

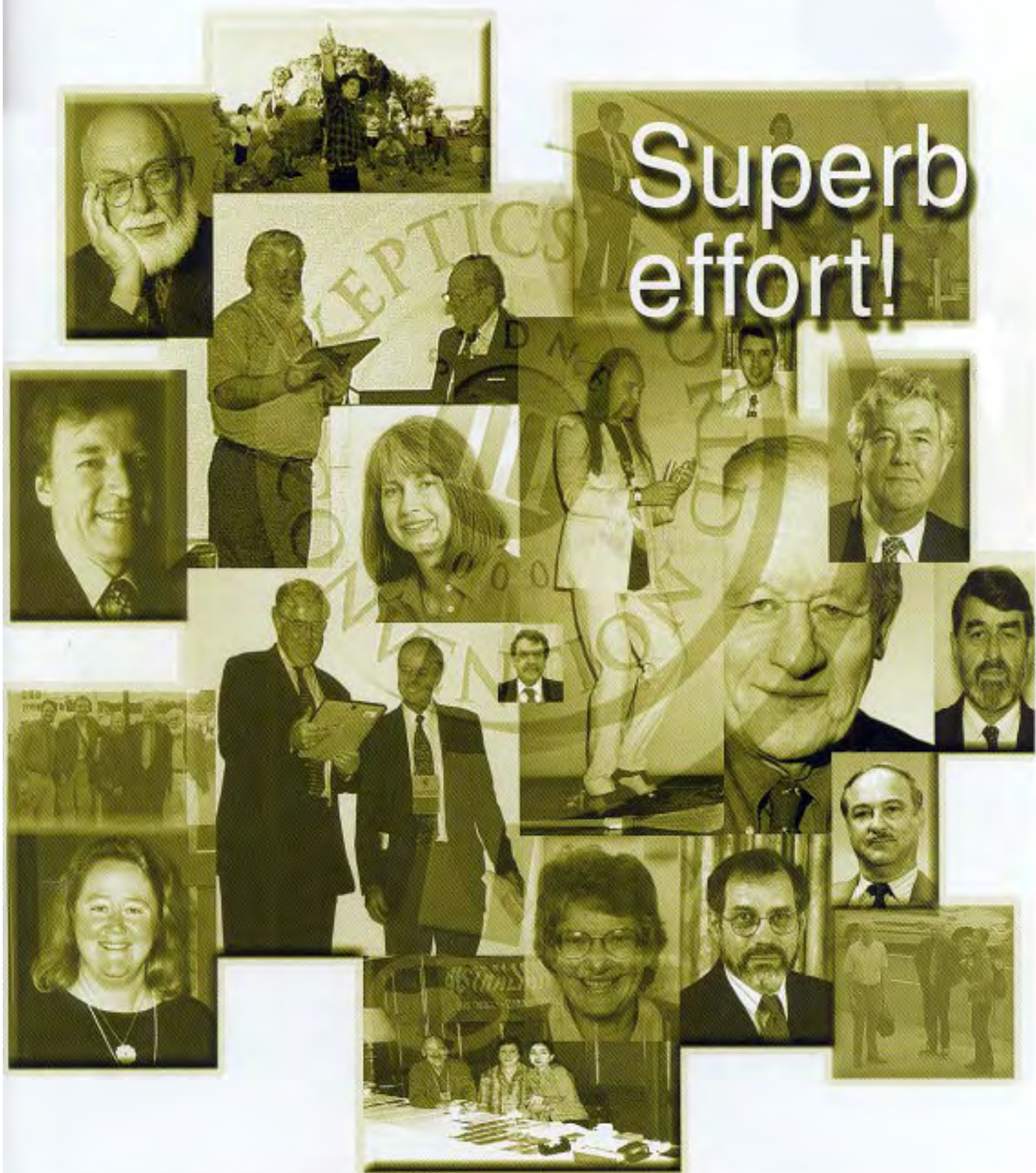
the skeptic



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Superb
effort!



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EDITORIAL

WORLD SKEPTICS CONVENTION III AN OUTSTANDING SUCCESS.

The World Skeptics Convention, held at the University of Sydney from November 10-12 was, by any measure, an outstanding success.

More than 400 Skeptics and members of the public registered for one or more days of the event, with an attendance of between 1000 and 1200 over the three days of the convention. This was by far the largest Skeptical event ever held in Australia, and compared more than favourably with the similar convention held in Heidelberg two years ago.

Speakers and visitors attended from all states, as well as from Canada, China, India, Japan, New Zealand, the UK and the USA. This issue contains several papers from the convention and a summary of all that happened and more papers will be appearing in future issues of the *Skeptic*.

The committee has been inundated with compliments from visitors and speakers alike regarding the quality of the presentations and the organisation of the event. It was a well-run affair, but as *Skeptic* editor, Barry Williams, mentioned in his presentation, "at times it very much resembled a duck: all calmness and serenity on the surface and all frantic paddling underneath."

Everyone involved deserves the highest credit for their remarkable dedication and effort. Well done; here at *the Skeptic* we are proud of you all.

New Subscribers

It is never easy getting new subscribers to *the Skeptic*, but one of the most reliable methods we have found is to encourage existing subscribers to find new ones. In the past we have had many subscribers who chose to make a gift of a subscription to the magazine

For that reason we are instituting an incentive for you, our readers, to take out a gift subscription for someone else, at only half the regular price. Anyone who renews their own subscription (or anyone whose subscription is not due for renewal this year) can give one or more Gift Subscriptions for only \$22., as long as we receive the notice before January 31, 2001.

COMPLIMENTS OF THE SEASON TO ALL OUR READERS

Around the traps

Bunyip

After the Olympic euphoria has ebbed away and despite the subsequent "long dark Knight of the soul", we offer our congratulations to *Skeptic* subscriber, Dr Ric Charlesworth, the remarkable coach of the all-conquering Hockeyroos. Not only did this superb team of sportswomen win Gold Medals for hockey in two succeeding Games, but they have even been heard mentioned in the same sentence as Bradman's Invincibles from our self-confessed "cricket tragic" editor.

* * *

While on that track, we would guess that most sport loving readers would have been surprised and elated at the Gold Medal performance of Lauren Burns in the curious sport of tae kwon do. We were even more astonished to hear that Ms Burns' parents were in the audience to cheer her on. Hardly surprising you say? Many proud parents were there to cheer on their offspring.

True enough, but Lauren's father is none other than former pop singer, Ronnie Burns, who perpetrated *Prophecies and Predictions* that aired on Channel 9 a year or so back. Among the many "prophecies" included in that load of sensationalist drivel were several that referred to the Olympic Games in Sydney, and to those of us who, through a sense of duty, sat through the whole pathetic thing, the most enduring image was of a monster wave superimposed on a skyline of Sydney. This alleged prediction was based on the writings of such prophetic luminaries as Nostradamus, Mother Shipton, the legends of the Hopi Indians and assorted more modern cranks.

Silly though this programme was, it did disturb a number of people, some of whom rang the *Skeptics* to seek reassurance that the world was not about to end.

One would have thought that, given his conviction that something dire had been predicted Mr Burns would have done his utmost to ensure that neither he, nor any of his family, would be in such a dangerous place at such a fraught time. But there he was, a proud Dad, and he wasn't even wearing a life belt.

Then of course, we had the famous glitch as the "cauldron" bearing the Olympic Flame halted in its journey to the top of Stadium Australia.

Many might have missed the claim made by the formerly famous Mr Uri Geller, that the halt was caused by his focusing his mind on the flame in the interests of "world peace". Not only was this claim greeted with hilarity by those who read of it, but world peace doesn't seem to have improved much from his intervention either.

* * *

In another triumph for the "science" of astrology, US astrologers are claiming that the election shambles that has engulfed that country since November was predicted by Mercury going into (apparent) retrograde motion on October 18 and resuming its (apparent) forward motion on election day.

Of course Mercury doesn't really change its direction of motion, it burbles happily along in its orbit around the Sun, regardless of the concerns of Earthly folk, but its apparent motion, when seen from Earth, seems to reverse as the inner planet catches up to and passes us three or four times per year (Earth year, that is). But such things matter to astrologers, and Mercury, named as it is for the Roman messenger of the gods, is alleged to have much to do with communications and, presumably, elections.

Not surprisingly, no astrologer, nor any other predictor of the future by psychic means, actually predicted that the vagaries of the US electoral system would result in the unedifying spectacle of two parties fighting an election result in the courts of that nation, but we can expect that all of them will be scrabbling through their past maunderings to find something that could, by cunning use of language, be said to point that way.

Retrodiction is the real art of psychics, and we wouldn't be at all surprised to hear, down the track, that good old Nostradamus had the US dilemma exactly right in one of his impenetrable quatrains.

We're not sure what effect Mercury's peregrinations had on those two other important November events, the Melbourne Cup, and the World Skeptics Convention, but we suspect not much.

* * *

Congratulations to our indefatigable *Skeptics* webmeister, Greg Keogh, whose work is recognised by the fact that the site <www.skeptics.com.au> is consistently among the top ten sites hosted by Vicnet.

Add to this the fact that John Stear's No Answers in Genesis (NAG) site <www.onthenet.com.au/~stear/index.htm> is widely regarded as one of the best sites covering the evolution v creation debate, and that the recent World Convention has drawn widespread and deserved praise, and we can all be justifiably proud of what *Skeptics* are achieving in Australia.



Correction

Barry Williams

My thanks to those correspondents, including *Skeptic* subscriber (and, incidentally, my dentist) Trefor Davies, and several others of less obvious Cambrian descent, (who are "half-Welsh on my mother's side") who pointed out that in my "Musings..." (20:3) I said that the Welsh word for river is "affon", when it really is "afon". I can only plead brain rot or an overindulgence in leeks, as I knew that afon had only one "f".

Also thanks to Trefor, I must correct the statement that all the Welsh castles mentioned had been taken by enemies at one time or another. He points out that Caernarfon Castle was never taken, though on one occasion it was a close run thing.

Which raises another point: can all Trefor's other dental patients claim to be of Welsh extraction?

REPORT

WORLD SKEPTICS CONVENTION III, SYDNEY

Health, Wealth and Wellbeing through Critical Thinking

The World Convention, co-hosted by Australian Skeptics and CSICOP, and held at the University of Sydney from November 10-12, 2000, was always going to be a difficult event to bring off. As it happened, with around 400 people attending on each of the three days, it was one of the most successful Skeptics events ever held anywhere in the world, as the many comments and compliments we received from subscribers, members of the public, and overseas speakers, attest. Prof Paul Kurtz, founder of the modern Skeptics movement, said as much publicly at the convention, and he was even more glowing in his praise to members of the committee in private.

From Paul Kurtz's comments, we are now confirmed in our belief that the Australian Skeptics approach to its affairs: of taking the work seriously, but not ourselves; of leavening our serious purpose with good humour, is something that may well be taken aboard by Skeptics groups in other countries. One comment Paul made was that in all the Skeptics conventions he had attended, he had never heard so much laughter from the audience. He thought this was a very positive factor and we would have to agree with him completely.

He also mentioned the quality of the array of speakers we had assembled, noting that even CSICOP would be hard pressed to emulate it. As an example, he said it would be unusual in most countries for the chief prosecutor of the nation's largest judicial agency, the head of the major national regulatory authority, and the director of the leading museum, to appear together at a Skeptics convention. Or that the panel on alternative medicine would attract quite so many leading practitioners in their own particular fields to appear on the same platform at a lay conference. One doctor, having read our ad in a medical journal, came to the convention and took the time to tell us that in her many years in medicine, attending numerous medical conferences, she had never seen such a distinguished range of medical talent together on the same platform.

In the first instance this success was a tribute to the skills and persistence of the committee members who shouldered the responsibility of producing such an impressive array of speakers for each of the day's themes. Richard Gordon, Richard Lead and Trevor Case, worked extremely hard over a two year period to put together the excellent programme and we also had the great good fortune to get the assistance of Irene Case, whose organisational skills and the conference experience to ensure that everything was kept on track, and what a remarkable job she made of it. When it was suggested to the committee that she be made a Life Member, the response was immediate and unanimous.

Many others played a substantial part in keeping things running smoothly; Martin Hadley, Scott Campbell and Bob Nixon taking charge of the parallel sessions; Alynda Brown doing sterling service keeping

the constantly changing programme updated on the web site, with Vic Skeptics webmeister, Greg Keogh contributing a great deal in this regard. The SA and Hunter branches establishing booths to display Skeptics brochures and pseudo-medical gadgets, adding to the quality and interest. Brian Miller (Andrew Garrett Group) and Prof Brynn Hibberd (UNSW) organising a "wine challenge" which, although it didn't go exactly as planned, nevertheless helped maintain the good-natured atmosphere of the convention.

The organisation and co-ordination involved in an event of this size and complexity, contained innumerable possibilities for failure and on many occasions members of the organising committee must have asked themselves, "What have we done"? - but none of the potential disasters that could have wrecked it came to pass. Receiving an email from James Randi on Thursday (less than 24 hours before the convention was due to start) that he was in Beijing and had forgotten to get an Australian visa, was not designed to calm somewhat jittery nerves. As it turned out it was not really a problem and he turned up at Sydney International Airport on Friday morning, exactly as advertised.

Our co-sponsors at CSICOP must be thanked for their support in bringing speakers for overseas. It was never going to be easy, keeping the lines of communication open with so many foreign parts, but it worked out wonderfully well in the end. Then there was the spirit of volunteerism, (a hangover of the Olympic/Paralympic spirit, perhaps) with many people helping out: operating the registration desk, selling souvenir products; those from other branches chairing sessions, contributing ideas and support, encouraging their local subscribers to attend. There were too many to name all of them individually, but it would be ungracious not to mention the contributions made by Ros Fekitoa, Tina Case, Jessica Singer, Rafe Champion, John Stolsnow, Peter Bowditch, Alynda Brown, Colins Keay and Maybury, Laurie Eddie and Michelle Foster (S A), Bob Nixon and Richard Cadena (Vic), Richard Saunders, David Hellstrom and many, many more from around Australia. And there is also a somewhat more intangible factor at play here too, and that is the level of corporate credibility that we have achieved through our activities in all the Skeptics branches over the past few years. Without this it is inconceivable that so many distinguished speakers would have agreed to be part of this remarkable event.

To the organising committee members, to the speakers, to the willing volunteers, and not forgetting the large numbers of subscribers and others who attended, you all did great work and we offer our heartfelt thanks and congratulations.

Special thanks go to sponsors Alan Ekholm of A E Displays and Sales Pty Ltd for providing display stands, to Charles Rose of Co-gency for artwork and to BEE Printmail for printing our programme.

Summary Of Proceedings

Several of the papers from the convention are included in this issue, and we will publish more of them in future editions.

For providing the information for the following summary of the sessions, we are indebted to Vicki McGlashan (Canberra Skeptics), Trevor Case and Martin Hadley, and for the photographs, thanks go to Richard Cadena, Richard Saunders and Irene Case.

Friday 10 November (Wealth)

Dr *Richard Gordon*, President of Australian Skeptics, welcomed visitors and invited Professor Paul Kurtz, founder of the modern Skeptics movement and Chairman of CSICOP, co-host with Australian Skeptics of the Convention, to open the proceedings.



Richard Gordon, Barry Williams, Bob Steiner, Richard Lead and Mark Plummer

The need for a World Skeptics Movement

Paul Kurtz

Opening the Convention, Prof *Paul Kurtz* described the foundation of the Skeptics movement in 1976, explaining how it provides a worldwide insight into science and critical thinking, ultimately to the improvement of public understanding and acceptance of these vital topics. He said that the international conference provides an opportunity for a coordinated effort among the more than 100 Skeptics organisations in 38 countries, producing 80 magazines and newsletters. Expanding on his theme, he pointed out that although scientific and evidence based medicine is growing more reliable, nevertheless unsubstantiated alternative medical claims have taken off like a UFO; similarly, in some countries there are ten times as many astrologers as astronomers. Pointing to some of the similarities and differences between Australia and the USA, he mentioned that while 15 per cent of Australians believe in creationism, in the USA this figure is 40 to 50 per cent. Prof Kurtz reminded us that the number of paranormal publications in book-stalls by far outweighs the number of scientific ones.

How far can critical thinking be extended?

Paul Kurtz

Prof *Paul Kurtz* asked what is critical thinking and is it synonymous with common-sense? He addresses these questions and more in a paper elsewhere in this issue.

Pious scams

Joe Nickell

Dr *Joe Nickell*, Chief Investigator of CSICOP, explained that he resists the term “debunker” because he does not set out to debunk and dismiss but rather to inquire. He described his activities in the investigation of various statues and weeping icons, beginning with the statues in Georgia, reported to have heartbeats. Joe examined several of these statues with a stethoscope and could not detect any heartbeats. His suspicion was that observers of the heartbeat were feeling their own pulse in their hands. As victims of self-deception rather than perpetrators of pious fraud, these people deserve respect, to have their claims investigated and to have the answers explained kindly to them.

He has found that while weeping icons are often due to fraud he has found some that could better be explained by condensation, giving as an example the wooden statue of Fatima in New Orleans that had glass eyes. One of his well-known investigations was of an icon in a Greek Orthodox Church, where he found that the tears looked somewhat greasy. Investigation showed they were oil droplets, which once applied, can remain there for several months, a common occurrence with such claims.

Joe went on to discuss several alleged images of spirits. He observed that in the first twenty years after the invention of photography, ghosts were not recorded on cameras. This changed with the introduction of reusable glass plate negatives, which allowing two images to appear as if they were in the one photograph (double exposure).

Don't get taken

Robert Steiner

Bob Steiner, an old friend of Australian Skeptics since he toured here as “psychic” Steve Terbot in 1984, was a most welcome guest. He began by demonstrating how easily we can be fooled by card tricks and stated that confidence tricksters often succeed because they seek out potential victims who are unhappy or depressed. Many scan newspapers for obituary notices so they can prey on people who while grieving, have an inclination to believe the information they are presented with regarding their loved one. In other cases, people are tempted by greed, status or recognition.

Bob demonstrated many card tricks, one of which he claimed was very similar to the well-known case of "Clever Hans", the horse whose owner (as well as many scientists) thought could understand simple arithmetic. After testing, it was found that the horse could tell the correct answer by reading his owner's body language. Bob purported to demonstrate how he, too, used body language to tell which cards his subjects had chosen, though a Skeptic would be well advised to suspect that this was yet another of Bob's clever tricks.

In conclusion, Bob Steiner said that even though card counters can potentially make a lot of money they are banned from casinos as soon as they are discovered. The many hours they spend practising therefore only bring in a reward of about one dollar per hour.

False prophets and other wankers

Nicholas Cowdery QC

Mr Nick Cowdery, Director of Public Prosecutions for NSW, provided an interesting and humorous perspective on the legal consequences of paranormal claims. His paper appears in this issue.



Session chairman Richard Lead with Alan Cameron

Legal protection

Alan Cameron AM

Those who expected to hear a dry official explanation of the legal remedies for fraud, were given an unexpected treat by Alan Cameron, in a humorous presentation that contained a serious message. He began by informing us that this was his last public speaking event as chairman of the Australian Securities and Investments Commission (ASIC).

He spoke of some of the activities undertaken by ASIC to educate the public. Each year around about April 1, they place advertisements in prominent newspapers, to find out the level of gullibility in the community. For example, 700 people answered advertisements seeking people who would invest in land and airspace packages, bluebottle farms or goat/sheep crossbreeding. Millennium bug insurance, guaranteeing a 30 per cent return attracted 10,300 visits to the website, despite the site not being advertised. Two hundred and thirty two people agreed to invest a total of \$4.2 million in the fake scam.

ASIC has been awarded the World Gold Award for

the best investor initiative anywhere in the world. They also have a monthly award for scam spotting. We were reminded that if there is no real evidence for an investment, then treat it with caution. The key is to look for confusing language, name dropping, jargon, outstanding yet unsubstantiated claims, the promise of high returns (which equal high risk) and a request to not tell other people about the fantastic offer. People are often more likely to believe information given to them on a personal basis than that provided by a credible source. Mr Cameron suggested that we ask people for evidence of their licence and who they work for. He further pointed out that it is not too difficult to find out whether investment advisers are registered. All you have to do is look up ASIC's website www.fido.gov.au. There is an entire section on the consumer page devoted to scams and the list of those who have been struck off is readily available.

But I saw it with my own eyes

Steve Walker & Peter Rodgers

Steve Walker, a long-time supporter of the Skeptics and one of the most amusing of speakers, gave us a little background into how he became a magician. His father, he claimed, was a psychic who also had Alzheimer's, so he used to forget things that hadn't happened yet. Steve told us that he has inherited one of his father's talents, but he couldn't remember which. He set out to show us why gamblers never cheat and cheats never gamble. He explained that intelligent people are often fooled because their brains try to fill in the gaps and what you see is very often what you want to see. He showed us how he could link together rings that were two-thousand years old, with two-thousand year old jokes to accompany this.

Peter Rodgers, a member of the Skeptics committee, showed us that he can predict the future. He borrowed a \$50 note, placed it in one of three envelopes then proceeded to burn two of the envelopes. By any reckoning there should be a two in three chance that the \$50 had also been burnt, however, he ultimately appeared to extract the \$50 from the third and unburnt envelope. He then showed us how he could apparently cut a rope which then appeared to be whole again. His final ad-



Peter Rodgers baffles his willing assistants

vice was that we should ask ourselves, if a fool and his money are easily parted, then how did they get together in the first place.

A classic performance by two very accomplished magicians.

The case for and against astrology

Geoffrey Dean

Dr *Geoff Dean*, one of the world's leading researchers into astrology, set out to demonstrate that there is more to astrology than simply being true or false. Firstly, he presented us with an amazing slide show featuring some outstanding attractions of Western Australia that tourists do not usually visit, using this to make his point about astrology. He explained that the history of astrology is unclear and that it is at least 4,000 years old. He showed that although Alfred Russell Wallace (a Capricorn) thought that phrenology would survive for ever, it declined very quickly after 1900 and this can be demonstrated by the cessation of phrenology books published after that time.

In India, astrology is accepted as part of life and there would be as many astrologers there as there are in rest of the world combined. Astrology books are full of words of compassion, unlike psychology books. Astrology provides what people want, makes them feel good and is often cheaper than a psychological consultation, which may cost \$150.

Dr Dean described the work of Michel Gauquelin, who collected and analysed information on 20,000 births. After comparing this to information about the immanent people they grew into, Gauquelin believed that there was evidence for astrology. It was later found that at the time of the births studied by Gauquelin, the parents registered birth times. Those who read almanacs could register the time of birth as one that was consistent with their expectations of the child's future. This explains why witching days had fewer registered births and a disproportionate number of births were registered against "lucky days". Once births had to be registered by doctors, tampering reduced and the correlation between birth times and expected outcomes diminished.

In a study of London births for one week of March 1958, there was found to be no significant correlation between astrological predictions and outcomes. Such research does not deter astrologers, however, because it is devoid of spiritual value. Dr Dean concluded that although there is little basis for the claims made by astrology, whether it is true or false it not the issue. It can be a useful means of communicating and offers a different viewpoint on life.

The Return of Randi (with Carlos)

James Randi

James Randi, professional illusionist and one of the world's leading exposers of psychic fraud, explained that people often take up challenges when there is a prize to be won. However, his US\$1.75 million Challenge is rarely attempted by any of the highest profile self-proclaimed psychics. He is not surprised, because



James Randi gets the bends

they know they cannot demonstrate their "powers" under carefully controlled conditions. He said that it is a very dangerous thing to believe in nonsense, the danger being the emotional dependence on psychic powers. We are deceived because we make assumptions, even the highly intelligent can be fooled by the most basic of tricks. He demonstrated many of the tricks used by supposed psychics, including spoon bending and turning a watch back.

James Randi explained how he has exposed various "faith healers", for example the Reverend Peter Popoff, whose wife chatted to people in the audience prior to his shows, taking down their names, dates of birth, addresses and details of their illnesses. This information was provided to Popoff by radio through his (highly suspicious) "hearing aid" and was used throughout the show to fool the rest of the audience into thinking that he was hearing God speaking. Popoff went to gaol, but he's now back peddling the same snake oil.



Luis Alvarez in Carlos rig

We heard of and saw film of Randi's imitation of "psychic surgery", where tumours and cancers are supposedly removed from people without incision. He spoke of the thousands of people (including Peter Sellers) who go every year to the Philippines to be treated by psychic surgeons, then come home to die. The key, according to James is to get to young people who do not need this to be true. He pointed out that if people can build the great wall of China and go to the moon, we don't need false mysticism to be true.

Finally he introduced the audience to *Luis Alvarez*, a friend who, as a young and untrained amateur actor, had successfully played the role of trance channeller, Carlos, in a hoax perpetrated on the Australian media in 1990. Luis, resplendent in his Carlos robes, recalled his performance with pleasure.

Our special thanks go to Dick Smith Foods Pty Ltd for sponsoring the visit by James Randi and Luis Alvarez.

