving on from simplistic God-notions that we were taught as children to a more empowering faith befitting adulthood. We happily accept that this applies to all other areas of the primary school curriculum so why not religion? Both Christians and anti-Christians who base their belief or non-belief on the inadequate lessons of their childhood are equally misguided and their disputes should not distract us.

Many, possibly most, believers in God accept and worship a far more rational, panentheistic

God - one in whom we 'live, move and have our being'. He (to the extent to which our language limitations require a gender-loaded pronoun) is revealed in many ways to many cultures throughout the World. Evolution, an obsession with many skeptics is, to us, just one more of the countless examples of the works of God, our Creator. We simply don't get hung up about it - let the Creationists and hard-line skeptics slug it out but leave us out of it!

Most Christians (and I would not purport to speak on behalf of other religions) are not as limited in our belief as many of our detractors would naively assume and are even more critical than non-believers of those Christians who do not accept or understand the limitless and mysterious truth of God's existence. Many such believers seek to explain and describe God in simplistic terminology that flows from a narrow and inadequately literal interpretation of the Bible. They make too easy a target for those who delight in the sport of exposing charlatans, though such successes seldom lead to deeper insights into the human condition.

To some psychologists and commentators, religious commitments are simply a manifestation of our own internal mental processes. They contend that as humans we construct a belief structure that mirrors our own physical reality, that is, we are building God in our image and not, as the Bible would have it, being built in His. But even if we accept that this unprovable phenomenon exists, it still does not preclude admitting a parallel reality that God also exists.

In 2005 my family went through a very dark period which had many profound impacts on those close to me. When my world was at its darkest, I came to feel a deeply chilling loneliness and I truly felt despair and fear like never before. I clearly remember, with a degree of skepticism and nervousness, how over the next few days, even a week or so, I consciously, explicitly and purposefully turned to God for whatever he might be able to offer, as I knew deep inside that my own resources were exhausted. The change brought about in me, over ensuing months, was astonishing and real - an observation confirmed by many close friends.

So I am a skeptic but one who has been exposed to incontrovertible evidence of the

reality of God working through the Holy Spirit. However, I am aware that those of us who have had personal knowledge and evidence of the physical and emotional reality of the God experience are especially fortunate, dare I say blessed. I know it is easier for us because we are not dependent just on faith to sustain our belief, as we have seen or felt the evidence first hand. As a student of science for the past 50 years I needed evidence to anchor my belief, which has, it must be said, been shaky at times in the past.

I now have the evidence and as a skeptic I cannot deny its truth and the conclusions towards which it leads me. Am I to deny my experience in the face of intolerance from skeptics, just to be sociable? Is this the price Christians are expected to pay to be accepted as skeptics or is this religious prejudice with simply another face? Being a Christian does not make me perfect, in fact, it makes me all the more conscious of my imperfections. It also does not make me blind to the evils done to the planet and its inhabitants on behalf of religion, as much as science, pride and greed, over countless centuries. Clearly I am not alone in my imperfection!

I can readily understand how skeptics might find an intellectual home in the realm of agnosticism. Such a stance would be a quite natural result of an unwillingness to trust and accept the evidence of anyone beyond themselves (thankfully not a level of proof required in much of our legal system, where a credible witness's evidence is given due weight). Nevertheless, Christians should accept the logical validity of agnosticism, even though we may disagree with it. Atheism, on the other hand, requires such a certainty of belief in the existence of nothing outside our physical world that a true skeptic must apply a suitably high burden of proof for this assertion.

Too much anti-religious propaganda promoted by skeptics merely reflects a self-imposed ignorance and an inadequate understanding of religion, along with a lack of respect for those who are able to bear witness to the reality of God. We should remember that, as skeptics, we can't afford to be selective when we 'seek the evidence', just because it may lead us towards uncomfortable territory. Surely true skepticism is worthy of nothing less.