Saturday 11 November (Wellbeing)

A Nano-History of Australian Skeptics

Barry Williams

The Saturday session of the convention was opened by *Barry Williams*, Executive Officer of Australian Skeptics Inc (which, incidentally, makes Barry the only Professional Skeptic in Australia, a fact that gives him great pleasure when completing official documents). He provided a humorous insight into his involvement in the Australian Skeptics since its inception in 1980, recounting such memorable moments in its history as magician Bob Steiner's 1984 visit to Australia in the guise of psychic "Steve Terbot" and the "Carlos Hoax" perpetrated by James Randi. In 1990, Barry agreed to edit his first issue of the *Skeptic*. Forty issues later, the *Skeptic* has emerged as one of the most authoritative, yet humorous, *Skeptical* publications in the world Barry reminded us that Australian Skeptics Inc sponsors the Eureka Prize and the Exploratory Exhibition at Mt Stromlo, among other sponsorships of educational and scientific programmes.

Kevin Christopher, Media Relations Officer of the Committee for the Scientific Investigation of Claims Of the Paranormal (CSICOP), spoke briefly on the activities of his organisation, whose website gets approximately 80-100,000 hits per month. Among other valued projects, CSICOP has developed and made available to schoolteachers the *Science versus Paranormal Kit* including the beyond belief video.

Whence cometh the myth that we only use ten percent of our brains?

Barry Beyerstein

Dr *Barry Beyerstein*, an Associate Professor of Psychology at Simon Fraser University, Vancouver, discussed the origins of the myth that we only use 10% of our brains. He explained that this popular misconception appears to have its origins in distortions of early neurological research by the pop-psychology self-improvement industry, stating that although Freud was not a proponent of the myth, his ideas may have contributed to later thinking. According to the advocates of this myth, the unused 90% is untapped potential that is implicated in extrasensory perception and other such phenomena.

Notwithstanding, Dr Beyerstein pointed out that damage or removal to even a small percentage of the brain results in severe behavioural deficits. Furthermore, he argued that it would be very odd for an organ such as the brain, which is so expensive in terms of energy usage, to have evolved a mass that is 90% redundant. Psychologists have noted that when compared to other mammals, humans have a higher proportion of the brain attributed to association areas. Although they may not have originally known the purpose of these, this does not necessarily mean that they have no defined purpose or that they are not being used to their capacity. Interestingly, although the claim that we only use 10% of our brains is often attributed to Albert Einstein, Dr Beyerstein notes there is no record of him ever having said this.

Creationism and Postmodernism: two peas?

Ian Plimer

Ian Plimer, Professor of Geology at the University of Melbourne, provided a passionate and thought-provoking presentation on a topic close to his heart: attempts by creationists to distort or ignore theological scholarship and the findings of science and history. Professor Plimer was involved in the high profile Noah's Ark case in 1997 against a creationist who claimed that he had found the final resting place of the mythical vessel.

In his talk, Prof Plimer argued that Creationism is a form of postmodernism in which creationists attempt, by highlighting differences among interpretations of scientific data and findings, to claim that this makes science unreliable. In addition, he argued that Creationists knowingly attempt to promote discredited and falsified science arguing that creationism has nothing to do with theology or science and that creationists are constantly diverting attention from their main game, which is politics. He questioned whether creationism even has a place in churches, let alone schools. In concluding, he pointed out that as the minds of young people are often formed from emotional experience, creationism is an attack on our kids, not an attack on science.

Critical thinking in parapsychology

Richard Wiseman and Caroline Watt

In one of the most talked about presentations of the convention, Dr *Richard Wiseman* of the Psychology Department, University of Hertfordshire, discussed some of the types of deception and self-deception that can lead people to attribute paranormal causation to normal events. He examines what is not psychic but looks like it, and asked whether traditional Victorian methods would still fool an intelligent, sophisticated audience today – or even a bunch of *Skeptics*. He showed a film of one of the seven fake séances he had set up to test how easily people can believe what they are told even when there is no evidence for it. He found that 31% of 152 people who attended the séances believed that the table had moved, probably because the séance master had suggested this to them.

He presented the findings of his investigations into a "psychic dog." In an obvious reference to the claims of Rupert Sheldrake, he showed how dog that appears restless and waits at the door when his owner is about to return home, also behaves in this manner when his owner is not returning home. That is, rather than the dog having psychic ability, he just frequently anticipates the arrival of his owner: the occasional coincidence between the owner returning home and the dog waiting at the door is offset by the many false alarms.

Dr *Caroline Watt* from the Koestler Parapsychology Unit, University of Edinburgh, joined her colleague and gave an interesting account of unsuccessful attempts of parapsychologists to investigate the existence of extrasensory perception. After much controversy and decades of research, a precise experimental design called the "Ganzfeld procedure" has emerged. The value of this procedure is that it is an attempt to rule



Geoff Dean, Richard Wiseman and Caroline Watt at the convention

out possible alternate explanations for positive results such as cheating or unintentional leakage of information from the experimenter. Experiments that have complied with the rigours of the Ganzfeld procedure reveal that the performance of participants in these studies is no better than guessing. However, meta-analysis of Ganzfeld studies gives recommendations on how the tests could be improved and standardised. Dr Watt's conclusions were that critical thinking should reduce false positives and false negatives and the Ganzfeld test has not yet provided replicable evidence for psi.

Accordingly, James Randi's million-dollar prize does not appear to be under any threat from the research efforts of parapsychologists.

Towards the new millennium: The flight from reason

Maciej Henneberg

In a provocative comment on current issues in higher education and academic research, Prof *Maciej Henneberg*, Head of Department of Anatomical Sciences at the University of Adelaide underlined the consequences of an underfunded public education system. Prof Henneberg's paper is reproduced in this issue.

Playing God: Can we resurrect the thylacine?

Michael Archer

Prof *Mike Archer*, Director of the Australian Museum, gave an enlightening presentation on mysterious sightings of the extinct Tasmanian Tiger (*Thylacine*), an animal which has fascinated him since he was a small child. Over the years there have been numerous photographs and apparent sightings offered as evidence of the current existence of the thylacine. Investigations of these suggest that witnesses are either mistaken or involved in an elaborate hoax. In fact, one investigation of such a sighting led him to a sheep painted with black stripes. Regardless of the lack of evidence for the exist-

ence of the animal, Mike suggested that cloning could be possible from the preserved DNA of a four-month old thylacine. Addressing the claim that such activities can be seen as "playing God", Professor Archer said that humans played God when they drove the thylacine to extinction, now we have a chance to resurrect it.

How can you tell from make believe?

Roland Seidel

In perhaps that most memorable presentation given at the convention, *Roland Seidel* opened with a bold 5 minute theatrical performance in which he mimed and danced, with the aid of various props, to a prerecorded song that he composed called *How can you tell from make believe?* At one stage of this performance, the words to the song referred to the face on Mars. To this Roland swayed back and forth while holding a plastic child's mask of a smiling moon in front of his face. In true Roland style, this certainly was a head-turner of a performance. He then took us on a mystery tour of our brains.

Drawing on the work of well-known Skeptics such as Susan Blackmore and Richard Dawkins, Roland argued for the primacy of a scientific world view in an attempt to overcome what he calls "Brain Swindles." He noted that when reading new age literature, "if you replace the word 'true' with 'entertaining', it makes a lot more sense. He also explained that many young, black, poor or uneducated people turn to new age culture because they do not have access to real power. In the case of our own brains, we should always search for clues because *clarity begins at home*.

Roland's paper is elsewhere in this issue.

The need to believe: Magic may not work, but it might make me feel better -

Trevor Case

Dr *Trevor Case*, from the Department of Psychology at Macquarie University and Vice President of Australian Skeptics, presented some of his doctoral research, which examined the relationship between uncertainty and superstition. He presented findings that suggest that under conditions of uncertainty many people will turn to superstitions. Trevor suggested that, paradoxically, superstitious strategies might represent attempts to gain a feeling of control, even when people acknowledge that using a superstitious strategy to gain actual control is impossible. He is interested in superstitious strategies, starting with evidence that burial rituals began at least 40,000 years ago and gods are at least 5,000 year old.

Dr Case has conducted research to investigate what makes people give up primary control to others. His subjects are asked to chose cards in an attempt to score well and are given the option of allowing the decision to be made on their behalf either by a psychic, student or academic. This research has shown that people were more likely to hand over control when the chance of a good outcome was less than 50 per cent. They were more likely to use the psychic to make choices than the student or academic even though they had no faith in their use as a secondary control. When anxiety was

increased, people were more likely to use the psychic even though the anxiety level did not affect their perception of control. Whether or not anxiety was present, there was no association between belief in psychic powers and use of psychics.

Skepticism in the New Millennium

Richard Wiseman

In his second presentation, Dr *Wiseman* showed a number of video clips showing his exposure of various claimants of the paranormal. Firstly we saw two



Section of the crowd

firewalkers who claimed to have a mystical layer of protection around their bodies. In reality, it is relatively safe to walk on hot coals for 10 to 15 feet due to their low conductivity. Both firewalkers managed approximately 20 feet before having to be treated for burns. Dr *Wiseman* wondered which treatment they would have accepted had they been given a choice between the first aid tent and a faith healing tent.

He explained his mind machine, which allows people to try to psychically influence whether the machine will choose heads or tails. Of the 30,000 people who have tried this, 50 per cent have chosen correctly, yet only 60 per cent knew they had a 50 per cent chance of correctly predicting heads or tails. In another experiment, Dr *Wiseman* found that people at Hampton Court Palace thought they could experience unusual things, such as a sudden drop in temperature or an unusual emotion, largely because they had been told that others had experienced such things in the same rooms. Believers were more likely to experience such things than those who previously had no experience of such unusual things.



Speakers Roland Seidel and Bob Steiner enjoying the cruise.

Skeptical science scuttles scaremongers

Colin Keay

Prof *Colin Keay*, a retired physicist and astronomer provided a thought provoking presentation on the portrayal of threats to public health and the environment. Professor *Keay* argued that many of these threats are actually quite trivial, yet media sensationalism appears to take precedence over sensible scepticism in the evaluation of such risks.

Dr *Keay's* paper appears in this issue.

Psychic vs psychological profiling in violent crime investigations

Richard Kocsis

Richard Kocsis, a lecturer in violent crime at the NSW Police Academy and winner of the 2000 Australian Skeptics Eureka Prize for Critical Thinking, was inspired to assess the value of psychic abilities in relation to profiling as a result of a paranormal claim in a murder case. A psychic (offering their services for a fee) had claimed that a missing child was still alive. When the body of the child was found, it was realized that she had died prior to the psychic making the claim. Mr *Kocsis* stated that an effective profiler needs to have: an appreciation of the criminal mind; investigative experience; objective and logical analysis; and intuition.

His research tested the effectiveness of various groups at putting together the profile of a murderer in an already solved case. Profilers, detectives, psychologists, science students, psychics and economics students (the control) were each asked to answer 33 multiple choice questions. The results showed that Psychological Profilers were more accurate in their descriptions of the offender than the combination of police personnel, psychologists, psychics, and average citizens. Richard concluded that police would be better off relying on their own acumen than giving credence to the well-intentioned recommendations of psychics and his conclusion was that the psychics had little insight into the offender beyond the social stereotype of a murderer.

Harbour Cruise

Overseas and interstate visitors on the dinner cruise were treated to the spectacular sights of Sydney Harbour on a night when the weather was kind, and were entertained by the magical performances of James Randi, Bob Steiner, Steve Walker, Joe Nickell and Peter Rogers. It was a cruise that fulfilled all the expectations, and maintained the spirit of enjoyment that characterised this outstanding convention.

Eating your way to health through dietary supplements

Rosemary Stanton

Dr *Rosemary Stanton*, Australia's leading nutritionist, spoke of many products on the market aimed at those (usually women) who wish to loose weight. These included network marketing (the new name for multilayer selling), cellulite pills and the more recent clay and plastic wraps. The list was a long one, also including magic water that can be purchased with accompanying wands, slimming soap and one product that has to be taken on a empty stomach before bed, which coincidentally means that you don't get to eat a lot in the evenings.

Dr Stanton's paper is in this issue.

The threat of pseudoscience to medicine

Joe Proietto

Dr *Joe Proietto*, from the University of Melbourne Medical School and the Australian Society for the Study of Obesity, began by telling us that \$2 billion is spent each year on alternative medicine. It is GST free and some health care funds provide benefits for some alternative treatments. He said that while he cannot be sure that alternative medicines do not work, they certainly need better testing. Showing the cover of the *Journal of the American of Neutraceuticals Association* (JANA), (which looks suspiciously similar to the cover of the *Journals of the American Medical Association* (JAMA)), Dr Proietto described one article from JANA, which "demonstrated" that when people took gluconutritional supplements, alcohol craving reduced and their moods improved. However as the experiment had no control, the results were meaningless, and as the researchers worked for the company that produced the tablets, their motivation should be questioned. Dr Proietto said that as they are PhDs and MDs, they should have known better than to mislead people and that therefore their work amounted to fraud.

Also alarming was Dr Proietto's investigation of medical students, which showed that, based on the JANA research, many of them would have been prepared to prescribe the medication. If medical students cannot distinguish between pseudoscience and real science then what hope does the general public have? He concluded that students need to be taught more about critical thinking. One of the difficulties faced by academics is the lack of resources to adequately teach critical teaching. Despite this, evidence-based teaching has been introduced to the medical school at Melbourne University.



Vicki Hyde

Use and abuse of progesterone

Barry Wren

Prof *Barry Wren*, Chief Medical Officer of the Australian Menopause Society, spoke of natural progesterone and synthetic progestogen supplements, beginning by describing the role of progesterone, its production by the ovaries after ovulation and during pregnancy and its role in the maturation of breast alveolar cells. He explained that hormones are messengers with the role of influencing cells rather than as drugs.

Professor Wren described one study which showed that HRT used for more than four years indicated an increased risk of breast cancer. He then revealed that this had been a retrospective case control study and therefore not necessarily accurate. While progesterone increases the rate of mitosis, increased levels for an extended period will reduce mitosis dramatically. He warned of some treatments such as the transdermal progesterone cream that was found to be totally ineffective because progesterone is poorly absorbed through the skin. The only treatment as an alternative for HRT that has found to be effective is ginger and this was in reducing nausea, not as a hormone treatment.

Trust me, I'm a doctor

Gillian Shenfield

Prof *Gillian Shenfield*, Head of the Department of Pharmacology at Royal North Shore Hospital, looked at claims made by both orthodox and alternative medical practice and questioned how much of present medical practice will survive into the future. Her paper appears in this issue.

The anti-immunisation threat

Simon Chapman and Julie Leask

In a hard hitting presentation, Associate Prof *Simon Chapman* from the Department of Public Health and Community Medicine, and Ms *Julie Leask*, a doctoral candidate, at the University of Sydney, looked at the anti-immunisation claims that have gained so much media attention in recent years and showed the dangers such unsupported claims pose to community health.

Raising a Skeptical family

Vicki Hyde

In a well received talk, *Vicki Hyde*, science writer, populariser and Chair of the New Zealand Skeptics entertained the audience with a highly amusing talk on raising a Skeptical family. After many years of corresponding with Vicki, it was a great pleasure for all of us to meet her, and her husband Peter (who denied emphatically that his real name was Dr Jekyll) in person.

Mind over cancer - fact or fiction

Stuart Dunn

Stuart Dunn, Professor of Psychological medicine at the University of Sydney Northern Clinical School (RNSH), investigated claims that cancer can be cured by simply having the right frame of mind. He concluded that while this may help the patient in many ways, it cannot be said to cure the diseases.

Cancer quackery

Ray Lowenthal

Professor *Ray Lowenthal*, Director of Medical Oncology at the Royal Hobart Hospital, addressed the many myths that surround the treatment of cancer. Although there have been great advances in cancer treatment, it remains one of our society's leading causes of death. Thus many patients are tempted to try 'alternatives' to scientifically proven treatments. Currently popular are diets, 'immune stimulation' and shark cartilage. Methods that have come and gone include di Bella therapy (Italy) and Laetrile. In his talk he discussed the reasons behind the use of such therapies, the evidence for and against them, and methods by which genuine advances in medical treatment of cancer are made and recognised.

Skepticism improves your health

Les Irwig

Les Irwig, Professor of Epidemiology at the University of Sydney, discussed the ways in which one could improve one's health by being sceptical about the treatments on offer. A precis of his talk appears in this issue.

Veterinary quackery

Roger Clarke

Dr *Roger Clarke*, former President of the Australian Veterinary Association and founder of *Veterinary Skeptics*, set out to explain that if we ignore the mistakes of history we are bound to repeat them. He believes that we have reached a political climate where it is OK to believe in almost anything, but incorrect to be heard criticising people for their beliefs. Following an increase in the use of alternative veterinary medicine, in 1999 he formed the *Australian Veterinary Skeptics*. He would like to see alternative medicine stand alone and it should not be entitled to rely on a seal of approval from orthodox medical and veterinary organisations.

Dr Clarke gave a short history of veterinary science (warts and all) dating back to the days of the centaur. In the middle ages and for 1,700 years, veterinary science was based on superstition and the occult. One of the most important lessons we can learn is that provided by Louis Pasteur, who had been treated with scepticism. For 25 years he was prevented from publishing his work because it was said to be compulsive and obsessive, but he prevailed because his ideas were supported by evidence. Such does not apply to many

of the "alternative" claims made by some modern practitioners. Dr Clarke believes that the arrogance of certainty is a human failing and we need to learn from history.

Doctors must take a leadership role in protecting the public from quackery

John Dwyer

Prof *John Dwyer*, immunologist at the University of NSW and Prince of Wales Hospital, and one of Australia's best known medical academics, specialises in treating people with chronic complex incurable, often untreatable, illnesses. A precis of his talk follows.

Australians spend more than \$1.5 billion a year on advice and treatment from so-called "alternative health practitioners and in the majority of cases get robbed for their trouble. There is much that is ironic about the situation. This is the most scientific of all ages and orthodox medicine is applying itself more diligently than ever to the practice of "evidence based medicine". It is imperative that our profession asks and answers the question "why are so many of our patients attracted to unscientific health care"? Clearly we need to get our own house in order if we are to be potent advocates for cost-effective evidence based medicine. Our current Medicare system minimises the satisfaction of the personal encounter between doctor and patient.



John Dwyer addresses the convention

A number of doctors using an "if you can't beat them you'd better join them" philosophy have embraced non-science (nonsense). Perhaps there is some truth in the claim that in a post-modern world individuals are yearning for something a little mystical and less coldly scientific as they strive to maintain their health and cure their illnesses. Obviously there are only two types of medicine, "good" and "bad". In a society like ours which espouses consumer protectionism there has been remarkably little done to protect the vulnerable from exploitation in this area. This is not a trivial matter, for all of us faced with serious illness or an incurable disease become vulnerable to the false hope and exploitation that is currently offered by so many. Politicians have tended to put the issues into the "too hard

basket" to date. Signs that the Australian Competition & Consumer Commission is becoming more vigilant are welcome. Only by forthrightly and consistently bringing to the public's attention the exploitation on offer can we ensure that facts rather than fraud predominate in the area of health maintenance and the care of the sick.

Prof Dwyer pointed out that the AMA is not able to influence governments alone and welcomed the support of Australian Skeptics in helping to make the public aware of the dubious claims made by "alternative" practitioners. At the conclusion of his presentation, Prof Dwyer was presented with a scroll naming him as Australian Skeptic of the Year for 2000 (story elsewhere in this issue).

Therapeutic touch

Vern Bullough

Prof *Vern Bullough*, Adjunct Professor at the University of Southern California, started by clarifying that despite the expression "therapeutic touch", it is not therapeutic and does not involve touch. Real touch is therapeutic, while therapeutic touch is derived from theosophy and was picked up by the people who believe that we can be diagnosed by our auras. Any healthy person with the appropriate training can allegedly use this method. It is popular among nurses even though in 1998 a high school student wrote a thesis showing it does not work.



Vern Bullough

Professor Bullough questioned why we do not treat therapeutic touch as a religion; the problem is that once you do this, the existing religions would have it banned due to competition.

Sunday 12 November, (Parallel Session)

Falun Gong

Shen Zhenyu & Duan Qiming

Professor *Shen* and Mr *Duan* explained that Falun Gong was created as a religion yet is based on superstition and is harmful to Chinese society. Ninety per cent of its followers have realised that it is an evil cult, a total of 141 followers have been imprisoned and 123 fined.

Mr Duan explained why it is not a religion. Followers of Falun Gong worship the cult master, who claims to be a living god. He rejects progressive aspects of society such as ethical and moral practices and modern science. Religions fit in with the normal legal processes and social strata.

Mr Duan explained that Falun Gong has done great harm to the lives of many people and it has been banned in China since 22 July 1999. Various governments throughout the world keep a watch out for cults and in countries where Falun Gong has spread to, governments have supported the ban.

This talk, which seemed to be an iteration of official Chinese Government policy on the cult, caused some concern among listeners. At its conclusion, Prof Paul Kurtz pointed out that CSICOP is not a political organisation, does not get involved in debate over human rights and would not prevent the freedom of speech. Australian Skeptics concurs with this view.

Qigong and other paranormal claims

Sima Nan



Sima Nan

Mr *Sima Nan*, uses his skill as a magician to help villagers in his native China to understand the simple trickery that lies behind many paranormal claims. He demonstrated the correct way to bend and break spoons using the power of his mind and ap-

peared to break a chopstick against his neck, then used a US dollar note to break a chopstick in half. He also used a glass to break a brick. The interaction between Mr Sima, the interpreter and the audience was charismatic.

Mr Sima explained that in China people with supernatural powers can tell what is written on a piece of paper by placing it in the ear. After demonstrating this, he told us that the gullibility of the audience indicated that he could make a lot of money in Australia.

He then turned to the serious side of his work. He told us about a man who after being in gaol for 24 years needed an income, so claimed to have supernatural powers and dressed as a monk. When Mr Sima asked the Qigong master several penetrating questions, he and 200 of his disciples beat Mr Sima. Eventually, the Qigong master was gaoled for five years. Mr Sima told us about others who have been gaoled after claiming supernatural powers, including one who issues PhD certificates for less than US \$1,000. He said that James Randi is his hero.

Fighting superstition in India

Sanal Edamaruku

The afternoon parallel session began with *Sanal Edamaruku*, Chairman of the Indian Rationalists Association. In a country riddled with superstition, he uses creativity and humour to make his point.

He discussed the well-reported case of statues of the Hindu god, Ganesha, drinking milk through



Sanal Edamaruku

their elephant trunks. People would give a spoonful of milk to the statue and see it disappear. Mr Edamaruku spoke of the work of the Indian Rationalists in investigating this phenomenon. They found that a bust of the Prime Minister could also drink milk (as well as beer). Many statues of Ganesha did not at first take in the milk easily, hinting that brass is not quite so porous as stone. Supplies of milk sold out by 11 am on the first day of this phenomenon and over the following three days the price of milk rose by eight times. Clearly India was heading for an economic crisis if this continued. The Indian Rationalists were successful at reaching the media, with the evening TV audience seeing Sanal persuading statues to 'drink' other liquids, including beer – sacrilege!. The entire scientific community coming out to explain the situation (giving the public a lesson in capillary action) and the phenomenon stopped immediately.

Mr Edamaruku also spoke of prominent guru, Sai Baba, who, because he ran a hospital, was not taxed. Attention has been taken away from him since he has been accused of 300 cases of sexual abuse of children. At first Indian newspapers were reluctant to report this, now all the newspapers are reporting the situation and Sai Baba can no longer be seen on Indian TV. Mr Edamaruku observed that it is a shame it took a sexual scandal to expose Sai Baba. Now, in India, when there are paranormal claims, the Rationalists are there to expose them within a few hours. Their most rewarding times are when people embrace them after an exposure.

Evidence and likelihood



Scott Campbell

Scott Campbell

Dr *Scott Campbell*, a philosophy lecturer at UNSW and a member of the Australian Skeptics committee, spoke about inductive reasoning (the making of claims about the unobserved on the basis of what has so far been observed).

After David Hume claimed to have found proof that inductive reasoning was not justified, Popper promoted the view that we cannot assume by inductive reasoning that the future will be like the past; we

can only deduce this by prior experience. For example, Europeans believed that all swans were white... until they came to Australia, where black ones were found (and you only need one black swan to disprove the theory). Popper reasoned that if there are an infinite number of theories, all of them must have a zero probability of being correct. He denied that theories could increase in likelihood, so they could only ever have nil per cent likelihood. This led to the belief that there was no basis for believing one theory over another.

Dr Campbell told us that inductive skepticism implies that no inductive conclusion is ever justified. The vast majority of reasonably sized subsets of a given population are representative of that population. There-

fore, if the first three thousand crows you see are black, there is a very high probability that all crows are black and therefore, such a hypothesis has an extremely high probability. One can only conclude that Popper was wrong and inductive reasoning is justified.