Ian Foster  
Canberra ACT







# What you think ... Kalam & Universal lunches

## Solar prices

In your September 2010 edition, page 58, “Sun shines bright”, you had a very interesting article by Tony Heyes. He says we are charged 16.8c for every kWh we buy from Origin but they pay us 66c when we sell them. If this is correct (who makes up the difference?) it further distorts the economics of solar power. Also, his electric car will be using coal, so much for reducing CO2 emissions.

Glenn Baker  
Leonors WA

## Autism numbers

In *The Skeptic* 30:3, page 22, Eran Segev and Bob Buckley were said to be going head-to-head over the rate of growth in autism cases. Disappointingly, very little of their exchange dealt with this matter, most of it being spent on side issues such as diet, evidence-based medicine, placebos, and the failings of modern medicine, and what discussion there was of prevalence and incidence was largely rendered useless by Buckley’s lack of understanding of what prevalence and incidence mean. Bob, if the rate today is, as you suggest, one in a hundred, and if, as you suggest, a recent study in the UK suggests that a similar result can be found for adults, what that means is that the rate has not gone up.

In order for there to be evidence that the rate was going up, there would have to be a higher incidence - more cases - among children growing up now than among people who were born before the purported increase.

Myself, I’m of the opinion that the rate may well have gone up, but it’s going to be almost impossible to establish with any precision because autism is itself so loosely defined that

it potentially covers a large part of the total population.

In defining any condition, you have a choice between minimising false positives (people whom the definition covers but who do not have the condition) or minimising false negatives (people who the diagnosis does not cover but who do have the condition). Psychology is very much motivated to lean to the second, and autism is only one example of this.

More widely, when I see one side arguing that modern psychological medicine is often wildly misguided and the other that alternative therapies don’t work, my attitude is “Why do we have to choose?”

Chris Borthwick  
Brunswick Vic

## Fairies & Marriage

“Fairies at the bottom of the garden”. This old chestnut came straight (excuse the pun) to mind when I read this little gem of dogmatism from the self-styled ‘young Skeptic’ Richard Hughes: “There is no rational reason to disallow gay marriage while heterosexual marriage is recognised as it is by the state” (*The Skeptic* 30:3, p.16).

Hmm. Mr Hughes is entitled to say this if and only if he has already examined every possible argument for disallowing gay marriage. He hasn’t. It follows, as a point of logic, that his claim is out of order.

Now, are there fairies at the bottom of my garden? After 50 years of digging and pruning there - I am an ‘older’ Skeptic - I am somewhat inclined to think there ain’t. But I would never assert that I can prove it.

Michael O’Rourke  
Braddon ACT

Kevin Rogers (*The Skeptic*, 30:3, page 56) examined the claim that a universe can be made as a free lunch, with negative or zero total energy. I can try to illuminate some aspects.

He asks why should the zero reference for gravitational energy be when two masses are at infinity, rather than together? In mathematical terms, the energy is  $E_g = K - m/r$ , but what is  $K$ ? I teach my students it is because, were it otherwise, every distant star would contribute significantly to the energy of an apple, making its potential energy impossible to sum - only a lone  $m/r$  term can make it converge.

Secondly, Kevin proposes that the zero reference be at zero separation - but then for point masses, all other separations would give infinite positive potential.

Thirdly, for non point masses such as the Earth and a satellite, if the zero reference was in contact (at the surface of the Earth), the question would arise whether to start at sea level, the equator, the poles or Mount Everest - Ockham’s Razor says no. So the only useable reference condition is at infinite separation, and all gravitational potential energies are negative.

In light of this, could a hypothetical universe maker conjure up a universe without expending energy? The rest energy of an object is famously  $E = MC^2$ , while the gravitational energy (at a given separation) can be expressed as  $E_g = 0.5mv_e^2$  where  $v_e$  is the escape velocity from that separation (ignoring relativity). Now the escape velocity equals the speed of light only at the event horizon of a black hole. This implies that in order to recover the rest mass, a creator could borrow some energy to create matter far apart, and then let it slide so close together that it would form a black hole, while braking it with an external force to recover the energy. Alternatively, he could create matter so dense it is already in a black hole and without the ability to escape.

## Kalam & Universal lunches

Continued...