Aum Supreme Truth Cult

Ryutarou Minakamai

Mr *Minakamai*, from the Japan Anti-Pseudoscience Activities Network (JAPAN), spoke of the Aum cult subway terrorist attack, which occurred on 20 March 1995. Deadly sarin gas was released during the morning rush hour, killing 12 and injuring 5,500 people. The Aum Shinrikyo Cult has killed a total of thirty people, including four of their own members. Mr Minakamai wondered how it could be that they are permitted to keep their web site. Although the Public Security Investigation Agency tried to disband the cult by the



Ryutarou Minakamai

Subversive Activities Prevention Law, the Public Security Commission decided not to apply this law since all the board members of the cult had been arrested. Aum had accepted a request to discontinue their successful PC business, however, the administrator in Bankruptcy for Aum insists the business be resumed in order for

Aum to pay their four billion yen debt resulting from their activities.

Mr Minakamai explained that the TV industry in Japan has the biggest influence over public opinion. Prior to the subway attack, programs about supernatural phenomena earned good ratings. After the attack, TV channels in Japan voluntarily refrained from these types of programs. However after one year, the broadcast of programs about the supernatural returned in a more sophisticated way. Skeptics invited onto the shows do not always state the truth or they provide explanations that sound scientific instead of questioning whether the reported phenomena really have happened. Mr Minakamai concluded that there is much to be done by Skeptics in Japan.



HOW FAR CAN CRITICAL THINKING BE EXTENDED?

Paul Kurtz

Skeptics are committed to critical thinking. We wish to use the best tools of reason and science to evaluate truth claims. We are disturbed by the proliferation of untested paranormal and pseudoscientific claims. We wish to encourage research into these claims and to make this information available to the general public.

Our basic goal is to increase public understanding of science. This means that we wish to develop an appreciation for the methods of inquiry used in science. The methods of science are not esoteric, open only to specialists; they are continuous with common sense, the methods we use in practical life to evaluate claims to truth, and they draw upon factual evidence and reasons to justify them.

An integral part of the process of scientific inquiry is skeptical doubt. This means that if a belief or hypothesis is unsupported by evidence or contradicts a coherent framework of well established beliefs, or if predictions made on the basis of a belief falsifies it, then we ought to reject the belief, or suspend judgment, and assume the role of the agnostic until it is warranted. If a belief cannot be adequately justified by an objective appeal to evidence and reason, then so much the worse for the belief.

Although we say we are skeptics, this does not mean that we have closed minds; nor does it mean that we preclude responsible paranormal examinations *a priori*. On the current scene there are a wide range of paranormal beliefs that are extremely popular - including belief in psychic phenomena, psychic healing, psychic surgery, psychokinesis, ESP, telepathy, clairvoyance, precognition, psychic detectives, UFO visitations, and abductions, claims of astrology and varieties of so-called alternative medicine, from therapeutic touch and Qigong to homoeopathy. We have called for the rigorous investigation of these claims, and wherever possible, double-blind tests. Inasmuch as we do not think that the lion's share of these extraordinary claims have been adequately rested, we question their truth value.

Although skepticism is essential, in our view, in both science and practical life - it is equivalent to how an educated or reflective mind operates - in no sense are we denying that knowledge is possible. In the history of skepticism, many

skeptics were considered to be negative, total rejectionists of the possibility of knowledge. The term skepticism was applied to each and every claim to truth. We do not imply that. We are committed to using the methods of science; and we maintain that using such methods is the best way that we have for developing knowledge. Thus, unlike classical skepticism, we maintain that there is such a thing as *reliable* knowledge, both in ordinary life and in the sophisticated fields of science. Accordingly, many of us have preferred to focus on the term *inquiry* (the name of our chief magazine is *Skeptical Inquirer*); namely, we wish to engage in inquiry into any number of questions on the borderlines of science. We say that until we investigate or inquire, and find supportive evidence and reasons for a claim, then we ought to suspend judgment. But we never deny the possibility of understanding nature. Thus the *New Skepticism* is constructive and positive, and it leads in the long run to the progressive development of research and knowledge.

The skeptical movement worldwide (now almost twenty-five years old) has focused on paranormal anomalies and fringe sciences, simply because we did not think there is adequate impartial scientific investigation of these claims. What we are confronted with in the worldwide media is a barrage of pro-paranormal propaganda, in which gurus, psychics, astrologers, seers, prophets and healers, and their pseudoscience advocates, maintain that this, that, or something else is at the edge of a momentous breakthrough. We question these assertions. We say that extraordinary claims require strong evidence - but we find there to be a dearth of such evidence. Thus the Committee for the Scientific Investigation of Claims of the Paranormal and the many affiliated skeptical organisations throughout the world function as an interdisciplinary cooperative effort of inquirers evaluating these claims. Inasmuch as the media is global, we need a global response.

We have had considerable success in our endeavours. Until we came on the scene there were very few if any efforts to test astrology. I think that we can say that more research into the claims of astrology has been done in the last 25 years than ever before in history. Similarly,



Paul Kurtz

although psychical research is over a century old, our calls for the careful evaluation of parapsychological claims has engendered a good deal of skepticism about their validity. At the present moment alternative medicine is growing by leaps and bounds, and gurus such as Andrew Weil and Deepak Chopra command great attention. But whether acupuncture, herbal medicine, iridology, primal scream, and various other forms of therapy are effective, still needs to be properly answered. And we say that since the health and welfare of the public is at stake there ought to be vigorous scientific reviews of these claims.

Applying skepticism and critical thinking to life

The central question that I want to raise here is, "How far can skepticism and critical thinking be applied in life?" The contemporary skeptical movement has by and large confined skepticism, science and critical thinking to a limited area - the paranormal. Because of the division of labor, we have developed expertise in this area, and we have brought psychologists, astronomers, philosophers, statisticians, magicians, and a wide range of other researchers, to examine and test paranormal claims. But can critical thinking, broadly conceived, be applied elsewhere, and, if so, how far and where? We use the term *critical thinking* synonymously with the *method of reason* or the *method of intelligence*, referring to cognitive inquiry. Although the most sophisticated application of critical thinking is exemplified in the sciences, its use surely goes beyond this. Indeed, the methods of critical thinking can and are applied everywhere in society and life.

Let me reflect on its use in ordinary life. If your car breaks down, you will pull over to the side. You ask what happened and why, perhaps open up the hood; you may find that the battery is dead, that the car is out of oil, or that there is an electrical malfunction. Clearly, to understand what is happening and what can be done about it involves a reflective process. A person may not have sophisticated mechanical training and so his best remedy is to call a tow truck, take it to a garage and have an expert, who is schooled in mechanical problems, diagnose the symptoms and recommend repairs. The same process is used in dentistry. If a person has a toothache, he can try to gargle, or use dental floss, or brush his teeth, and hope that the pain will go away. If it persists, of course, he goes to a dentist, who takes x-rays, tries to determine if the tooth has a cavity, or has decayed, or the nerve has been infected or the gums are diseased. And so again a kind of process of practical thinking occurs. This is the same kind of thinking that happens in the developed sciences where you try to test a hypothesis, develop a theory, undertake laboratory experiments to test the hypothesis or theory, and appeal to peer review.

I reiterate a question for us is, How far can this method be extended? Bertrand Russell proposed a doctrine that, he claimed, appears to be "widely paradoxical and subversive", namely, "that it is undesirable to believe a proposition when there is no ground whatever for supposing it to be true." ¹ W. K Clifford, in an influential essay, "The Ethics of Belief," summed up his views in a bolder and more sweeping statement: "It is wrong always, everywhere, and for anyone, to believe

anything upon insufficient evidence."² Now both of these philosophers presented normative guides that they thought ought to apply in judging the truth of our beliefs. Perhaps they are too difficult to achieve in practice. The question can still be raised, "Can the methods of science and critical thinking be generalised, and can their applications be extrapolated everywhere?" Surely they are applied in the natural and biological sciences; where at least in principle, we have evidential criteria for judging their adequacy. Much of this use of skepticism is selective and contextual, applicable thus far to limited fields.

Critical thinking on religion

The history of science dramatises the historic opposition of conservative forces to the advance of science. First, the natural sciences had to battle against theological censorship - but the Copernican Revolution in the end prevailed. Similarly for the extensions to biological science - and the difficult time that the Darwinian Revolution still has in backwater countries such as the United States. An analogous battle is going on about whether the "mind," "soul," or "consciousness" can be given a naturalistic explanation. We may further ask, "Can critical thinking, science, and skepticism be applied to religion, economics, politics, and ethics?" My response to this question is, "Why not?" No one can predict antecedent to inquiry whether or not they will be successful. In any case, we should not seek to restrict the methods of science *a priori*.

No doubt the most controversial issue in the skeptical community at present concerns the question of whether we should apply the methods of skeptical critical inquiry to religion. This is an area, which I submit, is sorely in need of critical examination. CSICOP and other skeptical groups have declared that we would not deal with religion *per se*, but rather would concentrate on the paranormal. We would only deal with religion insofar as empirical claims are made that are testable. Until five years ago one perhaps *could* demark paranormal claims from religious claims. Clearly, when we are talking about psychics, we are referring to their alleged psychic powers: ESP, precognition, clairvoyance, etc. Psi phenomena could be readily distinguished from other forms of religious or quasi-religious phenomena. Similarly in examining UFO sightings and UFO abductions, we were dealing with apparently observable evidence, which astronomers and other scientists could examine with care. Today, however, the lines between the paranormal and religious claims are fudged. For example, there is an enormous amount of interest in the question of communicating with the dead. Parapsychologists and paranormalists have been interested in this question for centuries. Today there is renewed interest, where ghostly sightings, haunted houses, mediums, psychics, channellers and spiritualists maintain that they can put us in touch with spirits in another realm. The term *paranormal* refers to that which is allegedly over and beyond the normal range of experience. Parapsychologists like J. B. Rhine who used the term "paranormal" thought that the concepts of the existing experimental science did not apply, and that we needed to develop new *para* explanations. We have denied that

these explanations were *para*—whatever that meant—we said that we could extend scientific inquiry to examine them. I have recently introduced the term *paranatural*, because I think that virtually all supernatural claims can likewise be investigated using the methods of science. If we can investigate D. D. Home allegedly levitating over a street in London, or remote viewing at a distance, then we can also investigate the claim that someone is able to communicate with a dead person and is able to bring back messages. Similarly, we can investigate near-death experiences to see whether or not and to what extent these provide evidence for immortality of the soul and/or the existence of discarnate spirits. Past-life regressions and claims of reincarnation of previous existence are also illustrative of an overlap of the paranormal and the paranatural.

Can religion be investigated scientifically? My answer is that it *has* been investigated scientifically for well over a century, using the tools of psychology, biology, and sociology we can try to unravel religious phenomena in the present. And we can use archaeological, linguistic, and biblical criticism if we are dealing with claims of the past. Accordingly, all question that at least have *some* empirical basis are capable of careful evaluation. Thus the blithe assumption that religious phenomena transcend the ability of humans to investigate them seems to me to be profoundly mistaken.

One reason why people are reluctant to investigate religion is because it is considered dangerous to do so, for it is apt to provoke severe social disapprobation. Religious skepticism all too often has been vigorously punished. One illustration is what happens in Islamic societies where if one denies any of the historical claims of Mohammed, one is accused of being a blasphemer, and severe sanctions, including the death penalty, may result. That is an extreme illustration, but there are similar kinds of social ostracism, excommunication, and other forms of punishment that have occurred in other societies, including Christian, Judaic, Hindu, etc., where dissent is frowned upon. Should the skeptics movement today deal with religious question in the face of this opposition? Few people worry if we attack psychics and

astrologers; they become rabid if we examine the claims of priests and mullahs. We have decided not to do so, except insofar as religious claims have a patently empirical testable content—such as the Shroud of Turin, stigmata, exorcism, claims of miracles, faith healing, etc. But we do not pursue these questions, in my judgment, only because we lack the expertise at present.

Many skeptics go further by agreeing with believers who maintain that religious questions are questions of *faith*, and that we cannot deal with questions of faith. This seems to me to be a dodge, because one can declare that he or she has faith in anything, and thus seek to exclude it from inquiry. Any claim, in principle at least, can be examined and this should not prevent us from investigating it, though I grant it may be dangerous in certain societies, such as the United States or Saudi Arabia today, to do so. I should add that there are many areas of the science of religion that have made great progress, such as the psychology, sociology or history of religious experience, and biblical archaeology and biblical criticism, which provides devastating skeptical critiques of the so called claims of historic revelation. This knowledge is often unknown to the general public.

On social policy

Another question that I wish to raise is whether or not scientific investigation and critical thinking can be applied to questions of social policy. The answer to this is again in the affirmative. One should not identify science simply with what happens in the physical or chemical or biological laboratory. In the last century and a half there have been a sustained efforts to develop psychology, the social and behavioural sciences in order to understand human behaviour; and beyond that to apply this knowledge to human affairs. I think we need to make a distinction between the theoretical sciences, which are concerned with developing hypotheses and theories to causally explain how and why phenomena operate in the way they do, and the applied sciences where we take this knowledge and seek to apply it to concrete cases. Thus we use the theories and principles

of the natural sciences in solving problems in engineering—we build bridges and tunnels or construct buildings and skyscrapers. In medicine the principles of biology and disease are applied to specific cases Doctors seek to diagnose the illness of a patient and provide remedies for the symptoms. Similarly in education, we attempt to use the best scientific knowledge that we have in order to facilitate learning. In politics, we use public-opinion polls, and we examine the consequences and costs of alternative policies. Presumably policies can be changed in the light of critical inquiry. In the past century decision making in economics and the policy sciences have made great advances, and clearly the efforts to apply rational and empirical analyses to social problems have made great strides.



Kevin Christopher , Richard Saunders, Jan Eisler,
Paul Kurtz and James Randi

Skeptical inquiry into ethical questions

One area where a great debate has developed, particularly in modern philosophy, is about ethics and value theory. The question has been raised, "Can we apply science, skeptical inquiry, and critical thinking to ethical questions?" Some skeptics—an extreme case are the emotivists and logical positivists have denied that we can. They maintain that science deals with what *is* the case, but it cannot deal with what *ought* to be the case; it deals with descriptive statements not prescriptive or normative judgments. Here, they say, emotion, passion, and feeling play a predominant role. Many distinguished philosophers have held this position, from David Hume to A.J. Ayer.

This viewpoint, I submit, has overstated the case. Surely we recognise that in the fields of ethics and politics we do not have the same precision as we have in mathematics and the natural sciences. Nonetheless, I submit that reason *does* apply to ethics, that there is a logic of judgments of practice, that there are comparative standards for evaluating courses of action, and that we may say that some things are better or worse than other things. We grade courses of action all the time, and we use the best intelligence we can to do so by giving "good reasons." Physicians, psychiatrists, educators are constantly involved in decision-making processes and often provide reasoned recommendations. The purpose of education in one sense is to enable people to analyse their choices and decisions and to make reflective ones.

John Dewey, whom many consider to be the leading American philosopher of the twentieth century, made a distinction between *prizing*, where we say that something is good, bad, right, or wrong, or has value to us, based largely on emotion, and *appraisal* or *apprising*, where our judgments are based upon a cognitive reflective investigation and where we seek to judge our choices by reference to a means-end continuum, by examining the conditions under which they emerge, and by testing them in terms of their consequences.³ In any case, there is a long tradition in Western civilisation from Socrates and Aristotle down to Kant and Dewey, which maintains that reason and cognition is applicable to ethics. So I suggest that it is indeed possible to apply the methods of critical thinking to ethics.

The best illustration of this today is the field of medical ethics, a new field perhaps thirty years old, in which physicians, philosophers, health practitioners, and ordinary people engage in a process of evaluation. Reflective inquiry is applied in order to evaluate various courses of treatment. Here the principle of the "informed consent" of a patient is relevant to determining his course of treatment and has emerged as a basic value. The movement for euthanasia and assisted suicide grew out of this reflective process.

One can ask, "Are there limits beyond which science, skeptical inquiry, and critical thinking cannot go?" My response again is that this is an open question and following the admonitions of Charles Peirce we should not seek to block inquiry by saying that certain things

cannot be known beforehand. What I am defending here is methodological naturalism; and this is a normative recommendation. It is based on the recognition that the methods of science and critical thinking have had powerful uses in field after field. And that in comparison with other methods, such as faith, intuition, custom, emotion, authority, or tradition—which are widely used by people to support their beliefs and values—it has made enormous strides. Indeed, the entire process of reflective inquiry, education, and the progress of science, suggests that it is possible to reform our beliefs and to modify our values in the light of critical thinking. This is an ideal which we wish to use, and the test is pragmatic; namely, we cannot say *a priori* that this, that, or something else is immune to critical thinking. Thus, we should not prevent or preclude inquiry into the sacred areas of society. The fairest method is an open method of inquiry, in which we seek constantly to apply human ingenuity to understanding nature, ourselves, and solving human problems.

Opposition to critical inquiry

Today the attacks on critical thinking and science come from many sources. First are the paranormalists who say that certain areas are beyond normal scientific inquiry and that they transcend the ability of human beings to understand them. There is allegedly a paranormal-spiritual realm over and beyond the world of nature. Those of us within the skeptical movement know that this is a questionable extrapolation. We know that claims of the paranormal can, and indeed have been, examined by impartial observers, and that on the basis of inquiry we can end up with naturalistic explanations for abduction, regression, mediumship, etc. In many cases these claims are based upon deception and self-deception—as in the case with channellers and mediums such as John Edwards, Sylvia Browne, and James Van Praagh. Surely we cannot say that anomalous phenomena are a "mystery" and for that they are due to an "occult" causes or "miracles." To say this is to confess our ignorance of the causes, but, we say, we wish to keep the doors open to natural explanations.

Second, there are those who argue that supernatu-



Paul Kurtz presents Joe Nickell with his Distinguished Skeptic Award

ral areas are beyond the range of human intelligence and understanding. I submit that *paranatural* claims are capable of naturalistic inquiry, and that wherever possible we should submit these claims to careful critical investigation, and not shy away from free inquiry. We have illustrated this in the areas of faith healing, which we deny needs any miraculous interpretation. Similarly for the Shroud of Turin, weeping icons, etc

There is a third area, however, today in which there is a good deal of skepticism about the validity of science especially in the universities. I am here referring to "postmodernism," which offers a devastating critique of the methods of science. Modernism and science go hand in hand. In rejecting modernism they reject science. For at least 500 years the methods of science, reason, and critical thinking have had a powerful role impact on the planet. It has led to an expansion of our knowledge of the universe and the biosphere and to the great technological applications that have benefited humankind. Yet these are often denigrated by postmodernists.

I wish to deal briefly with some of these criticisms.

(a) One form of this extreme skepticism about the objectivity of science is by philosopher of science Paul Feyerabend and others who have held that there is no method of science, that science does not provide us with objective knowledge, that science is one mythology among others, and that the scientific narrative is no better than any other kind of narrative. Influenced by German philosopher Martin Heidegger, French philosophers, such as Jacques Derrida and Jean-Francois Lyotard, have taken up the critique of science. Postmodernism seems to me to be profoundly mistaken, because we *do* have reliable knowledge; and on the basis of this knowledge we have been able to explain phenomena, to make predictions, and to create technologies that have had an impact on global civilisation. I agree that there is no one method of inquiry; but there *are* surely strategies of inquiry. I reject the notion that science is subjective or relativistic and insist that its hypotheses and theories are capable of independent verification, and that there are some standards for testing and warranting its principles. Clearly, scientific knowledge is not absolute; it is changing and fallible; it can be modified in the light of new evidence and more comprehensive theories. But to say this does not imply that we have no knowledge in the sciences. At one point Feyerabend said that astrology was as true as astronomy. Martin Gardner replied, he would believe this only if astrologers could make predictions on the basis of their horoscopes, and if witches could fly on their broomsticks. He prefers the observed data and confirmed theories of astronomy to those of astrology.

(b) Another form of the postmodernist critique is multiculturalism. I recently lectured at Iowa State University. I was surprised when an anthropologist in the audience got up and attacked my defence of scientific inquiry. He said that primitive cultures were as true in their pictures of the universe as scientific culture. He indicted modern science because it expressed the dogmas and biases of Anglo-Saxon white males. It left out the insights of African culture and the feminist outlook; therefore, he insisted, we have to be open to "alternative perspectives". My response was that although it is

the case that the culture context in which explanations emerge are relevant to understanding them, that gender and ethnicity undoubtedly colour our interpretations, and that we need to appreciate the pluralistic insights of many cultures (regretfully, Western colonialists often rejected the customs of the lands that they occupied), nonetheless, science is an effort to provide objective grounds for claims, and this transcends the limits of culture. Indeed, science is universal; it is an expression of world civilisation. Whether we come from India or China, Japan or England, the United States or Australia, Latin America or Africa, we are still dealing with a common world and the methods of scientific inquiry are effective everywhere. Information technology, antibiotics, the principles of mechanics and mathematics, apply to all sectors of the planetary society—it is not simply a Western male-dominated outlook. The proof of the pudding is in its eating.

Conclusion

In conclusion, to say that we ought to extend the methods of critical thinking is to make a normative proposal. We are suggesting that the methods of inquiry that have been successful in science and technology and have transformed the globe, ought to be applied elsewhere. We need to use them—as we have—to investigate paranormal claims. But they can and indeed should be used in religion, economics, politics, the social sciences, and in ordinary life as well.

Given the division of labor, I am not suggesting that we transform the present skeptical movement—which has focused on paranormal and fringe science—so that it deals with all questions; but mere suggesting that the methods that we have used so effectively in our own area of expertise, should be used by others in the various areas of human interest. Again I am not talking about negative or totalistic skepticism, but the selective and constructive application of skeptical inquiry into a wide range of human interests as a source of reliable knowledge and practical wisdom.

Our motto is that we wish to apply reason, science, and free inquiry to every field of human interest. I can find no overriding reason why we can not.

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Please Renew Early



SCEPTICISM IMPROVES YOUR HEALTH

Les Irwig

Summary of a talk given at the World Skeptics Convention.

What has not been examined impartially has not been well examined. Scepticism is therefore the first step towards truth.

Denis Diderot, *Pensee Philosophique*

There are many examples of how a lack of scepticism has led us astray in thinking about health. Below are some examples to guide your thinking about whether to believe a claim that some treatment, food or nutritional supplement will improve your health.

Be Sceptical about research

Is the research on the right species?

Early studies on new drugs often are done on experimental animals or in test tubes. Although these studies may be important for basic research, they are still a long way off from showing that the treatment works on humans. While breakthroughs in the laboratory are exciting to laboratory scientists, many fail to carry through their initial promise of being useful to people.

Is the research of high quality?

Even when research is done on people, *it's not always of high quality*. Some research is more appropriate than other research. For example, if we are interested in whether a new treatment really works, what we need to know is that people who use it are likely to recover more quickly than those who use the old treatment. This is best achieved by a randomised controlled trial (RCT), in which people are randomised to the old or the new drug. RCTs ensure that the people who get the old and new drugs are similar at the start of the trial. This is the research design that avoids the possibility that those who took the new drug were less ill (or more ill) to start with.

Be Sceptical about what outcomes are measured

Do the outcomes measured in the studies matter to you?

After a heart attack, some people develop disturbances in heart rhythm. Those who do are at four times more likely to die than those who do not. Some years ago practitioners looked at earlier randomised trials which had shown that there were some drugs capable of preventing these rhythm disturbances. For many years these anti-arrhythmia drugs were prescribed, the assumption being that preventing

arrhythmias after heart attacks would reduce the number of deaths. However, a vital piece of information was missing: whether or not treating with anti-arrhythmia drugs followed through to improved survival. In fact, when this was eventually tested in randomised trials, it was found that survival was shorter in those who were allocated to the drug. *Thousands of people had died unnecessarily because these trials had not been done earlier.* The lesson is: we need randomised trials looking at outcomes that matter to people – whether they live longer and whether quality of life is improved.

Be Sceptical about benefits and harms

Were all benefits and harms considered?

We have a tendency to focus far more on whether new treatments and tests achieve their intended purpose and not nearly enough on what their potential side effects are. Researchers do a better job of measuring hoped-for benefits than of measuring the possible adverse effects. Yet clearly, if we are to make a wise decision about whether a particular intervention is useful for an individual, we need to know both.

Be Sceptical about advice on what's best for you

So, how can you ensure that your decisions are the best for you?

Well, it's a good idea to start with some healthy scepticism. Decisions are based on three factors:

Clinical information; the interpretation of which requires your practitioner to identify the problem and make a diagnosis.

Research in the literature; which explores the benefits and harms of different treatment options, ideally using randomised trials. This information should be shared between you and your practitioner. To help this, there are an ever-increasing number of evidence-based guidelines and summaries of research suitable for consumers of health care

Personal preferences. At the end of the day, it will be your choice about whether the benefits of a particular intervention outweigh its harms.

When making any decision about your health, you should use the following 5-question approach:

1. What will happen if I do nothing? For some conditions, it might be worth waiting to see if they resolve on their own



Les Irwig

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NUTRITION: WHO CAN YOU BELIEVE?

Rosemary Stanton

The more you read about human nutrition, the easier it is to join the ranks of the sceptics. There are three levels where I think we would do well to remain sceptical:

1. Blatantly silly products and claims
2. More subtle, almost reasonable, claims about products and supplements
3. The subtle public relations approach applied to scientific research

Blatantly stupid products and claims

If you have a few hours of spare time and you watch late night commercial TV or do an Internet search on health or slimming products, there are hundreds of examples of products making outrageous claims. Some are also sold through persuasive multi-level marketing schemes or as they prefer to be known, network marketing. Let's start with a few of the many hundreds of slimming scams.

Cellulite

Cellulite cures are immensely popular. There's not a shred of evidence they work and no theoretical reason why they should, but they are big sellers. Two years ago, a product called Cellasene which was developed by a shrewd businessman in Italy and imported by a company called Bionix, hit Australian pharmacies and health food shops.

The first 50,000 boxes - at \$59/box - sold in a matter of hours and television news showed pictures of women knocking each other over in their quest to get some of the scarce supplies. The first few hours of sales brought \$2.95 million. The next eagerly awaited shipment of 40,000 boxes brought another \$2.36 million. The instructions stated that you needed to take the pills for two months to see any results, and this gave the manufacturers time to get to the bank before the failure of the products was apparent.

Other products soon piggy-backed on the idea. Bioglan gave us Zellulean, Select Foods offered Cetelaplus, Natural Nutrition sold Cellufree. A couple of products - Cellutone and Inatone - cashed in by offering virtually the same collection of ingredients for

only \$39.95 a box. They all sold well while more Cellasene was being shipped to Australia. One product even claimed that two of their products - Grapeseed Plus and Evening primrose oil with added omega 3s - would work just as well.

There was no proof that any of the products worked at all, but that wasn't needed. Just the thought they might work was enough for women to give them a try. Most cellulite pills and lotions have now been added to the weight loss offerings from major health food and multilevel marketing products. The next big sales will probably have to wait until there is a new market that doesn't remember that the last lot were a rip-off.

Dr Sandra Cabot also writes about cellulite. Her web site says the essential fatty acids found in "good fat foods" will keep your fat cells soft and flexible and your cell membranes healthy, to enhance energy flow inside and across them, and keep the metabolic rate inside the fat cells at a high level. This will prevent the fat cells from becoming swollen and hard with excessive fats, keeping them soft, flexible and of normal size so cellulite cannot develop.

The cellulite 'cures' show that women are desperate to do something about the "toxic wastes trapped beneath their skin" as the fat on thighs and bottom is called. The market was already set by lots of expensive creams, scrubs and even loofahs that had been claiming they could remove 'unsightly' dimpling, orange peel or hail damage fat. Beauty editors had promoted the idea that such fat, which almost all women have as gravity, thin skin and lack of muscle tone takes their toll, was somehow evil and undesirable. Renoir and other great artists clearly didn't agree, but regarded it correctly - without the benefit of science- as a sign of female fertility. From the health viewpoint, the most problematic fat on the body is an excess of upper body fat. Thigh fat is stable and safe.

In the United States, the Federal Trade Commission has now filed a consumer protection lawsuit against Rexall Sundown Inc, a Florida company that imports and markets Cellasene there. The suit seeks class action status.

Clay & plastic wraps

If you have been disappointed by the failure of cellulite pills, another blatantly stupid scam has taken its place. Women are now being urged to smear themselves in clay and then be wrapped in bandages like



Rosemary Stanton

a mummy. This treatment is supposed to remove the 'toxins' that supposedly cause cellulite.

On their web site, Slender wrap, an American company with distributors in many countries, including Australia, asks:

Need some help with your "double chin?" Try our Chin Contouring Cream, and wear our "compression wrap" overnight. It's the liposuction alternative. It's easy, affordable, and private. Results begin to appear in just 4 to 5 weeks. Takes 1 minute a day.

Slender wrap also features their 'signature product'—the Body Wrap Kit™ which provides Sea Clay in many sizes, for your convenience. Order the size you need, depending on how many wraps you want to do. You can also get a sauna sweat suit to use with your body wrap, or use alone "to melt away some extra pounds".

You may or may not be comforted by their credentials, which state - "We subscribe to the Code of Ethics of The American Body Wrap Association".

There are also people who will wrap women in a type of plastic Gladwrap. Some women apparently pre-paid \$2,000 to \$16,000 each to the Swiss Slimming and Health Institute which operated at the Skygardens Centre in Pitt Street, Sydney. Fortunately, the Australian Competition and Consumer Commission took action against this company, but alas, its American managing director, Gerhard Hassler, had already taken off overseas with his girlfriend. The liquidator was at least able to auction off a carton of Special Wellness tea, some skin care exfoliating cream, intensive firming gel and nine cartons of Golightly Sugar-free Candy.

Slimming soap

Much less expensive - only \$40 - is Aqili Seaweed Soap - "The Amazing Slim Soap That Works After 5 Days!!" Made from "the elixirs of undersea plants, including rare seaweeds, the soap provides defatting agents which penetrate to fat cells". It also contains

...many kinds of trace elements, vitamins and minerals which reduce the accumulation of serous fluid and astringe the skin. Given some time, you will be surprised to find that your body has become slender and your skin more tender. It makes your weight control simple, convenient, and relaxed.... allowing rapid fat loss reduction.

You may also be pleased to know it will also:

...enhance your skin texture, add richness to your hair, harden your nails and it has no known side effects.

They could have added - and no evidence of efficacy.

Lose weight while you sleep

Or you can lose weight while you sleep with several products, including Protecol, a dietary supplement that requires no special diet and no exercise. Like most of these products, it is endorsed - by Ms TW from the Gold Coast, Mr RH from Nambour and several other equally well-known Queensland characters.

Like most of these products, this supplement contains a range of ingredients that might sound authentic - *collagen hydrolysate*, *L carnitine*, *sodium pyruvate*, *chromium picolinate* and others. In fact, contrary to the claims made, there is no evidence that any of these substances will cause weight loss. The product was developed by

Dr Andrew George Lavrent, a Doctor of Engineering from Berlin. The fine print about Protecol says it must be taken on an empty stomach before bed. In other words, the protocol means you will need to skip dinner. No real magic there and they further protect themselves by stating you must take the product for at least three months for it to be effective. By that time, you may well be sick of skipping dinner.

Magic water

Before we leave these blatantly silly schemes, perhaps the strangest is for Infinity Ultima Thule Forms of Yellow Remember. (Yellow relates to the vibration of the earth realm.)*

Located in Hunters Hill, Brisbane, Byron Bay and Madison USA, this company sells different 'empowered' waters for \$US40, vials, or any one of 150 different pendants for \$125 - \$500 that you can tap on a glass of water to initiate energy. They also offer a wand (which might come in handy for a bit of magic), and this will set you back another \$120, or you can get a pair of wands for \$200. There are testimonials from a range of people, including alternative health practitioners and one medical doctor who unfortunately does not include any contact details.

According to the many brochures, a book and a website (www.infinity-formsofyellow.com):

this is an innovation so great that the mind shatters at its mere contemplation. Technology so vast that standing in awe is the only true response. An Age of Miracles Is Here.

There is also a claim that:

the products of Infinity are not the essentially empty promises of those that would beguile us with 'mysterious substances' and 'odd Practices.... Infinity delivers miracles. Initiate the 'touch of the hand of God' with the Divine instruments of Infinity.

There is also a cop-out if it doesn't work.

How anyone responds to that 'touch' is an unfathomable mystery and a matter of God's business. The limitation is not in the product, the limitation is in the reception. The products of Infinity are all perfect and would have a perfect result if there was perfect receptivity.

So if they don't work, don't blame us. You just weren't receptive enough.

Ultima Thule, by the way,

...is that place beyond which you cannot go.... It is a Universe 5,000 billion light years across, still growing as the need may arise, perched on the event horizon of a black hole that is to be found in the Heart of mankind on the right side, coincident with the pacemaker of the Heart. Ultima Thule is a way of Healing, by lifting an individual beyond the realm of the physics of their disease. Ultimately Ultima Thule may replace the entire cosmos, thus lifting everything to a New Age of Enlightenment.

More subtle areas where scepticism is needed

There is a widespread belief fostered by those selling supplements that we can no longer rely on the food supply for nutrients. It is true that more people are suffering from obesity and diabetes than ever before, and

some cancers are increasing, but these are not caused by a lack of specific nutrients, although all may be related to poor choice of foods and lack of physical activity. The way to fix such problems is to choose foods wisely and move more. Supplements won't help.

If you choose a diet of jelly beans, potato chips, Coca Cola and fast foods, your diet will be inadequate in many ways. But it is not correct to claim today's fruits and vegetables no longer provide minerals and vitamins. Nor is it true that the stresses and strains of modern living mean we all need to take supplements.

Vitamin and mineral supplements are useful at times, for example, when someone is unable to consume normal foods because of genuine allergies, and in those recovering from starvation, alcoholism or the physical stress of surgery or severe injury. But analyses from university, government and private laboratories in many countries shows that fresh foods still contain nutrients. The variety of fresh foods now available actually makes it easier to choose a diet which provides all the body's nutritional needs.

But that won't sell supplements, so we have statements such as this:

Did anyone in your family ever develop a debilitating illness, or die with a recognised illness? If so, why risk waiting until you get to that stage of your own life to take action, when you could take steps to protect your health now?" (Nutraceutical *Health Bulletin* No 99-4cc).

In this bulletin, the solution was Tahitian noni juice, but many network marketers use similar arguments to sell vitamins, minerals, powdered prawn shells, brindleberry extract and various herbal concoctions.

There are also quizzes, such as this one from a NSW Doctor of Medicine who recommends and sells a range of supplements. Let's see how you rate. She asks if you suffer from:

- hormonal imbalances and deficiencies?
- chronic fatigue?
- mental fatigue?
- an overloaded immune system?
- poorly functioning cells?
- mood disorders?
- stress?
- menopausal problems?
- adrenal gland exhaustion?
- deficiencies of nutrients vital to the immune system?
- fibromyalgia?
- rapid ageing?
- or-are you simply slowing down and don't know why?

At least the questions asking if you have foggy brain, cravings for sweet foods, body odour, or an intolerance to alcohol seem to have been removed from the web site quiz.

Such ways to determine if you need a supplement would probably catch almost everyone, especially after a late night, and you are then a candidate for whatever the salesperson is offering.

Most of the spruiking for supplements of all kinds is sprinkled with lots of facts, making it difficult for the layperson to see where the facts stop and the fiction starts. Some of the pseudoscience offered sounds con-

vincing. For example, distributors of Mannatech gyconutritionals talk about 'cell-to-cell communication', and imply that it can't occur without their products. They discuss eight known monosaccharides and proceed to claim that only two of them - glucose and galactose - are included in nutrition texts because the other six are not overly abundant in today's typical modern diet. In fact, the monosaccharides Mannatech claim as essential components of their expensive supplements are produced in the body during the normal metabolism of carbohydrates and its conversion to a source of energy. There is current research into the value of certain oligosaccharides, especially those found in breast milk, but there is currently no known advantage of supplying monosaccharides ready-made in supplements.

The vast amount of printed and website material that accompanies these supplements sounds convincing and the founder of the laboratories that makes Mannatech products has a PhD in immunology and microbiology (although not nutrition). I have no doubt he believes in his supplements, but none have been subjected to properly controlled clinical trials published in regular peer-reviewed journals. Some are published in journals put together by like-minded people where studies have not use a placebo control or been double blind. The sales material may contain a formidable list of references, but if you examine these, most relate to statements of the type 'the incidence of diabetes is increasing in Australia' or even a general review of oligosaccharides. They do not relate to the use of the supplement in question.

I noticed that at least one of the authorities quoted for Mannatech products claims to be a member of the American Association of Nutritional Consultants. So was my late old English sheepdog, for whom I filled out the necessary name and address and paid the required fee some years ago.

For some products, sales people have been convinced by someone higher up the multi-level marketing chain that studies have been done. For example, capsules containing Juice Plus freeze-dried fruit and vegetable extracts were promoted in Australia with quotes from the *American Medical Review*, which the product distributors no doubt believed was a valid source of information. The 'studies' quoted to the sales people gave no details of the subjects, the methodology, the actual results or the name(s) of the researchers. It may sound authentic, but there is no such real journal. The same distributors were also given proof in the form of results of a pilot study on 15 people, with one of the researchers being a principal of the company selling the supplement. It was a particularly poor study with no control group, no blinding of researchers or participants and proved nothing except that the researchers did not seem to realise they would need to examine the participants' diets. Had any of them eaten a meal containing tomato paste or carrots, the results claimed would have been invalid. Those who publish material in the journal in question-*Current Therapeutics Research* - also pay a publication fee per page printed.

The JuicePlus product contains added vitamins, and as such may have some value, although regular vitamins cost only a fraction of the JuicePlus product. There is no evidence the supplement has enough fruits and vegetables to provide an alternative to the real thing.

Nor do I know why we need an alternative to fruits and vegetables. Part of their benefit is their bulk, which is filling and can displace junk foods. No pill can ever hope to fulfil this role.

To catch parents, JuicePlus also offers gummy bears, also called phyto bears - sweets that contains fruit and vegetable extracts. Their main ingredient is glucose syrup. The second ingredient is sugar. They are, as you might guess, expensive. But the sellers line is "Isn't your child's health worth it?" It can sound convincing to a parent whose child will undoubtedly prefer a phyto bear to a Brussels sprout.

There are also many modern slimming diets that sound convincing, especially when they tell you your excess weight is the fault of your liver or your metabolism or even your blood type. The Liver Cleansing Diet takes the blame away from those who have over-eaten and under-exercised and puts it on the liver.

The Eat Right 4 Your Type Diet says it's all due to your blood group and tries to convince readers they should abstain from certain foods for this reason. Its author Peter D'Adamo is a naturopathic physician who developed the theory with his brother James after 40 years of observation and research - none of which appears in any recognised scientific publications.

If you have blood group O, you are a descendant of the original hunters and gatherers and you should eat meat and foods rich in protein and fat. Blood group A only developed with the development of agriculture some 10,000 years ago, so they can add grains and carbohydrate foods. There is, of course, no proof for these crazy beliefs, but they 'work' because whatever your blood group, your diet is restricted in some way. You therefore eat less and lose weight.

A similar thing happens with the Dr Atkins Diet where you are allowed to eat unlimited amounts of fat, as long as you avoid carbohydrates. I'm not sure how you eat all the permitted butter and cream when everything you would normally put under such ingredients is prohibited - no bread, potatoes, desserts - not even any fruit is allowed. Because Atkins is a doctor of medicine, many people think he must be right. Atkins has also hopped onto the supplement bandwagon, which will probably bring in some cash which he might need to defend himself in the lawsuits which Americans will almost certainly bring against him when their health is damaged by his unbalanced recommendations.

The latest gimmick for dieters and everyone else are bars. You can get your breakfast in a bar, your snacks in a bar, your perfect Zone balanced diet in a bar (to match the Zone diet), Herbalife in a bar and Twinlab ironman bars in case you fancy yourself as an athlete. The ingredients in these bars don't cost much - they're largely stuck together with sugar syrup, but they're very profitable and will soon become as ubiquitous a fashion accessory as the water bottle.

The subtle public relations approach invades science

Scientific research was once funded by government and scientists could publish their results without fear or favour. Increasingly, big business and its subtle PR machine is taking over laboratories and scientists

throughout the world. This makes many sceptics uncomfortable - with good reason it seems.

Academic-industry ties are common, and there is evidence that financial considerations bias the research record. The *Journal of the American Medical Association* has just published results of a study into possible conflicts of interest at 89 out of 100 of the major biomedical research institutions in the United States. Policies varied widely with 55% of policies requiring disclosures from all faculty members and the remaining 45% requiring them only from principal investigators. Most policies on conflict of interest lacked specificity about the kinds of relationships with industry that are permitted¹.

The same issue of *JAMA* also carried results of an assessment of personal financial relationships between researchers and industry from the University of California between 1980 and 1999². By 1999,

- 7.6% of faculty investigators reported personal financial ties with sponsors of their research
- 34% of disclosed relationships involved paid speaking engagements (range of payment \$250 - \$20,000/year)
- 33% involved consulting agreements between researcher and sponsor (range, <\$1000 - \$120,000 per year)
- 32% involved the investigator holding a position on a scientific advisory board or board of directors
- 14% involved equity ownership
- 12% involved multiple relationships.

When researchers are involved in financial relationships with their research sponsors, there may be no problems, but any sceptic worth his or her salt would consider the issue.

Let's look at two examples. The first is genetically modified foods. I don't know if they are good or bad, but I would be surprised if they are *all* good or all bad. Like most things, there are probably some that are truly useful to consumers and farmers and others that may be profitable for the companies that produce them, but create further inequities in world food supplies and some environmental costs. It is clear that GM crops have been introduced with subterfuge and lies, and with lots of company-sponsored tests - but not necessarily the right ones. Some well-meaning scientists may think of GM foods as a way to solve world food problems - as well they could. A sceptic might think a large company that exists to make profits for its shareholders would be more likely to sell rice with added beta carotene or iron to a company that will put it into a high-priced snack bar complete with health claims for consumers who can afford to pay high prices. The malnourished villager in East Timor who can't afford to pay is unlikely to benefit.

The huge agribusinesses that stand to make enormous profits from GM foods spend millions of dollars on public relations campaigns when a few tests that would set many people's minds at rest would cost a fraction of that. I am sceptical about why they keep coming back to the 1992 ruling from the FDA - whose commissioners incidentally have a 'revolving door

policy' with Monsanto executives - that said GM foods did not need toxicological testing because they were substantially equivalent to other foods. They may well be so in some cases, which makes me wonder why the companies stifle normal scientific debate as well as belittling any scientists who dare debate the issue from a different viewpoint. Some scientists who would prefer to take their research more slowly and who genuinely want to produce GM crops that would be truly useful for third world farmers are being hustled to produce particular crops that are profitable for animal feed in wealthy countries (where the money is). The rush is so the company funding their research can sign a contract with farmers for exclusive purchase of seeds and herbicides before their competitors.

Another example where we now need to remain sceptical concerns scientific papers on various foods or nutritional ingredients which are generated and funded by companies who stand to make a profit out of the results. The research may yield good results that favour the product involved. If so, the scientists will be expected (and often paid) to do the full PR campaign to plug the products. If their results are negative, they will not be published.

Some scientists will publish their papers in journals whose policy is to disclose financial arrangements. But when these same papers are quoted by other scientists or industry groups, the original financial disclosure is no longer mentioned. This occurs with reports funded by the sugar, artificial sweetener, dairy, edible oils and some cereal companies. A minimum 30% of CSIRO's funding comes from industry and 'he who pays the piper calls the tune'.

In some cases, research is replaced by a round table conference with the PR company present, seeking to generate a 'review paper' to use in a media campaign for a particular product. This happened recently in Australia with plant-based food guidelines for cancer followed by a review of colon cancer and red meat. No prizes for guessing who organised the 'review'.

In many cases, such research and the publicity that results may be genuinely useful. But as a sceptic, I want the funder identified.

I also want to know the affiliations of various organisations with valid sounding names. For example, it may help to know that the National Nutritional Foods Association represents the health food industry; the Associates for Research Into the Science of Enjoyment (ARISE) was set up by the tobacco industry; and the Council for Responsible Nutrition is a group of supplement manufacturers. Such fronts are not restricted to nutrition as we see in the Forest Protection Society, who are likely to cut down forests rather than save them or Clean Food Australia, which was set up by the Agricultural and Veterinary Chemicals Association.

There are many levels on which our sceptical antennae should be extended. I hope I have given you cause for thought - and some healthy scepticism.

Notes

1. Cho MK, Shohara R, Schissel A, Rennie D. Policies on Faculty Conflicts of Interest at US Universities. *JAMA*. 2000;284:2203-2208

2. Boyd EA, Bero, LA. Assessing Faculty Financial Relationships With Industry A Case Study. *JAMA*. 2000;284:2209-2214.

* Editor's Note:

Some years ago Australian Skeptics was invited by *Today Tonight* (Ch7), to test claims made for this "magic" water, specifically that its use caused a rise in skin temperature. Readers may recall watching the unedifying sight of several prominent Skeptics, including the Editor of this journal, sitting stripped to the waist while ingesting "empowered" water, under the scrutiny of an infra red camera. These claims made by the company were supported by a (then) associate professor at Southern Cross University, whose field was sports physiology, and who had a PhD in a relevant subject.

Our skeptical antennae became fully aroused when we learned that the water would be "empowered" by placing a container of tap water near a computer terminal which was then connected to the Ultima Thule web site. We didn't believe that this was meant by the phrase "the power of the web".

The trial was conducted double blind, and showed that no one's skin temperature varied significantly after taking treated or untreated water. This appeared not to concern either the company representative, nor the associate professor, but it was a simple test of an extraordinary claim, and the result certainly did not surprise any of the Skeptics. We are somewhat nonplussed that such claims continue to be made and believed, when they have been so thoroughly exposed as arrant nonsense.



...skeptism improves your health from p 22

2. What are the intervention options?
3. What are the benefits and harms of the intervention options?
4. How do the benefits and the harms weigh up for me?
5. Do I have sufficient information to make a decision? If the answer is yes, that is the end of the process. If no, you may need more information of any of these 5 questions or a deeper search of the quality of the information on which they are based, using some of the sceptical rules at the start of this summary.

Thinking straight about the world is a precious and difficult process that must be carefully nurtured.

-Thomas Gilovich, *How We Know What Isn't So*

Based on the book *Smart Health Choices - how to make informed health decisions* Judy Irwig, Les Irwig and Melissa Sweet. Published by Allen and Unwin, October 1999 ISBN 1865081469. Available at all good bookstores.

Visit Smart Health Choices website at

<http://www.health.usyd.edu.au/smarthealthchoices/>



AWARDS AT CONVENTION

A Convention would not be complete without the announcement of Australian Skeptics two prominent awards.

Australian Skeptics awards

First, there was the **Australian Skeptic of the Year**, given annually to the person whose activities had done the most to promote the objectives of the Skeptics movement of critical thinking and Skeptical analysis of dubious claims. This year we had the great good fortune of having our winner of the *Australian Skeptic of the Year for 2000* as a speaker at our Convention. Professor John M Dwyer AO is Professor of Medicine at the University of NSW and Clinical Director for both Medicine and Oncology at Prince of Wales Hospital. Apart from being a leader in his field of Immunology, John Dwyer has been unrelenting in his public exposure of pseudo-medical therapies and devices and in demanding that regulatory authorities take action to protect the health of the consumers of Australia. He joins a distinguished list of previous winners.



Prof John Dwyer accepts his award from Australian Skeptics President, Dr Richard Gordon.

The Australian Skeptics *Bent Spoon Award* is presented annually to the “perpetrator of the most preposterous piece of paranormal piffle”. A number of deserving entries were nominated, including Ronnie Burns, producer of a particularly idiotic TV pseudo-documentary, *Prophecies and Predictions* (see story in “Around the

Traps”) but the judges had no hesitation in awarding the honour this year to the Brisbane-based woman who operates under the name Jasmuheen. Her promotion of the dangerous cult of “breatharianism” - the notion that people do not need food, but can live on air and light. While this idea might seem patently ludicrous, it has nevertheless led to the deaths of a number of people around the world who have been foolish enough to follow its prescriptions. There has rarely been a more worthy recipient.

CSICOP awards

As this was a World Convention, our co-sponsors, CSICOP, also presented a number of its own annual awards.

The CSICOP *Education and Science Award* for distinguished contributions in these fields, went to Dr Richard Wiseman parapsychology investigator from the University of Hertfordshire, UK. Dr Wiseman was a speaker at the World Convention.



Dr Wiseman receives his award from CSICOP Chairman, Prof Paul Kurtz

The CSICOP *In Praise of Reason Award* went to Professor Lin Zixin of the China Institute for Popularisation of Science and Technology. Prof Lin was expected at the World Convention, however he experienced difficulties in obtaining a visa and the award was accepted on his behalf by Prof Shen Zhenyu..

A CSICOP *Distinguished Skeptic Award* was presented to Dr Joe Nickell, Senior Research Fellow and Chief Investigator of CSICOP. Dr Nickell spoke at the World Convention

A CSICOP *Distinguished Skeptic Award* was presented to Barry Williams, Executive Officer of Australian Skeptics and Editor of *the Skeptic*, “In recognition of his outstanding contribution in defence of science and critical thinking”.

Congratulations go to all the award winners

HAGIOGRAPHY, EARNED

Richard Lead

Well, we threw a Convention, and people came.

Few events in recent memory have yielded the pleasure and pride I felt chairing the Friday sessions of the Third International Convention of Skeptics. To share a podium with Skeptics' legends Paul Kurtz, Joe Nickel, Bob Steiner, and the living whirlwind James Randi is not something quickly forgotten. Closer to my world, rubbing shoulders with Alan Cameron, the Chairman of the Australian Securities and Investments Commission, and Nick Cowdery QC, the NSW Director of Public Prosecutions, gave me a particular professional pleasure. It is a measure of the prestige held by the Australian Skeptics that people in such positions took time from their busy schedules to address our Convention. The Australian Skeptics clearly enjoys an influence far greater than our modest numbers might suggest.