Perhaps including relativity would alter the argument – that is beyond my ken – but the free lunch idea is looking decidedly unappetising.

Ian Bryce  
Rozelle NSW

Kevin Rogers (*The Skeptic*, 30:3, page 56), commenting on my letter (30:2, page 55) about the spontaneous origin of the universe, says that energy is required to create matter. Kevin seems to confuse matter and mass. The “m” in Einstein’s equation is mass, not matter. Mass and matter are separate concepts and the most simple matter has no mass. The first form of matter would have been absolutely simple and have no mass, “m” would have been zero, so the equation  $E = MC^2$  with m equal to zero gives an energy value of zero. So, in that first reaction, energy would not have been involved. Kevin seems to miss the fact that I mentioned this in my letter.

He also pointed out that the universe is composed almost entirely of matter rather than anti-matter. At first, they would have been equal, but through the eons more and more radiation reaches its visibility limit where the expansion results in the speed of light in relation to its source and it converts back to matter, not anti-matter.

Brian a'B Marsh  
St James WA

## Causes & chances

Forum (*The Skeptic*, 30:2, page 54) Brian a'B Marsh gives his interpretation of the Kalam Argument: Anything that begins has a cause. The

Universe began to exist. Therefore the Universe has a cause.

As a skeptic, I hold with the idea that the statement which “everyone knows to be so” is precisely the statement which ought to be tested. For example, in the absence of divine contacts and given the contradictory nature of religions, as a child in a society which assumed Christianity was correct (with parents who were not so sure) I decided that the sort of gods described were unlikely, and that no believable god would be cross with someone for not believing without appropriate proof. None has bothered to provide me with proof as yet.

I was thus fascinated by his argument, resting on his statement that “Premise 1 has traditionally been seen as intuitively obvious.”

For many people, it was intuitively obvious that the Earth was flat, or that education of females led them to have a disorder of the uterus (‘hysteria’). For many people, it is now intuitively obvious that certain probabilities are very different from the probabilities calculated by mathematics, much to the profit of some more practical players. For example, non-mathematical humans trying to make a series of random numbers do not include enough runs, or long enough runs: they intuitively ‘know’ that long runs are unlikely ‘just to happen’.

From a lifetime of trying to understand topics such as religion, the human condition, evolution, quantum effects and probability, I found myself immediately questioning the assumption that Premise 1 holds. For me, the claim of cause is unsupportable: often, things just happen. (Well, really, it’s the famous Predator 2 quote: “Shit happens”.)

I wonder whether this personal opinion is related to my childhood rejection of the tale of Divine creation?

This may be a case of ‘appeal to personal incredulity’, but I prefer to claim the prior application of “Factoid propagation: advocate asserts the truth of a proposition that is commonly assumed to be true, when it is not

in fact established as true.” (Theo Clark, *The Skeptic*, 30:1, page 40) I would welcome the comments of a traditionally qualified philosopher.

Julie Fitzpatrick  
Western Australia

## Sucrose

In the Forum section of the September issue of *The Skeptic* [30:3, page 51] Ken Gillman criticises an article of mine in the March issue [30:2, pages 14-17]. Ken concludes that, despite having a BSc in biochemistry and 25 years experience as a professional nutritionist, I am not qualified to criticise a book (*Sweet Poison*) about a nutrition subject written by a lawyer (David Gillespie) whose sole scientific qualification is that he “almost failed biology and chemistry in high school” (*Sweet Poison*, p9).

Ken admits that he has not actually read *Sweet Poison*, yet he believes he is qualified to conclude that it “seemingly does ... contain quality information and reasonable suggestions”.

Ken should read the book, and check on the authenticity of David’s interpretations of the scientific literature. If Ken is a true skeptic, he will find (as I found) that David has grossly exaggerated the evidence in his attempt to prove that dietary fructose is a poison at any dose, and is the sole cause of the major chronic diseases afflicting many people in developed nations.

As yet another illustration of David’s propensity to exaggerate (or distort) the evidence, in his article in the Forum section David implies that a non-peer-reviewed editorial (*AJCN*; 2008; 88: 1189-90) completely overrides the conclusions of a peer-reviewed meta-analysis (*AJCN*; 2008; 88: 1419-37). (The meta-analysis concluded that fructose is safe at relatively high intakes and may even be beneficial at moderate intakes, while the editorial

questioned these conclusions.)

It is not appropriate to dismiss either the meta-analysis or the editorial - both points of view should be taken seriously. Furthermore, David exaggerates the differences between the meta-analysis and the editorial. The editorialists do describe some points of difference, including listing several adverse health effects that are associated with high (note the word "high") fructose intake. However, they then state that "Whereas some of these effects have been reported only in animals, these findings raise important questions about the safety of high doses of fructose in humans." This is quite different to David's claim that fructose is indisputably a poison at any dose.

Clearly, there is no consensus on the role of fructose in human health, or on what constitutes a safe level of intake. I agree with Russell O'Sullivan (and Carl Brewer) that fructose "deserves serious attention and educated debate". Unfortunately, David Gillespie has not contributed anything of value to this debate.

David also implies that the authors of the meta-analysis mentioned previously, Australian researcher Alan Barclay and I, cannot be trusted because we have all been tainted by association (however tenuous) with the sugar industry. Yet David has not declared his interest in pushing the argument that fructose is unquestionably a poison in any dose, and that it is "slowly killing us" - sales of his books depend on him promoting this position relentlessly, regardless of the equivocal nature of the scientific evidence.

Finally, Martin Bridgstock couldn't understand why David Gillespie hasn't published in the peer-reviewed literature. There is a good reason for this: his writings would not pass the peer-review process.

Chris Forbes-Ewan  
Scottsdale Tas

David Gillespie accuses my colleagues and I of a serious conflict of interest when he says (*The Skeptic*, 30:3, page 50): "Dr Barclay is the chief science officer (and occasionally acting CEO) at Glycemic Index Ltd. It exists to dispense GI Symbols. Prospective supplicants submit their fare for testing, pay the 'testing fee' and (if adjudged worthy) receive a little blue G that they can display on their labels. In return for using the symbol the manufacturer hands over a percentage of the sales of the product. CSR has managed to get a GI symbol slapped on its Low-GI sugar. So, should we really then be surprised to find Dr Barclay suggesting sugar is not bad for us?"

Our research into consumption of sugars consisted of two Masters of Nutrition and Dietetics projects in 2009. The two MND students found that consumption of total sugars and fructose had increased in the USA, but not in Australia, the United Kingdom or Japan over the same period. The same method was followed for all nations, so we believe the results are valid. The MND projects were peer reviewed by independent academics as part of the students' overall assessment. In addition, each study was again independently assessed by different academics prior to their presentation at several Australian conferences. The conclusion of this comprehensive body of work is that increased fructose consumption is not likely to be responsible for the Australian obesity epidemic. A paper based on these studies is in the process of being submitted for publication in a suitable scientific journal. Further, when the ABARE sugar consumption data is adjusted for population growth (as it should be) it supports the conclusion that sugar consumption is inversely associated with obesity in Australia.

It is very important to note that none of our Masters students received any form of payment from any food company for the work they conducted on their sugar consumption projects, and neither did their supervisors - Professor Jennie Brand-Miller and myself. I work full-time for the

Australian Diabetes Council (formerly Diabetes Australia-NSW), as I have on and off since 1998. I am sub-contracted to the Glycemic Index Foundation (GI Foundation), currently as the chief scientific officer. The GI Foundation is a not-for-profit organisation whose primary aim is to decrease the risk of developing diabetes and to help those people with the condition to manage it.

The glycemic index (GI) is a measure of the effect on blood glucose levels of carbohydrate-containing foods. There is level 1 evidence to support the role of GI in the management of diabetes and obesity. One of the activities of the GI Foundation is to endorse healthy low-GI foods using its certification trademark, the "GI Symbol".