Which leads me into the main purpose of this piece. Midway through the Friday afternoon session, Barry Williams took to the stage, to be immediately greeted by 400 pairs of lungs spontaneously singing Happy Birthday. By lucky coincidence it was indeed our Scorpio's birthday, otherwise 400 delegates would have felt like right proper Charlies. Professor Paul Kurtz, the founder and head honcho of CSICOP (the Committee for the Scientific Investigation of Claims of the Paranormal), presented Barry with CSICOP's Distinguished Skeptic Award, "In recognition of his outstanding contribution in defense of science and critical thinking". This Award is arguably the most coveted prize in the world of skepticism, and is not given lightly. Previous recipients include Stephen Jay Gould, Richard Dawkins, and Nobel Laureates (for Physics) Leon Lederman and Murray Gell-Mann. Our very own Noble Lorikeet is in distinguished company. Barry was visibly moved by this award, and by the thundering ovation of the delegates. I won't say a tear glistened his cheek, but he was truly speechless, an event all 500 of Australia's most accurate and respected psychics failed to forecast. (Several committee members were heard to suggest that this speechlessness was clearly a paranormal event of such magnitude as to warrant the awarding of James Randi's Million Dollar Challenge.)

Few would argue this award to Barry was unwar-

ranted. Barry has been the bearded face of the Australian Skeptics since most of us were in nappies, and until 1997 did so on an unpaid, part-time basis. How he found the energy, after a full day's work, to return the phone messages, answer the correspondence, edit this journal, attend the media interviews, and all the rest of it, is just amazing. It was clearly a labour of love, and the Australian Skeptics owe Barry an enormous debt of gratitude.



Barry Williams receives his Distinguished Skeptic Award from Prof Paul Kurtz

At the post-convention Sunday night celebration dinner at the Intercontinental Hotel, kindly hosted by our founder and patron Dick Smith, Professor Paul Kurtz marvelled that he had just spent three days at a Skeptics' convention. He just could not believe the laughter. The contrast between our Convention, and the Second World Convention in Heidelberg in 1998 is stark indeed. At Heidelberg, we learned. At Sydney, we learned and laughed.

Regular readers of *The Skeptic* will identify Barry as the prime source of the unique humour, which so distinguishes the Australian Skeptics from international sceptical groups.

Far too often, such praise forms part of an obituary.

Barry, my old friend, let me offer to you my most sincere congratulations on this coveted CSICOP award. You earned it. Sir Jim R Wallaby is making a brave face, but I know he is green with envy.

Barry has been invited to address the Fourth World Convention of Skeptics in New York in the northern autumn 2001. This Convention will commemorate the 25th anniversary of the founding of CSICOP. Now, gentle readers – are we to send this Williams wanker into the lair of the Usanians without bodyguards? The wonderful people at Qantas have offered the Australian Skeptics a nice group discount if we have a minimum of ten travellers and promise not to trash their Boeing. Let's get a group of us together and see whether the Yanks can throw a convention as well as we can. Heck, depending on the theme of their Convention, for you scientists and medicos it will probably rank as a tax deductible seminar, so let's go.

Globe-trotting Skeptics can forward preliminary expressions of interest to Richard 'Party Animal' Lead at taxprof@ozemail.com.au

HOW CAN YOU TELL FROM MAKE BELIEVE?

Roland Seidel

Like many of my colleagues in the Skeptics I'm a fence jumper. In my younger days I tried every spiritual, new age, old age, mystical, scientific, philosophical, mathematical, experiential, oriental, native way of knowing and was a competent astrologer and tarot reader.

In the eighties the rational scientific perspective began to emerge as the frontrunner and enlightenment kicked in shortly afterwards, much to the disappointment of my friends as I became less entertaining and more challenging. But the big surprise to me was that simply explaining it to people seemed insufficient and I found myself increasingly feeling like I was talking to Aliens – or that I was the Alien and perhaps I'd landed on the wrong planet.

So I redirected my search towards brain research and language looking for why we are so susceptible to delusion. Eventually I found what at the time was an extraordinary book that filled nearly every gap - *Dying to Live* by Susan Blackmore (who is my hero and the reason I joined the Skeptics).

In the process, however, I found you don't have to be wacky to have a head full of unjustifiable ideas. Barry Beyerstein said it as well as anybody:

"If only ignorant and gullible people accepted far-fetched ideas, little else would be needed to explain the abundance of folly in modern society."

So I'm going to talk about brains and how you can't trust them, about words that I found useful, and about Science because there seems to be great confusion about what is scientific and what isn't. What I hope to give you to take away are some handy tools for the epistemological battles that go on outside your head and in it. To give the punch line first – here's my favourite maxim for making sense of it all.

Science tells us about the **natural world**.

Everything else tells us about what it **feels** like to be human

Brain

They say that 90% of what we know about the brain has been learnt in the last decade – and most of it is shocking.

Memory

Memories are not stored anywhere specific but where they are experienced – the visual, somatic and auditory parts in those parts of the brain. Recalling a memory is actually a matter of re-experiencing the event, which explains why sad memories are painful to recall. The dramatic implication, though, is that memories will

always be contaminated by subsequent experience and must always be regarded as distorted. Indeed, we have seen in the False Memory Syndrome how easy it is to construct very real memories of very unreal events. Elizabeth Loftus has even shown that plain old visualising (imagining yourself in some circumstance) can produce 'real' memories.

Perception

Neatly summarised as 'eyes look, brain sees', the act of perception turns out to be nowhere near as reliable as we'd think. We used to wonder what dreaming was and now we know it is what we do all the time. Dreams are the inner world constructed 100% from memory and imagination and the same process continues when you're awake with information about the outside world mixed with memory and imagination about 50% each. Half of what you see and hear is made up for you by your brain.

You can see this in the difference between a new place, where you spend lots of busy brain time looking around at what is there, and a familiar place where you don't give anything a second look – or even a first look. You can trick someone by shifting something from the mantle and asking them afterwards if it was there and often they will swear that it was. Your brain knows it was there so that is the movie it plays for you. And how often have you been looking for something that is right under your nose? Your brain hides things from you and invents things for you all the time.

The simple act of touching something becomes a minor miracle. We know it takes 300 ms for a tactile signal to come from your hand to brain while the visual signal takes almost no time to reach the visual cortex. Yet you experience them simultaneously. Obviously

there is some delaying of one or swindling pretence that they arrive at the same time. And in tennis there is not time for a signal to get to your arm after the ball is served, your brain must predict where the ball will be by interpreting body signals of your opponent. And notice that no one can return a let – because it is unpredictable.

Volition

Benjamin Libet performed an experiment where he had subjects flex their wrist and also note exactly when they had made the decision. He was also measuring brain potentials and found that they were ramping up setting the movement in train 400 milliseconds before the subject reported having decided to



Roland Seidel

do so. This suggests that the self is less of an initiator of decisions and more of a reporter. The decisions are formed as the result of network action and the self then takes responsibility for them

Belief

There are plenty of commentators on belief noting it is associated with security. You might call security the principal currency of the brain. Because the brain abhors a vacuum any explanation will do – it doesn't have to be accurate or supportable, it just has to be comforting. Human beliefs are not encapsulations of the truth, they are constructions of the mind which serve its principal agenda of maximising the security of the self: despots think power will bring security; religionists think god will bring security; paranormalists think magic will bring security; rationalists think science will bring security.

Trevor Case, the inaugural winner of the Australian Skeptics Eureka Prize for the work he did on the nature of belief, observes that superstition is commonly driven by uncertainty. He tells of a Polynesian society where they can fish in the lagoon or the open sea. In the lagoon the catch is fairly certain and they simply go out and fish. In the open sea, where the catch is much less certain, the trip is always accompanied by superstitious rituals. You can see the same thing in the development of agriculture where inquiries about the weather and sowing times have shifted from soothsayers to meteorologists as knowledge of the real mechanisms, and hence confidence in the pronouncements, has increased.

Reality

Reality is a construction in your head that makes it possible to predict the result of your actions and anticipate the behaviour of the rest of the world. Your model of reality only needs to be changed when it conflicts with the evidence of your senses; that is, when your brain (which has been censoring your sensing) accepts that it can no longer sustain whatever illusion it has been presenting to you.

Most times there is a good correlation between the model and reality but there are people whom we call mad where the correlation is not good. We can all get a taste of this in the peculiar sense of unreality that comes when a loved one dies. They are still there in the inside world, but not in the outside world.

Time

People often experience time speeded up slowed down or simply not there at all. The limbic system and temporal lobe construct your sense of self in time and in place and the subjective passage of time is clearly affected by activity, interest

and state of mind. Blackmore argues that the sense of time is closely associated with the sense of self. The self gets a very limited subset of the things that happen (the details of most things happen without conscious awareness) from which it assembles a skein of narrative the sequence of which is the impression of time.

Self

The Self is just another mental model the brain has to assist in predicting outcomes and plan actions. Chomsky argues provocatively that it doesn't come into existence until the baby is 18 months old. The process goes like this.

When a baby is flapping around randomly something happens in its brain when it succeeds in grasping something. This is a success and the pyramidal 'value' cells in the brain stem signal the fact by sending a neurotransmitter throughout the brain (it may be Nitrous Oxide), which has the effect of strengthening synapse connections currently active, thereby making the behaviour they elicited more likely. It's Darwinian natural selection operating on behaviour patterns.

Now the brain eventually recognises that there is a class of things out there that give a double signal. When the baby grabs a bottle it only get sensory signals from its hand, but when it grabs its own foot it gets a second signal from the foot as well. At some point it merges all those bits out there that give the double signal into one model - a model of its self. This is when 'I' comes into

existence, and it happens at about 18 months of age. (This is pretty shocking. I didn't exist until my body and brain had been out of the womb for 18 months.)

They speak of the self, that conscious bit referred to with the perpendicular pronoun, as a construction of the brain, informed on a need to know basis only. It is told the truth, but what will make it feel most secure. I see this as another step in that long progression that has taken us away from the centre of things. The Earth used to be the centre of the universe, then our sun, then our galaxy, now we are nowhere special at all, and lately we are finding out that we are not even masters in our own brains.

The Grand Illusionist Model of the Brain

From all of this shocking and perplexing information of the brain I derive the Grand Illusionist Model of the brain to make sense of it.

Picture the brain. Up in the frontal lobes is the self, sitting in what looks like a control room with a steering wheel and pedals, lots of dials and buttons and a big display, which reads "All OK". Back in the rest of the brain is the grand illusionist in his



Roland Seidel, with broom



Grand illusionist Brain

magician suit, a pigeon on his shoulder, top hat with rabbit on the table, picture of DNA on the wall labelled 'Prime Directive', telephones, business, inputs from eyes ears and all over, shouting, pandemonium, minions running every which way. The only active connection to the self's control room is the big display reporting 'All OK' and perhaps a microphone so the musings of the self can be listened to, the steering wheel and all the controls go nowhere. Outside the control room is one gauge labelled 'security' reading 99%. This can also be called the "That Bastard" model as will be shown later.

Words

Some words that I found useful.

Constructed Belief

It's easy for us to see that the Heaven's Gate people had Constructed Beliefs – a bit of Science Fiction and a bit of Mythology. But everything we feel is the same. My favourite example is Marriage and Divorce. When you fall in love she is the epitome of beauty and can do no wrong; when you divorce she is the epitome of evil and can do no right. Both positions are wrong, and unfair, but there is almost nothing you can do about being committed to the view and having your behaviour changed dramatically as a consequence.

Brain Swindles

Constructed belief sounds as if it's my fault but you can call them Brain Swindles. I have merely been insufficiently vigilant against the master illusionist that is my brain. That Bastard swindled me into behaving badly. I think we are being constantly swindled by our brains into believing stuff – and there are clues that you can look for.

Anger

If you find yourself getting angry there's a fair chance that you are protecting a constructed belief and the divorce circumstance is a good example.

Conviction.

If you find yourself saying 'I know I'm right, I just know.'

Swindle words

If you find yourself using these sorts of words:

Tradition

(often another word for dogma) (honest replacement - habit);

Sacred

(to whom? why?) (honest replacement - cherished);

Secret

(secrecy is power) (honest replacement - not accountable).

(Note that 'secret, sacred tradition' becomes a cherished habit that is not subject to accountability.)

The Tattslotto Effect

This is a brain swindle - you only see the winners. If casino advertising were honest they would have a sign over the entrance saying 'Losers Enter Here' because, in general, people lose money there. But when they point at the particular people who win your brain says 'I could do that'. This works with miracle cures as well where a testimonial is 'proof'.

My sister in law lived in England during the war. They received a missing in action notice about her uncle. She had a dream that he was all right and was found. He was all right and he was found. The experience was a profound one for her and remains with her today. In fact there were bound to be millions of people in the war dreaming about their loved ones missing in action. The dreams that matched reality remain as a strong memory; those that didn't were simply forgotten. It feels so much different when it happens to you. You never hear the failures.

The Cloud Effect

You see pictures in clouds, Rorschach blots, backward masking, tea-leaves, coffee cups, steam, swirling fluids, dark corners, samurai crabs, face on mars, plaster work ... anywhere. It is a trick of perception where your brain is hungry for recognition and if it doesn't get enough information it will fill in the gaps with whatever comes to mind. Visually, this is where you see Jesus in the plaster.

Foggyspeak

This is the Cloud Effect in language. Speak in vague generalisations and your audience is left to fill in the gaps with what they think you mean. Invariably they end up with a strong impression of meaning which will be appealing or not depending on their perception of you. Much political speech is Foggyspeak. All fortune telling is Foggyspeak. Some varieties of foggyspeak are MysticBabble, where you use words like ancient, secret, and sacred; and Technobabble, where you use

words like energy, power, vibrations, force; and PsychoBabble.

Truth

Truth is a word that causes a lot of problems. If there were a Rosetta Stone of truth the entries for three institutions might be -

Science:

has survived peer review [Tectonic plate theory is true]

Business:

is to my advantage [It is true that bank charges have to increase]

New Age:

is entertaining [Astrology is true]

When someone says astrology is true they mean it was satisfying, the way a movie is satisfying. You are presented with a vague story into which you project yourself and introspect on what it means. It is entertaining. You can replace the word 'true' with the word 'entertaining' in most new age writings and it starts to make sense.

Why?

Why are these unsubstantiated ideas so seductive and durable? There are plenty of lists of reasons now including good old sophistry, but here are a few.

The paranormal is the sanctuary of the disenfranchised.

This insight comes from Claire Colebrook, a young female in Monash's Psychology department, in an answer to the question "why are women greater consumers of the new age?"

She noted that the common explanations (that women are not as smart or more gullible) are unsatisfactory because research shows them to be not true. But research does show you are more likely to be a consumer of the new age if you are female, young, black, poor or uneducated. This is clearly because, at the other end of the scale, if you are white, male, middle aged, educated and affluent you have access to real power, by which I mean the political process, the legal process, law enforcement, business advantage - that sort of thing. If you don't have access to real power you have to make do with pretend power to feed your brain's hunger for security.

Confusing the general and the particular

This is so common that you might regard it as the default error. You do it every time you extrapolate from your own experience (I had a bad experience with a doctor therefore all western medicine is bad) or fall for the Tattslotto effect or cite one example (St. John's Wort has been found to be better than synthetic antidepressants therefore herbal medicine is better). Whenever in conversation you have that nagging feeling that something is fishy there's a good chance it is this.

Or the answer to why might be as simple as Ruby Wax's observation that, "There's a seeker born every minute."

So what can you say to people in an attempt to make things more sensible?

That's one out of one so far

When they offer their one example, one testimonial, one experience or one witness you can say 'That's one out of one so far', immediately suggesting you need more evidence for proof.

How can you tell when it's not working?

Astrology always works; every reading is meaningful and entertaining. They say the stars incline they do not compel - unlike a real force like gravity that does compel. If you can't tell when it's not working it is indistinguishable from make believe.

We have Popper who says that if you can't disprove, it ain't Science. Finding fossil rabbits in the Precambrian would disprove evolution but Creationism cannot in principle be disproved so it is not a scientific proposition.

How would the world be different if it weren't true?

Some claim there is a life force that animates living things, that there are spirits all about. But given what we know about perception, if it were just a trick of the mind would it look any different?

That's an interesting claim

Of course if you want to avoid falling into those long tedious ordeals of conversations where they jump from topic to topic with each sentence and nothing is resolved, you can simply respond with 'That's an interesting claim'. It saves you the effort of rebutting it without accepting any part of it and begs the question of evidence.

'Shark cartilage cures cancer.' 'That's an interesting claim.'

'I can tell the future.' 'That's an interesting claim.'

How can you tell Ancient Wisdom from Ancient Stupidity?

When Ancient Wisdom appears in the conversation ask this question. Chewing cinchona bark when you have malaria is ancient wisdom but putting tiger bones in your roof to ward off colds is ancient stupidity.

How can you tell that from Make Believe?

You can always ask this. Given what we now know about the brain - how can you tell any claim from make believe? But don't just ask it of the paranormal, ask it of everyone - the religious, economists, politicians, physicians, psychologists, mechanics, engineers, architects, critics, lawyers, repairers, divorcees, teachers, loggers, environmentalists, fundamentalists, skeptics, atheists, consultants, advertisers, salespeople, friends, relatives and, especially, your own brain - because Clarity Begins at Home.

Science

Now what of Science? In my view, the defining feature of Science is Accountability. This device has given us the greatest institutions humanity has ever devised and they are all based on the premise that humans are fallible. Democracy presumes that people will be corrupted

(and absolute power corrupts absolutely and all great men are bad men) so we have the separation of powers so that nobody has absolute power. Science presumes that humans will be deluded, so we have peer review.

Some will argue that Science is just one way of knowing and intuition and revelation are equal but Science is the only one in the cafeteria of ways of knowing that employs peer review. It says you must lay bare your claims and appeal to everyone to kick the crap out of it. It is unique in that each culture has its own ethics, morals, religion, art and literature but every culture has the same science. It is the only universal way of knowing.

I argue there is no grey area where it is not clear if something is scientific or not. I suggest there is Science and there is Everything else. By which I mean art, music, mythology, literature, religion, spirituality, experiential psychology, philosophy, story telling, personal growth workshops, divination – anything to do with human experience.

I see three sorts of facts: Universal facts (the hard sciences like physics, chemistry and mathematics) that apply throughout the universe; Global facts (things like geology, climatology, biology, zoology) that apply across the planet; and Cultural facts (what is right and wrong, what is beautiful and ugly, what is good and bad, what is art) that apply within a single country or region. The first two are natural and don't change, the third comes from human experience and changes all the time. The scientific method applies to the first two classes but is useless in the third because of the subjectivity there.

Summarised into maxims:

Science tells us what is TRUE and FALSE,

Everything else tells us what is RIGHT and WRONG.

Science tells us what IS,

Everything else tells us what OUGHT to be.

Science tells us about the NATURAL WORLD,

Everything else tells us about what it FEELS like to be human.

The second one makes clear Hitler's swindle when he said that 'survival of the fittest' meant it was OK for him to kill the Jews. Nature is indeed red in tooth and claw but we have language and intelligence, we can divorce ourselves from natural selection to some degree and decide that is not how it ought to be.

What I like most about the third is that it diminishes neither enterprise. It is equally important that we know about being human and about the natural world, but you must use the correct tool in each case. Much of the difficulty seen between Science and Religion, for instance, has been resolved over the recent centuries by Religion delivering unto Science that which is Science's. Science must not make the mistake of thinking it can address everything.

And you must exercise the discipline 'whereof you do not know, thereof you should not speak.' Science has no business talking about God (because that is part of human experience), Religion has no business talking about the age of the earth (because that is part of the natural world) and Astrology has no business talking about the real world, just entertainment.

NOTICE

ITEMS FOR SALE

*And Skeptics in Australia now abed
Shall think themselves accursed they were not here
And hold their skepticism cheap whiles any speaks
Who sat with us upon Convention Day.
Henry V (almost)*

There is no need to feel accursed, nor hold your skepticism cheap if you could not attend the World Skeptics Convention. We produced a number of souvenir items for sale at the Convention and have a limited number of each left. They make ideal gifts for your skeptical friends or relations.

Convention Logo



Polo Shirts

Black with small Logo on breast, (L, XL, XXL)

\$20

T-Shirts

Black with large Logo on front, (L, XL, XXL)

\$15

Caps

Black, Royal Blue, Navy Blue, Maroon

\$8

Coffee mugs

Black with Gold Convention logo or
Yellow with Black Skeptic logo

\$8

Lapel Badges

Skeptic logo or Koala logo

\$5



All prices include packaging and postage.

TOWARDS THE NEW MILLENNIUM: away from reason

Maciej Henneberg

Economic rationalism, the prevailing ideology at the turn of the Christian millennium, puts dollar value on knowledge. Thus, underfunded public education systems produce poor graduates' scientists specialise narrowly in whatever pays, and media publish what sells well to the public. Students demand to be most economically trained for good jobs rather than be bothered with education including history, philosophy or physics. In science, peer review encourages publication of ideas and results supporting 'consensus' while permits must be obtained from ethics committees prior to carrying out research. Judgements of ethics committees and decisions of anonymous peer reviews resemble in form and function activities of the Holy Office of the Roman Catholic Church - an epitome of Dark Ages. I am skeptical about institutionalised science as it is currently organised.

Value systems

Every human individual and every society has more-or-less consciously perceived system of values. These values help individuals to handle a number of heterogeneous activities and situations in such a way that increases well being of societies. No system of values is ideal and hence clashes of values occur in some situations, most commonly when what is best for an individual at a given moment seems not to be the best for a society. Education of children and youths at home and in educational institutions endeavours to impart to new members of a society values that will allow them to integrate into the life of this society with minimum number of conflicts. Societies that can impart to their young efficient systems of values have greater chance to develop and survive in the long run.

It is practical to teach individuals stereotyped behaviours in response to commonly occurring situations. Most systems of values do this. Since full rational justifications of specific reactions to particular situations may be complex and may require time and effort impractical in common educational activities, systems of values often employ global justifications for actions they prescribe. Such is the nature of many religions. "God said you must do this" is all that is required to justify an action. In such systems actions cannot be rationally modified.

Ancient Greeks developed a unique approach to building a system of values. It was based on rational assessment of natural and social phenomena in which each statement had to be logical and empirically proven to be correct. Today we call this approach 'science'. It differs from all other approaches because it openly admits that all of its statements are only approximations of reality and that they are open to questioning based on logic and experimentation, and thus to progressive change. Dogmatic approaches are discouraged and actions can be more effective as they are modified in accordance with objective knowledge.

Paradoxically, in the recent past there were several attempts at a construction of dogmatic systems purporting to have scientific basis. Some of them, like the Church of Scientology are simplistically wrong, but some were sophisticated enough to deceive millions. Prominent amongst these scientific dogmatisms is Marxism. It claims that society can be organised in a scientific way by strict management of the economy, disregarding complexities of human feelings and behaviours. Although some countries still cling to Marxism as their official political doctrine, Marxism has been soundly defeated by its own economic inefficiency leading to the collapse of the former Soviet Empire. The main reason for the system's failure was its refusal to re-examine its theoretical foundations and modify its system of values.

Money

As Marxism was falling down we have witnessed the rise of a new dogmatic pseudo-scientific system of values - economic rationalism. It is based on the assumption that the value of all aspects of human life can be measured with one yardstick - money. Though it is true that any human action has some objective value, the measurement of complex human activities is difficult and thus it is nearly impossible to put a monetary value on everything we do and everything we know. The fact that money is expressed in numbers produces false illusion of the objectivity of the statements of economic rationalists, while money is in fact a completely subjective social construct.

Money is fictitious. For the major part of the 20th Century, money was represented by pieces of paper covered with fanciful printed images and



Maciej Henneberg

numbers - the bank notes or "cash". Hard cash exists only in our imagination, most of the cash changing hands is very soft - touch a wad of bank notes to find out for yourself. Recently, the fiction progressed even further - to numbers that exist only as streams of electrons in cyberspace. Thus what forms the foundation of economic rationalism - money - is dependent on subjective judgments of sellers and buyers and on fictitious pricing systems. A slip of the tongue by this or that president costs more dollars than months of hard honest work of a bricklayer. You can see the wall the bricklayer built, but you cannot see the waves of excitement created in the minds of fund managers by what a politician said. He may take it back the next day, but millions of dollars have already changed hands in the meantime. Economic rationalism created a fictitious system of values based on monetary dogma. It is just another religion.

Education

There are some values fundamental for the successful functioning of a society that can hardly be assessed in numbers of dollars. Education is amongst them. Its crucial value lies in the fact that, as stated by Sam Houston: "The benefits of education and of useful knowledge, generally diffused through a community, are essential to the preservation of a free government."

Education is different from training. During the history of humankind various groups and nations imparted to their young values and knowledge that ensured the new members of families and nations could be trusted to defend values cherished by families and nations. The value of this education, difficult to measure in monetary terms, was the highest possible - survival as a separate free entity without the need to serve or be enslaved by others. The values of freedom and of independence animated generations of people. Independence can only happen if people can judge their world for themselves in such a way that directs them to take effective action to survive.