Approximately 150 products now carry this symbol. By definition, these foods contain either sugars or starches, or a mix thereof. An Australian company called Horizon Science has developed a polyphenol extract that lowers the GI of carbohydrate foods. Horizon Science was the beneficiary of a number of Australian government grants to achieve this world first. The first company to use this innovative technology was CSR in its novel sweetener Logican®. Horizon Science is now applying the same technology to other carbohydrate-containing foods, including high-starch foods such as breads and breakfast cereals. CSR does not have any licensing or research agreements with the GI Foundation - Horizon Science does.

Gillespie is not a scientist, and his highly flawed ramblings about fructose are not adding constructively to the scientific debate around the cause and management of the obesity epidemic. Part of his strategy seems to be to create controversy and generate media attention by attacking well-known and respected Australian organisations and/or individuals. Such *ad hominem* attacks, allied to his simplistic and mistaken arguments, do not progress the discussion; rather they seriously cloud and distort it.

Alan Barclay  
S??? city and state



## Modes of Thought

From time to time, issues arise - and are debated in the pages of *The Skeptic* - which are argued not just from two different points of view but also by two quite different modes of thinking. The debate over fructose (*The Skeptic*, 30:1) is such an issue - where the original author is a lawyer and the critic is a scientist. Even the word "debate" leads us into a false mode of thought. This is a scientific question and must be resolved by scientific inquiry and experiment. The discussion should be focussed on whether we already have sufficient evidence and, if not, how to design appropriate research experiments in order to gain it.

Unfortunately, lawyers and scientists have quite different approaches to the issue. Even the research methods usually differ, with scientists trying to measure some phenomenon directly whereas lawyers are more interested in what people think of it. A scientist aims for the truth - to obtain the best available explanation to account for some natural phenomenon - that is, the most accurate theory for the prediction of future events. A lawyer aims to

obtain a victory in the current court case - if necessary, despite the truth.

As the old legal adage goes: "When the law is against you, argue the facts. When the facts are against you, argue the law". When both are against you, use emotion - plead extenuating circumstances, claim provocation or describe in harrowing detail a drug addiction and deprived childhood.

Scientists want us to find new knowledge. Lawyers want us to find in favour of a client.

Even the degree of proof is different. In mathematics it is formal and indisputable. In science, particularly medicine, it is against a predefined and small degree of probability that the result could be due to chance. However, in law it is subjectively "beyond reasonable doubt" - as accepted by the majority of a jury or a panel of judges.

The issues appearing in the pages of *The Skeptic* are usually scientific. Lawyers are most welcome to contribute to the discussions but when they do they must adopt a scientific mode of thought. Emotion has no place in seeking the evidence.

James Forte  
Nedlands WA

## My Brain Hurts

Roughly five years ago I went to a marvellous lecture by Simon Singh. At the end I got to ask a question: "Before the Big Bang, did  $1+1$  still equal 2?" I still struggle with the answer (or non-answer) which was to the effect that before space/time commenced  $1+1 = 2$  had no meaning.

This is what I need help with. Is this a philosophical question or a physics/mathematics question? We talk of the 'singularity' which, I would have thought, gives legitimacy to a universal concept (at the very least) of 0 and 1. Cannot the basic concept (or what seems to me a basic concept) that  $1+1 = 2$  cross into all universes and exist before space/time? Can we explain or even imagine a universe where  $1+1$  does not  $= 2$ ? It's as though 'nothing' and 'something' have no meaning. (Mind you, I can't imagine the square root of minus 1 either). Should I embrace (heaven forbid) Jacques Derrida and 'deconstructionism'?