Economic rationalism and globalisation changed it all. The measure of independence is the amount of money made. If one has to become completely subservient to somebody else's needs in order to make money, so be it. Truth, or objectivity, do not count. As long as you are paid for it you can support false beliefs or alien gods. There must be a lot of people who do not give two hoots about astrology but who write convincing horoscopes in exchange for financial remuneration.

As a professor at a medical school I meet lots of high school youngsters who have no idea of what is the work of a physician or a surgeon. Yet they all want to enter medical school because the job of a medical practitioner is considered a good one by the society. It produces substantial income from vocational training and it is considered honourable because of a title "doctor" attached unfairly to the job. In Australia, as in many other countries, medical school graduates receive two basic undergraduate degrees: one is the Bachelor of Medicine and the other is the Bachelor of Surgery. That is all. They do not get any higher degrees. In non-English speaking countries that in fact, and against our gut feeling, constitute the majority of the World, graduates of medical schools do not earn the right to be called doctors, nor are they given this title by their compatriots.

The medical graduates are variously called *arzt* (in Germany and similarly in Holland), *lekarz* in Poland or *vrach* in Russia. Sexism still ruling many parts of the World, in those countries that attach less social prestige to the job of a healer, the predominant sex in the profession is female. Since high general value was traditionally attached to education, the educators - teachers lectures and professors - usually were held in high regard and were given a sizeable measure of social prestige if not a decent salary. Vestiges of this situation still linger here and there so that some individuals use a title 'professor' to gain an elevated social position. Alas, these days one would rather not mention the fact, because being called a professor is mostly connected to the adjective "nutty", and in general it describes someone who could not make real money in the real world of business and commerce and had to remain in a poorly paid job in a university. The popular proverb says it all: "Those who know how to do things do them, those who do not teach". A job of a high school teacher is the lowest on the list of future occupations considered by university graduates. Members of the teaching profession are poorly paid.

University lecturers gain prestige and promotions if they can obtain research grants and publish papers despite being involved in teaching. A decision by a professor to engage in more teaching than research is seen as a sign of the decline of his/her professional abilities. In many universities professors hire young, inexperienced graduates to do teaching for them, while they devote most of their time to attempts at attracting research funding and publishing in prestigious journals. University managers send very clear signals to their lecturing staff - get grants and publish if you want promotion - teaching can be done by anyone. When I was first appointed a lecturer at the University of Texas, the head of my department advised me "Do not worry if you miss giving a lecture [due to your research obligations] - students will be happy to have more time to themselves".

Indeed there is a high value in doing research because scientific research constitutes the only way in which reliable human knowledge can be increased and deepened. Sadly, what today's culture of universities promotes is not the need to obtain intellectually valuable insights into how the world works, but to bring in research funds and to produce publications with the name of the university on the front page. Whether results obtained for the grant monies or published in prestigious journals are of great intellectual value or not is of secondary importance. A theoretical physicist or a mathematician who produces a ground-breaking new concept using pen and paper is valued less than an agricultural scientist who scientifically develops a process producing an artificial substance resembling animal shit - excuse me, I meant to say a natural fertiliser. No offence intended to agricultural scientists among whom was my father. I wanted to say simply that a research which requires more experimentation using expensive equipment and chemicals and thus costing more dollars is considered more valuable than quiet intellectual effort of a brain that took decades of intense learning to develop to a stage at which new ideas that change our understanding of the world are produced.

Publication problems

The system of funding academic institutions has now produced a very peculiar culture of maximisation of the so-called "objective measures of the research output". These are quantitative indices such as grant dollars, numbers of publications and quotation indices. In its primitive form, years ago, a publication count was just what it purported to be: a count of how many papers a scientist published over a specified period of time. Authors quickly noticed that one can enhance one's record by such measures as dividing a longer single report into separately published fragments, or co-authoring papers to increase individual counts. By adding several names to the list of authors, one published paper produced several items of publication count, because each author could list this paper on his individual publication list. When I added names of my colleagues to my papers I expected them to reciprocate and so my publication record grew. Authorities became conscious of the game and started various schemes in which percentage weights were attached to multiple authorships while publications in volumes printed mostly to increase publication count were considered less important than those in "prestigious" journals.

Currently an "impact factor" is used to assess quality of journals. This is an index of how many times other journals cited work published in a given journal. It is as inaccurate and as subject to manipulation as earlier methods of publication counting. It became now popular to require one's colleagues to quote one's earlier papers, even if they have marginal significance to the topic of a particular publication, because this technique increases "citation index". Citation index indicates how many times others quoted work by a particular scientist. Whether they quoted it because of its exceptionally high value and good quality, or it was quoted because its results were poor and needed to be criticised, does not feature in counts made to obtain the index. Scientists more adept at playing this game - enforcing quotations of their works - adding their names as co-authors, sending papers for publication to journals with higher impact factors etc, become more successful even if their intellectual production is of ordinary quality.

Peer review

The institution of peer review in which grant proposals and papers submitted to scientific journals are sent for assessment to other specialists is becoming misused by some reviewers, to further their needs with respect to quotation indices and fighting off publications in high impact journals by their competitors. This misuse of peer review is now acknowledged by journals and granting bodies who allow authors to indicate in writing who among their colleagues should not be asked to referee their work in order to avoid biased comments.

In this situation it is no wonder that new research proposed by scientists, whose behaviour is perceived as oriented towards publication counts and grant dollars, is considered suspect from the outset and before they are allowed to proceed with it, it must be evaluated by ethics committees. These committees judge whether future pieces of research will be conducted so as not to contravene customs and beliefs and not to cause harm to anyone or anything, including somebody's feelings. True enough, any research must be

conducted within the law and with due care, but the very fact that actions are judged before they have even occurred, indicates the mistrust with which society looks at scientific research. Under those circumstances it becomes progressively more difficult for a scientist to do work that truly contributes new and valuable knowledge. Chasing publication records, grants and subjecting oneself to judgements of committees assessing work, before it even begun, erodes time and energies available for the conduct of new research.

Specialisation

At its beginning science attempted to provide general understanding of the world, but as the scientific production grew and science became more institutionalised, specialisation occurred. Naturally, a single person could not cope with the amount of information being gathered and with the sophistication of methods used to analyse this information. The purpose of science producing logical, general, and clear explanations of the world has been lost in the quest of individuals for justification of their jobs.

It was barely 150 years ago when a single individual such as Charles Darwin could significantly contribute to geology, zoology, botany and anthropology. Today an animal physiologist can hardly converse about his work with an animal taxonomist who, as an entomologist, protests ignorance of the world of fishes. Each one of us is so busy chasing yet another grant and producing yet another publication that we have no time to step back from our computers and see the world as a whole. When I asked one of my colleagues, an archaeologist, whether he read an interesting paper on an archaeological subject that appeared in a recent issue of *Current Anthropology*, he said: "No, of course I did not read it, I am too busy writing my own publications". Sadly, the purpose of many a publication is not to communicate results of most recent work to interested colleagues - they already heard about these results at a conference and through the grapevine - the purpose is to "score" a publication.

When one writes a paper containing a novel approach to some problem, or a critical appraisal of the state of a particular field of work, there is a high risk that referees will not like the paper and recommend to the editors that the paper should not be published. In order to score a publication one needs to write a paper praising everybody's work, agreeing with the most common opinions and contributing a bit of new data. Since we all need to score we keep repeating same opinions and producing data that support them.

The Human Genome Project has been hailed as the great triumph of science of the last several years. Although there is no denying that having a full list of human genetic code is contributing to our knowledge, on closer examination this project is based on old ideas and contributes little to our understanding of how human body works and how it interacts with pathogenic agents. The idea that four kinds of nucleotides strung into double helix of DNA constitute letters of genetic code that directs synthesis of proteins and other organic chemicals in the body, has been known since 1950s. I distinctly remember learning it in late 1960s. What has happened since then was simply a laborious unravelling of the parts of this code, letter by letter; sequence

of nucleotides after sequence. Now we have all the letters of the human code strung into sentences, chromosome after chromosome. It is like having in our hands a book describing all the secrets of life. It turns out, however, that most of this book is written in a language we do not understand. We are now told that large groups of scientists must work for years to correlate parts of genetic code with actual properties of human bodies and with various pathological states. We knew the principles of genetic coding a long time ago. Now we have to write example after example of their application. What new is there?

In the 18th century French scientist Pierre-Simon de Laplace optimistically stated that all we need to be able to predict the fate of the world is to describe properties, position and motion of all particles in the universe. He was right, but we still cannot predict even the local weather for more than a few days. Had he been alive today, and working on his idea, he would still be describing particles present in his own kitchen.

The scientist as entrepreneur

Scientists today became entrepreneurs, trying to get as many dollars for their knowledge as they can. Thus packaging of the products of science and the invention of topics, like the Human Genome Project, allows us to "crank the handle" of a machine producing practically endless streams of data.

For the first time in history, humans in the late 20th Century were faced by the situation in which their abilities to store and transmit data exceeded the amount of data acquired. Internet, that was supposed to make growing stores of useful human knowledge available to everyone, is full of horoscopes, pornography and commercial advertisements, while an average high school graduate cringes at just a mention of a logarithm or the Treaty of Versailles. Many younger members of the public think that the Weimar Republic is a small Eastern European country.

Our universities became very aware of the value of intellectual property and we are all encouraged not to share with others information we develop or discover, at least not until the time it is patented and can be commercialised. The same is true when it comes to imparting information to students. Why should I teach my students well if, in a few years after graduation, the brightest of them may outcompete me from a lucrative commercial contract? After all I can derive no guarantee of livelihood from the fact that I taught them well. I can, however, gain advantage knowing things they do not know.

Teaching and learning

Giving little knowledge to students is not a problem. It actually is what they want. They do not want to be bothered learning about failures of Laplace and Maxwell, or, God forbid, the history of Elizabethan England. They want to learn a good trade in as easy a way as possible. An internet based course leading to a full medical or legal qualification in six months time would actually be ideal.

During some of my lectures I notice what seems to be a sense of excitement among

my students. It usually happens when I become excited, because as I lecture I come up with new insights into the topic. At the end of the lecture, hoping to stimulate the discussion I ask if students have any questions. Yes, they do. They want to know whether what I said in this lecture is going to be in the final exam. Well, I say, yes, but why were you so animated during the lecture? "We searched through the handout you distributed at the beginning and we could not find there some things you were saying. How are we going to learn them while studying for the exam?"

The word "studying" changed its meaning during the time I worked at various universities. When we went to the university in the 1960s we were told that we had to search for knowledge in various sources and discuss issues surrounding topics we were learning so as to gain a good understanding of these topics. This process was then called "study". Now, apparently "to study" means to memorise lecture notes and contents of the textbook. Critical examination of the ideas is not even mentioned.

Free discussion of ideas that form the cornerstone of science is now effectively dampened by the lack of common core of knowledge. Free discussion is also discouraged at conferences, where as many papers as possible must be crammed into as little time as practicable, so that all participants can "score" a conference presentation, while they do not have to pay higher conference fees for staying at the conference too long.

Not everything is lost. The best books ever written are now available on the Internet. Electronic mail allows us to discuss the newest discoveries with colleagues dispersed around the globe. Good papers and good books still appear in print. Sometimes one can have a good deep and frank discussion of an interesting bit of physics or geology with a colleague at the university club. Finally, those of us who have money can send our children to good schools and to first class universities. It just seems that neither governments nor the society at large see much value in science they cannot understand. We scientists must make ourselves clear, must oppose unreasonable competition for grant dollars and publication numbers, in short, we have to become rational in our assessment of how science is done by escaping the irrationality of the current belief in economic rationalism.



Steve Walker amazes dinner cruisers with his skills.

FALSE PROPHETS AND OTHER WANKERS

Nicholas Cowdery QC

Introduction

The first thing I should do is to explain the (only slightly) offensive title of this paper.

Prophets, of course, are people whose utterances are inspired – mortals who speak with more than mortals' knowledge or insight: with paranormal ability. Their utterances are not necessarily predictive.

The meaning of the word "wanker" is, I hope, already known to you.

My title is drawn from two references that are worth quoting.

The first is from the Christian Bible, the *Book of Matthew*:

Beware of false prophets, which come to you in sheep's clothing, but inwardly they are ravening wolves.

The second is from South Africa, which I visited a couple of months ago. I noticed that the prolific author, essayist, raconteur, social commentator and wit - *Anon.* - has been busy there too and was responsible for these telling words:

It's not the muggers that kill you, it's the wankers.

The two come together nicely, because most of the scammers and con artists we encounter are false prophets – and all of them are wankers (or the female equivalent, if there is one – or needs to be one). But will they kill you?

Sangoma

While in South Africa I saw a sign on a taxi: "Raping a virgin does not cure AIDS". Aha, I thought: the local branch of the Skeptics has obviously been at work here!

Why should such an extraordinary statement be given such public exposure? Was this another manifestation of President Mbeki's evolving thought processes on the subject? No, it is because the traditional witchdoctors – *sangoma* – who still wield enormous power in some communities, have been putting it about that having sexual intercourse with a virgin will cure AIDS (which is in epidemic proportions on the African continent). Now, your average African HIV AIDS sufferer doesn't usually have access to compliant virgins (if such are to be found at all).

Consequently, in areas where the *sangoma* have power and influence there has been a rash of cases recently of young girls, usually under 10 (just to make sure), being abducted, raped and then murdered of course, to prevent them testifying. These wankers will kill you.

Nelson Mandela in his autobiography *Long Walk to Freedom* recounted a more benign experience with a *sangoma*. As a lawyer he was appearing for a local medicine man charged with witchcraft. This man had enormous power and influence in the area and the local people were keen to see whether or not the white man's laws could be applied to him. At one point in the proceedings the man sneezed violently and there was a stampede from the courtroom. People believed he was casting a spell. In the end he was found not guilty, but the local people would not credit Mandela with that achievement as his defence lawyer.

They are known in Papua New Guinea as *sanguma* men (a similar word) and they have provoked some amusing incidents in courts in that country. They will also kill you – in the same fashion that pointing the bone in some Australian aboriginal cultures can have terminal effects.

Experiences of this kind are not confined, however, to developing countries or to unfamiliar belief systems. In Queensland (which may or may not qualify for that description – on both counts) a man, only recently, sued

the Catholic Church for negligent spiritual advice. He claimed that he had been given incorrect advice by a clergyman as to how far intercommunion with other Christians was permitted. He was told that it was generally OK at weddings and funerals. He had acted on that advice before discovering that it was erroneous and as a consequence had suffered nervous shock. The court dismissed his claim that there had been a breach of fiduciary duty by the Church or its Bishop.

Governments are not immune from all this, of course. During World War II Helen Duncan, a woman working in a bleach factory in England, also practised as a medium and held regular seances in which she purported to conjure up the spirits of the dead. At one



Nicholas Cowdery

séance the spirit of a sailor on board HMS *Barham* supposedly told participants: "My ship has sunk." Now, all news of the ship's sinking off Malta had been suppressed to that time. British authorities learnt of Mrs Duncan's remarkable insight and concluded that she represented a wartime security risk. She was prosecuted under the Witchcraft Act 1735 which included the offence of fraudulently raising the spirits of the dead (presumably including also attempts to commit the principal offence). She was convicted of "pretending to exercise conjuration" and sentenced to nine months imprisonment. (Winston Churchill later described the whole proceedings as "obsolete tomfoolery".) She was pardoned last year, you will be pleased to hear.

(There is now a Fraudulent Mediums Act in force in the UK – deceptive practices carry penalties of up to two years imprisonment.)

Closer to Home

You might expect that a prosecutor speaking in a session like this might mention some local scams that have ended up in the criminal courts. We do have provisions in the criminal law that can be applied to deceptive practices, but fortunately there have not been many instances of the paranormal kind coming to our attention. I shall mention one case that indirectly raises such matters.

A bank teller was charged with stealing a sum of money from the bank. She had an unfortunate life and had turned to the classified ads in the *Daily Telegraph* for help. There she found an advertisement for a psychic and, being anxious to know if the future was going to be any better for her, telephoned the psychic. The psychic picked up our hapless lady from the station and took her to a very impressive house in which there was a special room for clairvoyance or readings, with candles and so on. There were also tarot cards and a hanging chain of crystals. This lady visited the psychic for seven months, as it happened, every fortnight after payday. Her first payment was \$800 which was required in order to get the psychic's friend, who lived in Egypt, in the bush (apparently), to get something magic from a special tree that grew only there. (So much for our quarantine laws.)

The psychic said she would be able to remove the black magic that had been placed on this lady by evil members of her family. She paid \$500 each fortnight and when cash became short (inevitably) she was presented with a choice. She had some jewellery – as it happens, worth about \$15,000. The psychic told her that it could be used to improve the magic but it would have to be buried in a cemetery at midnight. On the other hand, if she gave it to the psychic, she would attend to this unsettling task.

Nothing much happened to our lady so she demanded a refund. There was an argument. She went overseas for a short holiday and on return to the psychic was told that all the progress that had been made had been undone by her flying over deep water. It was necessary to start from the beginning again. So she did.

Our lady then claims that while hypnotised by the psychic's dangling crystals, she was persuaded that if the psychic wanted some money from the bank on behalf of someone else who was too frail to come into the bank, then she could withdraw it.

A few days later Lucy came into the bank, wearing some of the lady's jewellery, as it happens – but only to influence the magic. (It is not known whether it showed any signs of having been buried in a cemetery.) She presented withdrawal forms and a passbook, the signatures seemed to match and the money was paid.

The false prophet in this case didn't kill the bank teller – but, if her story is true, it got her into an awful lot of trouble. (If her story is not true she is probably in worse trouble.)

Civil Consequences

There can be consequences in the civil jurisdiction of the courts, as well, from the activities or intervention of wankers.

In the USA in 1986 a jury in Philadelphia awarded damages of \$986,000 to a soothsayer who claimed that she had lost her psychic powers following a CAT scan. (The report I have does not state which part of the body was scanned.) That verdict was, fortunately, thrown out by the judge (as they can do under the rather different American procedure).

That country was also responsible for a growth in litigation (but only temporarily) following the Second World War in which claimants recovered damages for various cancers, allegedly caused by physical trauma. It began when a woman fell and was slightly injured – abrasions to her left ankle, right knee and both hands – while alighting from a street car in 1949 (again in Philadelphia). She noticed a lump in her breast two months later and was eventually awarded \$25,000 for compensation for breast cancer "caused" (it was held) by her fall from the street car. It is recorded that the apparently carcinogenic properties of trauma increased dramatically as workers' compensation schemes developed. There were many false prophets driving these developments, of course, especially in the legal and medical professions.

Credit Cards and Mailing Lists

Anybody who has a credit card or is on a mailing list is liable to be approached by a myriad of false prophets – all promising a great deal for very little. A letter writer to a Sydney Sunday newspaper recently reported receiving approaches from:

- Canadian Equity Funding: pay \$29.95, win up to \$8,000
- Northwest German Class Lottery: pay US\$140, daily prizes of DM 1 million, houses, etc
- South German Class Lottery: pay \$216, daily and monthly prizes of cash, houses, etc
- North American Award Centre: entry fees of \$9 or \$15 in a simple competition, total prizes \$21,000 for both games
- Worldwide Lottery Commission: entry \$113.11 to \$242.56, prizes astronomical
- International Social Offers, Vancouver: pay \$39, win a Holden Barina, watch or CD player
- European Lottery Guild: pay \$45, win a trip to London

- Territory Lottery Company, Darwin
- International Direct Inc: you are the \$25,000 cash prize winner – nothing to pay!

The international scourge of the present, however, is the Nigerian scam. This started years ago and is still going strong. I still get letters, faxes and e-mails regularly – addressed to me in my official capacity. Some time ago the Australian Federal Police looked into it, as have police in other countries, but without much success.

A typical approach (although there are variations) purports to be made by a senior person in a Nigerian petroleum company which, as a result of over-invoicing and contract revisions now finds itself with millions of surplus dollars that only you can save it from. The writer wants to move the whole lot into your personal bank account and give you a percentage (usually about a third) within 14 days. No questions asked – no sweat required. You must keep this confidential and send details of your bank account immediately. (Oh, and a signature somewhere would help too.)

These messages come from people like Dr Uzor, Mr Ogili, Mr Bello, Mr Gwarzo, Mr Uriah, Dr Samuel, Mrs Ikhazoboh, Dr Idris, Dr Abraham, Hon. Sani Ahmed, Dr Ali, Dr Opara, and so on (to name just a few of my recent correspondents).

There are variations on this theme: sometimes a unique investment opportunity is being proposed; sometimes it is the relative of some dead dictator or some such who has been left with this embarrassing pile of cash; and so on.

The scam lies in getting hold of your bank account details (and signature, if possible); but sometimes people actually send money. I have learnt of one retired American couple who put a sizeable whack of their retirement funds into a Nigerian bank as a result of one of these approaches. They became concerned over time when things did not appear to be going as promised. They threatened to go to Nigeria to make inquiries and were invited by their correspondent to do so. They were met at the airport by a limousine and taken to a modern high rise building where X Bank was apparently located on a whole floor. They listened to a plausible rogue who produced and signed all sorts of undertakings and they left. Nothing happened. When police were later sent to the address they had visited, the floor of the building was deserted. It was available for short term lease.

Last Friday I received an interesting new twist to the story. In identical faxes sent about half an hour apart a Mr Mallam Yahaya Al-Mustapha, claiming to be the junior brother to Major Hamza Al-Mustapha, the former chief security officer to the late (and unlamented) General Sanni Abacha, made an offer that he obviously thought too good to refuse. He said that he is hiding out in Lagos with \$27.5 million in \$100 bills that he is afraid to put into his London account because the authorities might seize it. He has a friend in a foreign airline, he says, who can cargo the money to England or Holland where he (Mr Mallam) can meet me for me to open an account and deposit the money. Why? For that modest assistance I am offered 15% of the total (\$4.125 million). Why am I standing here talking to you?

Lessons

What features appear from these stories? What lessons might we learn from them? We see in most cases ignorance; sometimes superstition; often fear of the unknown; and trust uncritically bestowed. On the other side there is usually greed; there is predatoriness. Often there is psychopathology on one or even both sides.

I have not made much reference to more common forms of fraud and deception. We have our share of common or garden scammers: the plausible conmen who prefer to live on other people's money and spend their time and admittedly considerable talents dreaming up ways of getting hold of it – the Bonds, Skases, Knights, Wards, Yuills and others who flourished in the eighties (and some of whom have got a second wind); the less ambitious predators who are content to rip off a few thousand dollars at a time by gulling the weak or ignorant with franchise schemes and other supposed avenues to instant wealth. They make no paranormal claims – indeed, their greed is depressingly normal.

A Parting Note

Earlier this year I received a letter from the President of the World-Wide Remote Controlled Surveillance Telephone Club, together with a self-published book entitled *The Geoffrey Brown Diary and Letters* dedicated to me, amongst others. The letter said that there is a base sub-branch in Sydney whose President is Gough Whitlam, former Prime Minister. The clubs interstate have Malcolm Fraser as President in Melbourne, Wayne Goss in Queensland, Sir Donald Bradman in Adelaide and Don Dunstan as Vice-President (ponder that, given the timing of the letter!). Brian Burke is the President of the Western Australian branch.

It was complained that the Sydney sub-branch is delinquent with crime and that I should investigate. So be warned, in case any of you are members of this illustrious band.

The crimes were said to be murder in biochemical engineering, invasion of privacy, breaches of human rights and trespass.

Mr Brown (let's call him that – because that's his name), who is World Spiritual Leader, complains about Body Broadcasting Spectrophotometry, Raman Gas-fluid Spectrophotometry and Collimation. Retinal Eye Television is said to be the major impact. Darryl Zanuck, a member of this club, is said to have had Mr Brown, his father and grandfather under remote surveillance from 1949 to 1971 via the US State Department and the Ecumenical Council. Army Reserve Privates and Corporals apparently absorb the ultimate mania that all this produces.

There are some consolations, however. Louis Armstrong, Ella Fitzgerald, and Billie Holiday apparently are still alive. (If only we could find out where they are playing...)

There are lots of ravening wolves about.



TRUST ME, I'M A DOCTOR

Gillian M Shenfield

According to my dictionary a skeptic (or sceptic), is amongst other things, "a person who tends to disbelieve". This is a very useful definition that allows scepticism towards anything and everything.

It is my impression that Skeptics often direct their attention to people who believe in things such as financial scams, UFOs and alien abductions. Many of these are so patently absurd that few rational people are likely to accept them. Those who practice fraudulent schemes know the truth and prey upon the gullibility and/or greed of some members of the population in order to make huge profits for themselves. It is possible that some people might be dissuaded from losing their life savings if they had the opportunity to listen to rational argument before taking the plunge. However I do not intend to discuss these topics further. Unfortunately logical argument will rarely succeed in dissuading followers of strange cults because they "believe" in them. Almost by definition a belief is not rational and is therefore unlikely to be displaced by anything as boringly concrete as a logical argument.

How good are established therapies?

I am a doctor and for many years have been interested in the beliefs that underlie the way members of the profession diagnose and treat their patients. Doctors are to a greater or lesser extent trained in scientific method and the majority have genuine intentions of trying to help. They are not there to cheat or mislead, their aims are to palliate or if possible cure yet the majority of treatments that were practiced two, three or four hundred years ago, such as bleeding and purging, are now considered obsolete and misguided. In spite of this some doctors were always much more successful than others which suggests that they must have been doing something right.

I am aware of many examples of "established" therapy which have changed completely during my professional life. Observation of these processes gives an interesting insight into how hard it is to change people's attitudes and beliefs even when they are supposedly based on scientific observation.

When I was a student we were taught that the stomach and upper part of the small gut were sterile organs. That is to say that never, ever, did they contain bacteria or other infectious organisms because the stomach contained so much acid that no such organisms could survive. This view was substantiated by the "fact" that no-

one had ever observed or grown an organism from this unfavourable environment.

A highly respected text book, *Diseases of the Digestive System*, published in 1963 espoused the then current view and had the honesty to state that the cause of chronic peptic ulcer remained obscure. It listed a whole series of contributory factors including excess gastric acid, reduced resistance of the lining of the stomach, certain blood groups, living at high altitude, hormonal influences and associated hormonal disorders. There was no mention of infection. Not surprisingly treatment was based on bland "invalid" diets, antacids to neutralise the fluid in the stomach and sundry other measures with even less rational basis. Many people with severe persistent ulcers ended up under the surgeon's knife and later the introduction of potent, acid suppressing drugs made billions of dollars for at least two pharmaceutical companies.

Karl Popper is undoubtedly the best philosopher of scientific method. He stated that it is wrong to state that scientific progress proceeds by a process of induction. It had been considered that scientists carried out experiments with the aim of making carefully controlled and meticulous observations at some point on the frontier between our knowledge and our ignorance. These findings are recorded, sometimes published and data are accumulated and established. Scientists then formulate general hypotheses, sometimes known as laws, which fit all the known facts and explain how they relate to one another. Individual scientists try to confirm any hypothesis by finding evidence to support it. This is what the great scientists thought that they did but Popper pointed out that this is neither logical nor in fact what people actually do.

He described that system as "verification" and suggested that "falsification" is a much better method. His classical example was that however many millions of observations there have been of white swans it is not possible to make the universal statement "all swans are white". I confirmed this when I first arrived at Perth airport in 1976 and the first bird I saw was a black swan. In Popperian theory this single black swan is enough to prove that it cannot be the case that all swans are white. Therefore he stated that a scientific law can be conclusively falsified although it can never be conclusively verified.

A contrary case

The correctness and utility of this approach to medicine was dra-



Gillian Shenfield

matically demonstrated in 1984 when, quite appropriately in Perth, Marshall and Warren described what they called “unidentified curved bacilli in the stomach of patients with gastritis and peptic ulceration”. This single observation was sufficient to prove that the stomach was not always sterile.

In 1985 Marshall published a paper in which he described his attempts to provide a link between the newly found bacterium and stomach irritation and possibly ulcers. He bravely drank a culture of these organisms and developed major irritation of his stomach which persisted for some weeks. He was lucky not to develop an ulcer.

I will not bore you with a blow-by-blow account of what happened next, but Barry Marshall then set out to convince the world that this bacterium was the cause of peptic ulcers and that therefore the logical treatment should be with antibiotics. It took him a decade to achieve widespread acceptance of these rational and obvious conclusions. There are a number of reasons for this some of which relate to the fact that he was young, Australian and not considered of sufficient status to challenge eminent world authorities. Fortunately he was also confident and resilient and, in spite of much public and international criticism, stuck to his task. Even if he had been an eminent professor he would have come across many of the same difficulties. People find it very hard to rid themselves of entrenched beliefs, to accept and admit that what they have been doing all their working lives is wrong, to get their minds around a concept so revolutionary that it goes against all their training and all their intuition.

In time even a conservative medical profession is capable of change and the current approved treatment for peptic ulcer is to give antibiotics. We also use the latest drugs to suppress acid secretion in the stomach because acid undoubtedly irritates and perpetuates existing ulcers but this treatment is only for a few weeks. As a measure of the sea change that has occurred since Marshall’s original article a quick *Medline* search done a couple of weeks ago revealed 11,538 articles written on *Helicobacter Pylori* as the offending organism is now known.

Other examples of how medical practice has changed in my lifetime include the management of heart attack which used to be treated by three to six weeks total bed rest. Now patients are lucky to spend two days in hospital and are often back at work in six weeks. We used to treat all overdose patients by giving them litres of intravenous fluids to ‘flush out the drugs’. We stopped that about twenty years ago and survival figures improved! As with the treatment of ulcers it took a long time for doctors to accept that their previous practices were completely wrong and even counterproductive for their patients.

I am a Clinical Pharmacologist and I have a special interest in all medications used to treat or prevent disease. One of the topics that has occupied many Skeptics is that of alternative or complementary medicines. I too have an interest in them although my role has been to document what people are using and why they are using them rather than to challenge underlying premises. One of the arguments that has frequently been used to negate such practices is that we don’t have any evidence

about how they work and therefore they cannot work. This is a demonstrably false argument. If we applied it to most of the conventional drugs that we prescribe we would not be left with many agents. I will give you a few examples of drugs that were of considerable clinical value long before we knew how they worked.

Opiates such as morphine have been used by human society for at least five thousand years. Many of the things that these potent drugs did had been described in minute and elegant detail but how they did them was totally unknown until the 1970s when it was discovered that our brains both contain receptors especially designed to receive opiates and also produce closely related substances, called endorphins, which can produce euphoria and some dulling of painful stimuli.

Aspirin was produced from willow bark over three hundred years ago but it was only in the 1970s that Vane and his colleagues found out how it worked and laid the basis for a whole new area of medical science and pharmaceutical development. Over two hundred years ago a professor of medicine in Birmingham, England described with precise and astute accuracy all the effects of digitalis. He believed it was a diuretic substance increasing the excretion of urine whereas we now know that it works by stimulating the heart in at least three different ways. Digoxin is still widely used and still produced from foxglove plants!

Present day medical students are taught “Evidence Based Medicine”. This is the concept that we should collect the facts and absorb all the evidence before making any therapeutic decisions. Superficially it seems hard to argue against this but when faced with an individual patient the information gained from a Clinical Trial, in a different type of person in a different country, is not necessarily a great deal of assistance. We can, and should, be aware of those treatment methods that have been shown in trials to be useless. But which of a number of potential treatments is likely to be best in a given individual is where the “art” rather than the science of medicine becomes essential.

The problem is that the art is based not just on our objective experience but also on our beliefs. The difficulty with beliefs is that they feel as if they based on rational grounds whether they are or not. With regard to complementary medicines I have some evidence that people who use them are ‘believers’. When we surveyed parents of children with asthma we found that over 80% thought that the conventional medicines used by their children were effective but only 60% were satisfied with those effects. In contrast only 12% thought the complementary medicines they used were effective but over 50% were satisfied with them. In another study we found that people who did not use complementary medicines could tell the difference between two advertising claims for a product. Users could not distinguish between them.

Unfortunately it is very difficult to apply the system of falsification to situations like this. If people believe that alien spaceships are landing in their back yard every night how can you convince them otherwise? Popper himself recognised this. The logic is irrefutable; if a single black swan has been observed then it cannot be the case that all swans are white. But in practice it is always possible to deny any observation. We may for

continued p 46 ...

SKEPTICAL SCRUTINY SCUTTLES SCAREMONGERS

Colin Keay

Although the origins of organised scepticism may be traced back at least to the ancient Greeks, the present-day sceptic movements date back barely a quarter of a century. Their rebirth was largely focused on a critical examination of claimed paranormal phenomena. But this is changing. In America James Randi broadened his challenge to include investigations of false claims, such as those of the ridiculous Quadro Tracker whose promoters have been exposed as charlatans, tried in court, and jailed.

Here in Australia the Hunter Sceptics have followed Randi's example, attacking pseudo-science in many of its manifestations, such as ineffective consumer devices and so-called alternative medical products. Here, due to the indefatigable efforts of our life-member Nurse Cheryl Freeman, the authorities have successfully prosecuted several of the quacks involved in making, promoting and marketing worthless medical products.

Also, Hunter Sceptics vice-president, Col Maybury has proved that sceptics are as concerned for the environment as anyone else, by fighting and succeeding in a battle to have an aluminium smelter act responsibly in disposing of its emissions and wastes. Our sceptics are no strangers to legal threats and court cases. There is, however, a new thrust to our scepticism: challenging the scaremongers who seize upon the slenderest pretext to raise alarms about the safety of those benefits and comforts that give us the highest living standards and longevity ever known.

Typical of this alarmism is a book, *Hidden Hazards: The Dark Side of Everyday Technology and how it Affects Your Health and Environment*. Included in the hazards to our well-being are air-conditioning, artificial lighting, electric blankets, VDU's, TV, microwave ovens, food irradiation, chlorination, fluoridation, dental amalgams, aluminium cooking pots, sunscreen creams and, surprise, surprise, nuclear power. The book was published nine years ago, which probably explains why genetically modified foods and mobile phones were not mentioned. Sadly, one of the authors, Ron Laura, is a professor of education specialising in health education. John Ashton is a food chemist (who has also written a book on creationism). It does not require much Imagination to appreciate that the "hazards" Laura and Ashton rage about bring benefits that make them attractive to users.

Of course the benefits of nuclear power are recognised by very few, a sad circumstance that we shall examine shortly. Two years ago, the same pair of authors wrote a second alarmist book *The Perils of Progress: The Health and Environment Hazards of Modern Technology and What You can*

Do About Them. Publishers obviously sense a market for this kind of scare mongering. I reviewed this book harshly in *the Skeptic* soon after it was published. Its authors claim that "by blindly implementing changes in nature whose disruptive consequences we have failed to anticipate, we have brought ourselves to the brink of destruction." Good grief, stop the world, I want to get off!

Naturally Laura and Ashton's second shocking expose of the horrors of modern living was brought up to date with dire warnings of the dangers of genetic engineering and mobile phones, rectifying their previous omission of these new menaces to mankind. More on them in a moment. It is well known that the use of chemicals may or may not be dangerous, depending on toxicity and degree of exposure. This was discussed in an article I wrote "Arsenic and Radiation" in *the Skeptic*. The article did not explicitly address the situation that the use of chemicals, such as dental amalgams and sunscreens, may confer benefits that more than offset their possible dangers. As a somewhat extreme example it was recently reported that Equador is resuming the use of DDT for mosquito control, to cut down the incidence of malaria. DDT, like mention of dioxins, evokes a shock-horror reaction not borne out by scrutiny of the facts. In the case of dioxins, they are produced by cooking on a barbecue and by many other common processes, such as bush fires. The 1976 Seveso accident caused much acne and angst, but no deaths. The only death positively linked to a dioxin release was one that occurred half a century ago in Germany when 247 people were accidentally exposed to it (Muller, 1997).

The current furore against genetically modified foods has all the earmarks of a beat-up. Australia's foremost expert in biological and medical science, Sir Gustav Nossal, has stated publicly that he sees no cause for concern. Dr J Botella, Director of the Plant Genetic Engineering Laboratory at the University of Queensland insists that there is no evidence of harm from gm foods.

But despite expert testimony, instant self-proclaimed authorities continue to gain undeserved attention with their scaremongering. After all, the genetic engineers are simply achieving in one go what plant breeders strive for over tens or hundreds of generations of hit-and-miss selective breeding trials in developing better foods. Whether sanity or scare tactics win in the Australian gm debate will be known fairly soon because a *GeneTechnology2000* regulatory bill is currently before federal parliament. In the words of one senator, the days of "trust me, I'm wearing a white coat" are long gone (*SMH*, 6/11/00). If that senator is so sceptical of



Colin Keay

the real experts, she should be doubly sceptical of those lacking relevant expertise. We can only hope that a sensible regulatory framework emerges from the parliament, otherwise Australia will fall behind in yet another field of science.

Mobile telephones and their towers are another innovation where users have already formed their judgement of benefit versus health cost. Until there emerges some definite evidence for harm, the use of personal phones will continue to rise to saturation point. Radiation from the towers is a worry to some, especially the parents of school children when a tower is sited near a school. Such was the case for a school in New Zealand. The parent association called in an Australian with a reputation as an expert on the hazards of radiation and appealed to the Environment Court. The

scaremongers, this is it. Careful scrutiny of the many outrageous claims being repeated *ad nauseam* shows that they are pure myth. Below are 21 widely publicised anti-nuclear myths that are quite without justification (Table 1). The facts support none of them.

These are mainly direct quotes from anti-nuclear sources. To take one example: the death toll of nuclear power station disasters. The only casualties due to the Three Mile Island reactor melt-down were heart attacks and strokes induced by anxiety arising from media scare stories, not by nuclear radiation. The release of radioactivity was so small that there was a one in twenty chance of a single late onset cancer because of it.

Likewise, through relentless propaganda, the name Chernobyl strikes fear whenever it is uttered. In June 2000 an UNSCEAR (U N Scientific Committee on the

Table 1

Mischievous Anti-Nuclear Myths

1 A single nuclear particle may initiate a cancer	12 High level nuclear waste threatens human life for 250,000 years
2 There is no safe level of exposure	13 There is no safe way to dispose of high-level nuclear waste
3 Plutonium is the most carcinogenic substance known	14 Power reactors produce plutonium which can be diverted for use in nuclear weapons
4 Plutonium is the most toxic substance in the world	15 Given the plutonium, schoolboys could build an atomic bomb in a garage workshop
5 Half a kilogram of plutonium, spread evenly around the world, is enough to induce lung cancer in every person on Earth	16 The MOX industry is heavily reliant on reprocessing to produce plutonium
6 Plutonium was named after Pluto, god of the underworld	17 People living near nuclear reactors and facilities suffer increased rates of leukaemia
7 Tens, if not hundreds, of thousands have died as a result of the Chernobyl disaster	18 The energy generated by nuclear reactors never repays the energy needed to build them
8 Those participating in the Chernobyl clean-up slowly but surely killed themselves	19 The Lucas Heights reactor is another potential Chernobyl disaster waiting to happen
9 Nuclear power is the world's most dangerous business	20 It is cheaper to produce electricity through a new wind power plant than a nuclear station
10 "The China Syndrome". A reactor melt-down could burn right through the Earth	21 Not one scientist is prepared to state categorically that there is no risk of a nuclear accident.
11 No nuclear reactors have been safely decommissioned, and who pays the bill?	

Court showed exemplary scepticism, finding against the school largely because their case was blatantly one-sided (Decision C 136/98). NZ Telecom won because they presented all sides of the evidence showing that on balance the hazard was too slight to be a problem. The court even suggested that if the school believed their own case they could easily meet the most stringent radiation safety standards by fencing off a very small area at the boundary of the playground!

It was a mix of scepticism and suspicion that exposed the fraudulent research of Dr R P Liburdy, a scientist at the Lawrence Berkeley National Laboratory in California. In June 1999 the US Department of Health and Human Services found that Liburdy had been selective in his data analysis, rejecting 93% of his results because they disproved his hypothesis that cells suffer damage by low-level electromagnetic radiation and fields.

Returning now to the topic of nuclear energy. If a scaremongering Olympics was held the anti-nuclear activists would take out the gold medals. If ever a subject screamed out for healthy scepticism to scuttle the

Effects of Atomic Radiation) report dismissed serious health consequences from radiation in the majority of the population affected. This supports WHO estimates of fewer than a dozen cancer deaths to date attributable to Chernobyl following the initial radiation death toll of 28. Few of the approximately 1,800 cases of thyroid cancer found in children were fatal, since this form of cancer is one of the most readily treated and cured.

Incidentally, in 1990 as the guest of a team of Ukrainian scientists, I enjoyed a picnic with them in green fields beside their research station in the Chernobyl fallout zone. Within the station films were ruined by the radioactive fallout. But I'm still here ten years later to tell you about it. In fact Chernobyl has now become a tourist destination.

It is worth noting at this point that coal-fired power stations, even when operating normally, are known to be worse killers because of their large volume of pollution, including radioactive elements.

Mention of health effects suggests we should take a few moments to discuss another of the 21 myths.

Through relentless repetition it is widely believed that plutonium is the most toxic substance known. This is utterly false. Plutonium is not even in the top ten of dangerous *radioactive* elements, and as for non-radioactive elements it is well down the order of toxicity. When we expand from elements to their compounds the compounds of plutonium seem almost benign by comparison with, for example, common cyanides. Then there are the 'natural' killers like curare and hemlock that far outweigh plutonium compounds in toxicity. Yet groundless claims of extreme plutonium toxicity persist, in the face of all the evidence to the contrary.

Educating the media to stop perpetuating anti-nuclear myths will not be easy. Recently our Newcastle professor of biological science was reported as claiming that workers in a nuclear power plant suffer reduced fertility. As any good sceptic should, I challenged the professor to produce the evidence for his reported statement. "None whatever" was his terse reply, "I explained this to the reporter but he didn't understand." Maybe this could become myth number 22.

At some point in my advocacy of safer, cleaner nuclear electricity generation I should firmly dissociate my case from the military prostitution of nuclear science in the creation of weapons of mass destruction. Condemning nuclear power stations because of nuclear weapons is about as sensible as banning the use of glycerine in hand lotions because nitroglycerine happens to be a powerful explosive.

Returning to the nuclear wastes question, it is worth noting that all but about one percent of the world's nuclear waste has been produced by military weapon manufacture. The situation for Russian wastes is shown on a pie-chart copied from the American journal *Physics Today*. The relatively small amount of nuclear waste from civil reactors includes the contribution from the Chernobyl disaster. The American amounts are roughly half as large as the Russian figures.

The Greens' holy war against nuclear power is creating great difficulties in many countries wishing to abide by the Kyoto greenhouse gas emission targets. It is notable that the nations most able to meet reduced emission targets are those with nuclear power as a significant energy source. Germany is one, but Germany's Green politicians want nuclear power abandoned in favour of wind farms along the North Sea coastline. This can be seen as quite ludicrous when one notes the fact that the total world wind energy capacity at the start of this year was only 13.25 gigawatts (*AEN* 2000) - a little less than the coal-fired capacity of New South Wales! And that energy output is available only when the wind is blowing between 50 and 70 km per hour on every single windmill. Over a period of two hours on the calm day when I visited the wind farm at Crookwell only one of the seven windmills was lazily turning to produce only a trickle of electricity. Not what you might call a dependable source of power, but there is a place for it.

Australia is already failing to meet its very concessional Kyoto obligations and faces extremely difficult decisions over future energy supplies. The relentless anti-nuclear brainwashing campaign by the

Greens is not at all constructive. They may be winning hearts and minds by protecting whales and threatened species, but their "small is beautiful" doctrinal approach to energy supplies will sooner or later leave this country, and others, well and truly in the dark, unless the Greens' false claims are forthrightly rejected.

Here is a cause where sceptics can display worthwhile leadership in examining critically a matter of vastly greater importance for the future of our civilisation than investigations of ghosts and UFOs, fun though they are. Whatever the subject, is it not the avowed duty of sceptics to seek the evidence and shine a light in the darkness?

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...trust me from p 43

example believe that the person who saw the black swan is colour blind. It is impossible to prove a 'negative'. Thus those who believe in UFOs and complementary therapies are likely to continue to accept their own interpretation of observations and will not accept arguments of impossibility presented by others.

It is therefore my contention that Sceptics will only be preaching to the converted by pointing out the absurdity of the more bizarre beliefs in our society. On the other hand the world of medicine has the advantage that its practitioners, however conservative or stubborn, can eventually be persuaded to change their views. The majority of medical scientists follow Popper's advice to formulate their theories as unambiguously as possible so that they can be exposed to possible refutation. Sceptics should keep their ears to the ground, or possibly their eyes to the Net, and be aware of those areas where current medical dogma is being challenged. Your tendency to disbelieve and your capacity for logical argument may be put to very good use. It seems inevitable to me that many of our current medical practices will be seen as misguided or even harmful in the decades to come. It should provide fertile ground for true disbelievers.



FRINGE IDEAS IN THE MEDIA

Mark Newbrook

On 7/8/00 Channel 9's *Today Show* featured David Oates, back in Australia and again promoting his highly implausible and unsupported claims about Reverse Speech, which Jane Curtain and I debunked in 1998 with articles in *the Skeptic* and *Forensic Linguistics*. On 5/8/00 *The Weekend Australian* carried a feature article on the same matter. Neither piece contained any significant point of a skeptical or critical nature. The magazine article made a brief and inaccurate reference to our own work, but the gist of both pieces was pro-Oates or at best neutral. They represented Oates' ideas as intriguing and at least quite likely to be valid, and portrayed Oates himself as a rather heroic figure unjustly scorned by establishment scholarship.

Then, on 2/9/00, Channel 9 screened the now very old Erich von Daniken 'documentary' *Chariots Of The Gods* (note; no question mark here, unlike the title of the original book!). Admittedly, the opening titles described the film as 'based on the novels by Erich von Daniken'; but this inaccurate detail hardly affords the station a let-out! This uncritically promotional film ran in opposition to Channel 7's coverage of the AFL Grand Final, and in consequence it may have reached a relatively limited audience (mercifully!). But the next day (3/9/00), ABC screened a more up-to-date cousin of *Chariots*, the one-sided *In Search Of Lost Civilisations*, in prime time. This film promotes the hyper-diffusionist, Egypt-centred ideas of Hancock (who was prominent), Bauval, West and others, including the claim that the Sphinx is much older than orthodox scholars believe and the same vision of a now destroyed advanced civilisation which spread all over the Earth in prehistoric times. As usual, the facts and possibilities presented were carefully selected so as to support a pre-formed set of ideas. The extraterrestrials beloved of von Daniken no longer figure in so many of these fantasies - though note the resurgence of Robert Temple and his Dogon with their amphibian visitors from Sirius! But the Giza Pyramids and the ruins of Tiahuanaco looked much the same in 1970 and 2000, and the ideas put forward on 3/9 were only slightly more sophisticated and no more judicious. (One would hope for better from the ABC!)

In none of these cases were mainstream scholars or skeptical commentators given the opportunity to rebut the at times outrageous claims made. Channel 9 has ignored our repeated offers to put our case against Oates; in fact, the station has openly admitted that it has no interest in pursuing the matter further. *The Weekend Australian* eventually replied to our communications (letter dated 30/8 but not received until 11/9), indicating that they had received a great deal of mail about Reverse Speech after the original article and would contact us again if they decided to take the matter further. So far this has not happened.

Those who seek to promote ideas such as Reverse Speech or to revise ancient history are of course variously motivated, and in some cases they are very probably entirely sincere. But there is less excuse for the media controllers who allow these people to speak unchallenged by those with real understanding of the relevant fields. Maybe, as Barry Williams suggests, this involves misplaced feelings about the virtues of 'democracy'. Postmodernist relativism, an exaggerated respect for indigenous myth and the decline in the status of 'western' science and logic have all encouraged the view that the 'experts' are not the only ones to know about whatever is being discussed. The amateurs feel they have an equal right to be heard, even though their knowledge is typically much less complete than that of the 'hidebound' professionals who allegedly wish to stifle all opposition. (Of course, this is only rarely an accurate picture of what actually occurs in academia.) Often there is even an assumption that it is normal for the 'experts' to be thoroughly biased and indeed wrong.

And sometimes it is alleged that the mainstream has already had enough exposure, and that it is now the turn of its opponents. But only rarely does it appear that this characterisation of the situation is accurate. Most mainstream presentations in the popular media are so heavily focused upon communicating the excitement of genuine discoveries that they do not have time to debunk alternative fringe views - if indeed the academics involved are aware of the fringe in the first place.

By all means let fringe ideas be aired if they seem to warrant an airing. We are not seeking to censor them. That strategy is seldom justified, except where libel or public harm is at issue. And attempting anything that can be read as censorship (even if inaccurately) can easily backfire. In 1950 the attempts of scientists to have Velikovsky's catastrophist theories properly located in respect of the scientific thinking and methodology of the day were in fact interpreted as censorship and thus ended up by furnishing Velikovsky with public sympathy and indeed with support. But it is intellectually dishonest and socially irresponsible for media organisations to promote fringe ideas without serious challenge - or, sometimes, without even a reference to the fact that mainstream scholars disagree with them.

Of course, 'experts' naturally can be wrong, and indeed badly wrong. But they stand a far better chance of being right than an untutored amateur. And most serious scholars are in fact **more** amenable to modifying their views as the balance of evidence changes than are the gung-ho amateur advocates of revisionist theories.

In fact, these recent events are a sad reflection of the obsession of the media with entertainment at the expense of any concern for the truth. In the case of Reverse Speech, real harm is almost certainly being caused by

adherence to Oates' ridiculous ideas, and people are certainly being lured into spending money on activities and services which are at best useless. And even where the main concern is merely with the plausibility of statements about ancient history, it is surely better to be nearer to the probable truth than to fantasy.