John Nash  
Nedlands WA

## CRYPTIC CROSSWORD SOLUTION

E	N	E	S	E	L	S	A	R	A	P	R	E	R	E	B
S		O					I		L		E		M		A
A	T	T	G	U	T	S	L	L	E	C		O		R	O
R		P		N		O		Y		N		S		A	
H	S		I	R		R		C		E		T	R	U	
P		T		N		B		S		I		A		L	
A	R		S	N	E	O	M	E		A	R		F	E	A
R		S		U		A		S		E		F		M	
A	W	A		D				U	M		I	P	O		R
P		L		N		D		E		X		E		O	
	E		L	B		A		A		V		E		N	O
T		E		I		E		N		N		D		A	
X	E		V	E		R		A	D		I		N	A	R
E		O		B		N		I				A		A	
N	O	N		A		S		U	S	L		C		A	P

## BRAIN BUSTER SOLUTIONS

1. According to Herodotus, they made a temporary decision, then reviewed it next time they were drunk.
2. Tasmania.
3. They can only film outdoors in July or August because it's too dark during the other 10 months, and it takes 3-6 months to cut and edit; plus, people are more desperate to visit indoor venues in the winter.
4. No sugar, and milk in LAST.

See more of Dr Bob's Brain Busters at  
<http://www.skeptics.com.au/features/dr-bobs-quiz/>

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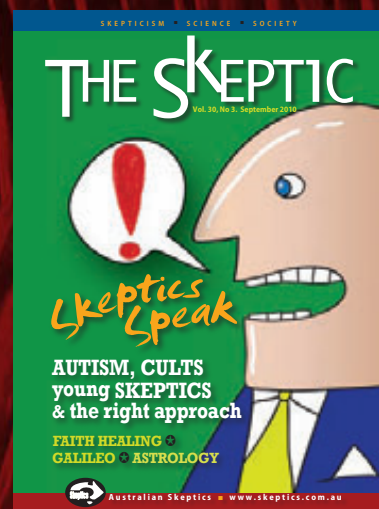
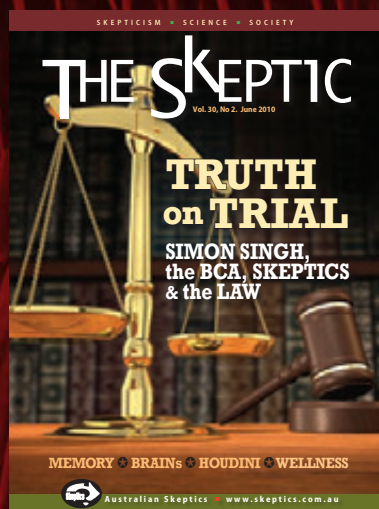
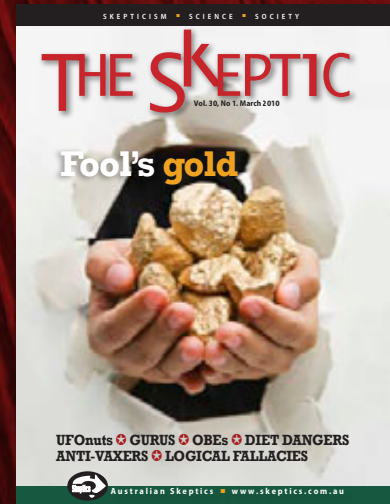
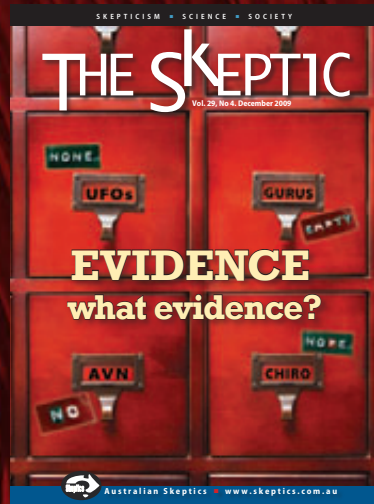
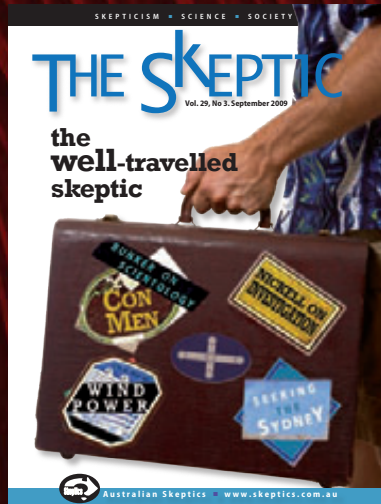
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