Naturally, those who actually promote fringe views are even less likely to treat skeptical challenges in even-handed ways. At one stage Oates did make a great deal of being interested in comments from linguists and other scholars, but it rapidly became clear that he was in fact interested only in endorsement; when this was not forthcoming his reaction was belligerent. He does not always respond even to messages framed as genuine open-ended queries. In a similar vein, the well-produced British alternative science/history magazine *Quest* responded to my initial offer of critical comment by asking for a fuller statement with a view to a possible agreement on one or more articles/letters. I quickly provided this document, but the editor has conspicuously failed to pursue the matter further.

In the case of *Exposure* and *Australian Ufologist* (Queensland-based stable-mates), there recently appeared to be more hope. The new editor (who seemed quite open-minded) agreed to print my fairly long letter containing critical/skeptical comment on several recent articles. He also expressed interest in taking into account the comments which Jane Curtain and I made about some uncritical pro-Reverse Speech material which he published. But so far there has been no further action or even comment on this front - despite several emails from our end.

On 9/9/00, SBS screened the 1999 BBC *Horizon* documentary *Atlantis Uncovered*, a documentary much more critical than those discussed above; it featured the actively skeptical archaeologist Ken Feder. This one-hour item presented many of the objections of mainstream scholarship to hyper-diffusionist claims. There was a historical/archaeological bias, with the upshot that little was said about, eg, the geophysical objections to Atlantis; but in such a short time it would be impossible to rehearse **all** the relevant points adequately. There was also a degree of overstatement in places, for instance where the force of the argument based on the lack of similarity between the ancient languages on either side of the Atlantic was slightly (only slightly!) overstated. And the implication of racism, drawn at the very end of the program, was perhaps unfair to those who are sincerely (even if mistakenly) persuaded of the truth of such views by their reading of the evidence, rather than by preconceptions about ethnic superiority. But these are minor blemishes. On this evidence, the BBC and SBS can hold their heads high among those who respect logic and the truth, while several other media concerns would do well to keep low profiles!

On the other hand, after Hancock complained bitterly about the BBC documentary (see his web site for details), a second show was more favourable to his ideas. But the evidence and argumentation advanced in his support still appear weak. This demonstrates that even organs such as the BBC need to be carefully moni-

SEASONAL POESY

CHRISTMAS FOR ALL

Joan Vaughan-Taylor

*In modern times, it's very few believe
In moving stars and virgins who conceive,
Or wealthy kings who stride out in the snow,
To take a meal to one they'll never know
Or flying saints of quite substantial girth
Who drop some billion presents round the earth.*

*But recognising legends is no reason
For choosing to ignore the festive season.
Desires and memories are enthroned in myth
So celebrate them on the twenty fifth,
But also celebrate those real events
Of every human life, with reverence.*

*The miracle of every baby's birth
Calls for a celebration of some worth.
Discovery of fire for cooking food
Is something to inspire a party mood.
Some celebrate life's music with a throng
Of carollers and choirs with Christmas song.*

*The Christian, Muslim and the Buddhist too
The Atheist, the Jewish and Hindu
Can celebrate this date to make a mark
With shining candles in a world of dark
Predictions, poverty and fear
To light for all a happier new year.*



tored by skeptical historians and archaeologists. In other words, we must stay alert and keep our powder dry. And we must encourage our fellow-specialists not to ignore fringe material merely because they regard it as nonsense. Not **all** fringe thought is obviously nonsense, in any case. But, whether fringe ideas are sheer nonsense or merely questionable, the interested public deserves to hear the other side of the case.



BUT SERIOUSLY, FOLKS

Bob Nixon

In the first three parts of this series I focused on various aspects of the magazine's contents, the bits the readers buy the magazine for. In this final instalment I want to look, not for the first time in the pages of *the Skeptic*, the reason the publishers produce *Your Destiny*, the advertising.

Your Destiny is supported by, and one might argue they support, the telephone psychic industry. In any given edition of the magazine you'll find between 35 (in the very early days) to 75 different telephone psychic lines. They offer a range of speciality services, lines devoted to finding a successful relationship and lines devoted to gays and lesbians, for example. In general these services offer help with money, success and love. On no single advertisement will you find the words "For Entertainment Purposes Only", which is apparently becoming more and more common overseas as lawsuits are launched against failed psychics. One wonders how much influence such a message would have in any case, since the faithful know the truth is that some silly law requires such a message and the psychics on the other end of the line are both real and sincere. Why else, one asks, would they spend three hundred dollars an hour on these services? In previous reports in *the Skeptic* we have seen some of the techniques used by the more cynical of the operators, so I won't labour that point here. Instead I chose to spend a quiet weekend speaking with a few of these psychics armed with advice from an unlikely source, Simon Turnbull. Simon, the subject of other articles in *the Skeptic*, is the president of the Australian Psychics Association and was the very first person to offer telephone psychic services in this country. Simon was generous with his time as I was developing this phase of the investigation and I am very grateful to him. Simon's principal suggestion was that I make my questions as specific as possible. Given that advice it seemed to me appropriate to see just what problems telephone psychics were prepared to tackle.

Steve Colebrook, former president of the Victorian Skeptics, once tried asking half a dozen psychics whether or not his train would be on time the following day. This simple question had led to three correct and three incorrect replies, and I'd been surprised that the psychics had even chanced their arm. I guess it doesn't really matter what the question is, as long as they get their 90 cents a minute. I decided that I'd ask riskier questions. Each question was asked of a number of psychics, but each psychic was asked only one question. All but one of the psychics was female. Here are their scores:

I'm concerned for my boss at work. He's applied for a promotion and he's very anxious about it. Will he get it?

3 Yes, 2 No. One of the yes respondents then tried to engage me in conversation about my own future at work. In fact, my boss had already moved on to a new

position, though not a promotion (I was in fact boss-less when I asked the question). He was in fact promoted about three weeks after I posed this question to the psychics.

I've mislaid some important papers, and I need them urgently. Can you help me find them?

This question was asked of only two psychics since it was getting a little expensive by the time each of them went through what was in effect a process of elimination. I'd have to say that for this question, more than any other, I had the impression that the women were both genuinely trying to help me sort out my problem, but it was clear that no psychic ability was being utilised here, since each just offered a series of guesses and both, in the end, gave up when it was clear I'd looked pretty well everywhere. Only one offered me a flash of insight, suggesting that the papers would be found in or near my car.

I'm feeling unhappy with my life. When will things improve?

Once again, threats of an overdraft limited the number of calls I made for this question, this time to three. The first psychic was the one and only male I encountered and he seemed to want to focus on how many women I knew. He did not fill me with confidence in his abilities as a counsellor, far less as a psychic. He was far more comfortable telling me about his own life than he was talking about mine. I think he might have fared better with the boss's promotion question. The question of personal happiness should be bread and butter to your average psychic, so I was disappointed to find that both of the females I encountered on this question were less than able to advise me how I might turn my life around. I was asked if I drank very much, if I had ever had a girl friend, what I did for a living and a range of other fairly silly questions as the psychics tried to get a handle on what my problem was. I suspect their questions say a good deal about the other people who call these lines. All three psychics assured me that my life would improve "soon".

My daughter has been missing for eight months. Where is she? Is she safe?

That was the basic question I asked, but I had a great long story to go with it, entirely designed to give the psychic some real work to do. My 16 year old daughter (I have no children, in fact) had been happy, had taken nothing with her, and was last seen, according to the police, getting aboard a train that would have brought her home after a party. The implication I was trying to

continued p 51 ...

TRUTH AND THE TABLOIDS

Kathy Butler & Graeme O'Neill

A gorilla in the zoo awakens one morning to feel the first urges of spring. Bending open the bars of his cage he wanders through the zoo in search of a mate. Having been raised in captivity he has never seen another gorilla, so he breaks open the nearest enclosure and has his way with the sleeping occupant, a lion. Awakening, outraged at the humiliating attack, the lion takes off in pursuit of the now-decamped gorilla. The gorilla lopes ahead but knows he can't outrun the lion. He sits down on a bench and hides behind a discarded newspaper. "Hey, you!" says the approaching lion, "did a gorilla come past here?" "What?" says the gorilla from behind the paper, "you mean the one that raped the lion?" "Oh, no," said the lion, "don't tell me it's in the paper already?"

Here's a quiz for you: which of these is fiction, *Quantum* or *The X-files*? Easy! But what about the newspaper article by a science writer warning of the danger of eating foods "with genes in them"? Truth? Unlikely. It's hard to tell what is a learned, well researched print article and what is tabloid scaremongering, using second- or third-hand opinions posing as facts. The scary part is that most readers have no way of telling the difference. Our opinions are shaped by these reports and in turn Government policy, business practice, and even our eating habits.

Graeme O'Neill has written science reports for various publications for over 20 years, and despairs at the current fashion for editorial opinion posing as science. He spoke at the Victorian branch Science Symposium earlier this year. This article is an edited version of his talk. It is taken largely from his notes, which he kindly provided. If his remarks are misrepresented the fault remains with my interpretation of his notes.

Truth and the tabloids

There are three ailments increasingly blighting journalism generally today: ego, myopia and amnesia.

Ego: 30 years ago most newspaper articles were anonymous. It was a special acknowledgment of a piece well written for an article to have a byline. Today even first year cadets have their name on everything they write. How did this come about? The "personality cult" of television journalism has produced a need among some print journalists to counter the "TV-journo-as-guru": the Kerry O'Briens and Laurie Oakes'. They feel it is their right to inflate shallowly researched articles with their own editorial insight... such as it is.

Myopia: A particular problem in reporting science is that editors typically know less than their readers about the subject, and will rarely question the slant or substance of the reporter's article. This places a great onus on science journalists to get it right. On their judgement

may rest the paper's editorial policy on a very important subject. With such power to manipulate public opinion one would hope these journalists would consult at length with the scientists involved and familiarise themselves with the associated technology. Alas, we have front-line science journalists with no academic training in the field and a minimal grasp of science "informing" readers about the issues of the day – or copping out altogether and simply reflecting the community's prevailing prejudices and misconceptions.

Today's editors are as much businessmen as they are journalists, with many more interested in the bottom line than in-depth quality journalism. Their interest in science and technology is probably limited. Unless their readers have more than a high-school biology knowledge of science they will probably not recognise that the page 4 article on the dire hazards of eating gene-containing food offers no more intellect than the page 3 girl preceding it.

Amnesia: Tabloid journalism has a short memory, relieving editors of the concern of how history might judge their actions. Take the case of Luther Burbank, the man who produced and gave his name to the Russet Burbank potato. He also produced the Shasta daisy, after many years of diligently crossing several species of distantly related daisy. By combining plum and apricot, which never interbreed in nature, he produced the Plumcot hybrid. Burbank admired Darwin's descriptions of how crops and livestock had been improved by selection and crossbreeding, and embarked on a brilliant career as a plant breeder. Yet he found himself vilified in the press and damned by fundamentalist clergy for daring to meddle with God's perfect creations. Newspapers fulminated about the hazards of eating crops that breeders had genetically fiddled with. That was in the 1920s. It should sound depressingly familiar to the current debate over genetically modified foods. Hybrids do not kill people, nor bring the world to ruin. Today virtually all fruits, vegetables and cereals we eat are of hybrid origin, and are generally more productive, more disease resistant and equally nutritious as their predecessors.

For journalists, history means looking up recent files or databases. Since there is no quality assurance past errors and misconceptions are repeated and durable "truths" created. A classic example is the monarch butterfly episode in the United States. Corn crops in the US are susceptible to destruction by European corn borer, a pest notoriously difficult to eradicate by spraying, causing average annual losses of US \$1.2 billion. An increasingly popular corn crop has been engineered which produces a bacterial toxin that kills the borer. Tests show that its pollen, sprinkled liberally on nearby milkweed leaves also kills the migratory monarch butterfly. Numerous later studies showed that this was not

necessarily the case in the field and that it would have great benefit for farmers, but by then it was too late for the tabloids. Sensational stories are good for selling newspapers. The news that things are not so bad after all does not. Tabloid journalists seldom admit they are wrong, and there is great pressure on them to magnify the trivial to get an article published.

Mad cows & Frankenfoods: Every journalist will tell you that newspapers do not influence public opinion. This is wrong. The British press reporting of BSE (mad cow disease) is an example, as is the current furore over GM foods. Activists were able to get their opinion across, pursued relentlessly and sensationally by Fleet Street. The duty of objectivity and balance went out the door as papers fought to see who could frighten their readers more. These articles were written by both the experienced and inexperienced. The activists are very skilful. They know the weak points and know how to exploit them; often targeting ignorant journalists and steering clear of the professionals. The result is that the public image of science and scientists has taken a battering and the biotech industry in Britain has been put back at least a decade. In the war between the multinational food companies and the multinational green corporations, like Greenpeace, no one questions the commercial motives of the organics industry, or asks about safety issues, and there are some antibiotic resistance, pathogenic bacteria in animal manures.

The point I am trying to make here is that the social, health and economic consequences of the press getting it plain wrong, or wilfully or ignorantly misrepresenting what is really happening, are far from trivial.

In 20 years time, when GE crops are helping to feed 8 billion people and keep the environment from ruin, everybody will have forgotten the furore, and tabloid journalists will be getting it comprehensively wrong on some other important issue.

But this is a particularly big one, at a critical time in history. When 22nd century historians look at the role of the press vs the role of the scientist in the terrible famines and environmental disasters that blighted the first half of the 21st century, I know who they will judge most harshly.

...Seriously from p 49

give was that the girl had simply gone missing and the outlook was not good. I mentioned the involvement of the police only in passing. This question was posed to two female psychics, and was the real test of just how far a psychic would go to make a buck. The first call lasted fifteen minutes as the psychic struggled to get an answer for me. I was told my daughter was safe and happy, but not where she was or who she was with. The second call lasted about forty minutes. The psychic, who sounded elderly, asked me a lot of questions, and wanted to focus on what the police had told me about the girl. My impression was that the psychic was fishing for clues that might jog her memory about a news report. At one point she even offered the information that she had not read anything about the story. She also announced that my daughter was safe and well at the end of the call, but asked me where I was calling from and gave me the name of a psychic here in Melbourne who might be able to help me further.

These then are the sort of people that *Your Destiny* does business with. If any of them picked up on the fact that I was just making things up they chose to ignore it in the interest of free enterprise.

Do the publishers of *Your Destiny* care that their advertisers provide such a service? Do they even bother to find out?

Senator Brian Harradine, in a deal with the Federal Government managed to have regulations imposed upon sex lines. Callers must now be registered before they can use the service. Psychic phone lines have no such restriction. One might argue that men are prevented from indulging their expensive fantasies, but women (who make up the bulk of customers of psychic lines) are permitted to waste their money. *Your Destiny* is a fundamental part of this industry, not only because the magazine accepts advertising from it, but even more so because it supports, without question, the idea that psychic ability is real and can help. The articles, the regular columns and the editorial direction are all geared towards assisting those who might be questioning or troubled to accept a paranormal or even downright silly explanation. The psychic lines are making money hand over fist with the help of *Your Destiny*, and one suspects that *Your Destiny* is just as successful, and for the same reasons.

¹ The psychic receives 90 cents, the rest is split about evenly between the service provider and Telstra.

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A LITTLE LEARNING IS A DANGEROUS THING

Mark Newbrook

Proof of Vedic Culture's Global Existence, Stephen Knapp; World Relief Network, Detroit 2000

This book is an extreme manifestation of a genre of non-mainstream work which supports the traditional Hindu belief that India was the centre of Asia's or Earth's oldest civilisation. On this account, culture diffused from an initial base in India in early historic times. In its more moderate forms, this tradition involves quite high levels of scholarship, but the Indian authors are often rather 'one-eyed' and their historical theories are often closely linked with religious ideas. The notions in question have a strong nationalistic appeal to some Indians.

A common theme in this tradition involves the Sanskrit language, in which the Vedas (the most venerated Hindu scriptures) were written. Sanskrit is one of the earliest attested Indo-European languages. It is the ancestor of Hindi and various other modern North Indian languages. The orthodox position is that Sanskrit was brought into India around 3,500 years BP (1500 BC) as part of the local European/West-Asiatic diffusion of Indo-European from a base somewhere near the Black and the Caspian Seas (dated around 5-6,000 years BP). The nonstandard view promoted in this Indian tradition - notably by Sethna - upholds the truth of legends interpreted as placing Sanskrit in India much earlier (7-8,000 years BP at the latest, sometimes still earlier). Indeed, Sanskrit is said to be much closer to Proto-Indo-European than is thought by most modern historical linguists, and in fact the usual claim is that Indo-European actually originated in India and spread westwards. However, this is almost certainly wrong: it is clear that Sanskrit had undergone major changes of its own vis-à-vis Proto-Indo-European, and was especially close to it only in some respects.

Knapp's book is considerably less scholarly than Sethna's; it is also more accessible and more readily available (eg, it is advertised in *Nexus*). It thus has the potential to mislead. Knapp himself is a convert to Hinduism and a fervent promoter of these ideas. He does not seem interested in serious debate with those who call his main theses into question. Under pressure from me, he talked in a quasi-relativistic way, suggesting that this is all a matter of opinion; he has his and I have mine (implication: there is no way of showing that he is wrong).

Briefly, Knapp argues that Vedic ideas, together with the Sanskrit language, were once spread all over the Earth by a technologically advanced Hindu civilisation which provided the impetus for civilisations from China to Peru. These ideas still offer humanity a common religious and cultural heritage which should be embraced by all. Knapp overtly denies the mainstream theories outlined above. For instance, on pp 8-9, 70, he argues (on largely specious grounds) that Proto-Indo-European

- as distinct from Sanskrit - never existed, and indeed that Sanskrit is the ancestor of **all** languages! And on p 12 he asserts that conventional linguistic methods cannot be used to date Sanskrit, because it is 'neither mundane nor human'. Like Vedic 'knowledge', it was literally given to humanity by the gods (p 9).

Knapp's main positive evidence for the Vedic world-view involves: (a) his sources (often themselves suspect); (b) the exegesis of complex Hindu religious texts; and (c) esoteric knowledge which he allegedly acquired under the guidance of a 'master'. He and his sources make extensive use of language data by way of support for their historical claims. However, Knapp is not well informed in this area, and most of his linguistic claims are simply wrong.

In fact, Knapp's historical linguistic reasoning is similar to that of the various historical revisionists discussed in my article in *the Skeptic* 20:2. He identifies superficial similarities between Sanskrit words on the one hand and words in English and other languages on the other, and deduces that these words have a common origin. Because of his main theory, this amounts to claiming that the non-Sanskrit words are derived from the Sanskrit words, and Knapp makes this explicit, sometimes using terms such as *corrupted* and even *perverted* to describe the changes which he thinks the words have undergone. Most of these links are simply asserted as facts, with no supporting evidence.

As readers of my earlier piece will be aware, such cases are in fact much more complex and uncertain. One cannot rely on superficial resemblances of form, even when accompanied by similarity of meaning, in establishing etymologies. It can be established that words are **cognates** - that they descend from a common ancestor word in a common ancestor language - only if they display systematic correspondences in their pronunciation, repeated over large numbers of word-sets. See my article in *the Skeptic* 20:2 for more on this.

Most of the equations given by Knapp are known to be invalid. The words in question are typically known not to be cognates; their etymologies are established. In some other cases, we simply cannot be sure of whether words are cognates or not; there is insufficient evidence, and there is no particular reason to believe Knapp.

In some cases here, the Indo-European roots from which a complex English word is derived do appear in Sanskrit. But in most such cases the English word is clearly derived from Indo-European via Germanic, or else from the Latin or Greek forms - not from the Sanskrit forms. For instance, Knapp identifies English month names such as *October* as derived from their Sanskrit equivalents (p 78); but in fact they are clearly derived from familiar Latin forms, with which the Sanskrit forms are themselves cognate. More examples are on pp 30 (mostly medical terms), 78. He also claims

(pp 69-70) that Greek borrowed many words etc from Sanskrit (in fact, the forms he identifies are simply Indo-European cognates).

In other cases, the Sanskrit forms which Knapp proposes as the sources of the words are not even cognate with the known roots and have different meanings. One such case involves the name *Australia*, which is transparently from Latin, where it means 'southern' (land, etc). On p 76 Knapp states that it is from Sanskrit *Astralaya*, meaning 'land of missiles'; he suggests that the pilots of vimanas practised firing their missiles in Australia, thus creating the deserts! (Vimanas are flying vehicles used by Hindu gods, here interpreted as actual aircraft; the technological knowledge involved is said to have been lost in a later period of decline.) Further examples of this kind follow:

Aryan is from *arya* 'gentleman' and/or (both?) *ar* 'white' + *ya* 'God' [p 1]; it refers to

those who follow Vedic teachings, not to a 'race' or linguistic grouping

fever is from *jwar* 'fever' via *jever* [p 30]

America is from *Amaraka* 'land of immortals' [p 56]

Riga (capital of Latvia) is from the root *rg* as in *Rg-veda*; in fact, Latvian is

'based on Panini's Sanskrit grammar' [p 68] (Andis Kaulins would be delighted!)

Harry (as in *Harold*) is from *Hari* (*Krishna*) [p 76]

Nippon is from *nipun* 'dextrous' [p 76]

Alps is from *alpas* 'small' (by comparison with the Himalayas) [p 77]

time is a 'corruption' of *samay* 'time' [p 77]

ante-meridian and *post-meridian* should mean only 'before' and 'after' respectively (false: *meridian* means 'noon', from Latin); *a.m.* / *p.m.* really derive

from *arohanam/patanam martandasya* 'rising/falling of the sun' [p 78]

dictionary is from *deekshantary* 'aid to resolving difficult words' [p 79]

management is from *manjement* 'person devoted to running a concern' [p 79]

entrepreneur (really from French) is a 'perverted' form of *enterperitnar* 'person who through inspiration begins a commercial venture' [p 79]

Anglesea (in Wales) is from *Angulesh*, a name of Vishnu [p 145]

England is from *Angulisthan* 'finger-sized country' (ie, in comparison with Europe, seen as a palm) [p 145]

Britain is from *Brihatsthan* 'great islands' [p 145]

The first syllable of *Ramsgate* (in England) is the name of the hero *Rama* [p 146]

Salisbury (in England) is from *Shaileeshpury* 'hill with Vedic temple' [p 146]

Canterbury (in England) is from *Sankarpury* 'township of Sankar' (*Sankar* is a name of Shiva) [p 146] (the linguistics is especially incoherent in this section)

Ascot (in England; famed for horse-racing) is from *Aswacot* 'city of horses' [p 147]

Catholic is from *sadevalik* 'temple devotee' [p 147]

Pope is from *papa-ha* 'absolver of sin' [p 147]

Deutschland is from *Daityasthan* 'land of the Daitya clan' [p 158]

Hungary is from *Shringeri* 'hilly region' [p 161]

Budapest (actually two city-names, *Buda* + *Pest*) is from *Buddhaprastha* 'city of Buddha' [p 161]

Spain is from *spand* 'pulsating' (it was allegedly a vibrant Vedic centre) [p 161]

Pythagoras is from *peeth guru* 'teaching guru' [p 169]

Korea is from *Gauriya* [p 235]

Knapp 'finds' other words derived from Sanskrit in various ancient and modern languages of the Middle East and Europe, and also in Arabic, Hebrew, Malay, Vietnamese, Khmer, Japanese, Quechua ('Inca', as Knapp calls it), etc, etc. He also makes a number of other wild statements about language.

In answer to my initial criticisms, Knapp wrote: 'Some of the comparisons may not seem to be accurate from a scholarly point of view, but nonetheless, many of them do contain elements that are consistent with natural change of speech and language over the course of time'. But writers like Knapp, who have clearly not studied historical linguistics, are not in a strong position to judge what is or is not a convincing etymology or equation of forms, or what is or is not consistent with 'natural change of speech and language over the course of time'. These are, in fact, quite technical matters in which the layperson's impressions do not count for much. Where Knapp's comparisons do not 'seem to be accurate from a scholarly point of view', they are very probably invalid. Even where there is less evidence and the Sanskrit etymology which he proposes is possible in principle, that does not mean that it is correct. Very many other equally 'valid-looking' similarities **not** involving Sanskrit could equally well be set up.

And this is not merely a matter of 'points of view'. These are empirical issues. Where Knapp and I propose different accounts of events, at least one of us must be wrong. And Knapp is in conflict here not only with me, but with the vast majority of historical linguists (and ancient historians) – and with the empirical evidence.

In fact, Knapp's work proceeds as if this tradition of serious historical linguistic scholarship did not exist. This is just wrong; we have been studying these matters intensively for 200 years. We might be mistaken, but we are neither stupid nor ill-informed. Anyone making radically different proposals must argue persuasively that those proposals make more sense than does the scholarly consensus. Nationalistic or religious fervour and a smattering of learning are not enough.

Indeed, Knapp's linguistics is as bad as I have seen in recent books. I have given his outlandish work more attention than it deserves because I am outraged at this abuse of my discipline. Most readers will not recognise Knapp's linguistics for the nonsense that it is. According to an account given by Knapp (p 161), the Bulgarian government has been taken in, instituting Sanskrit classes in many schools on the ground that Bulgarian is 'replete with Sanskrit words'. I am also alarmed by Knapp's non-linguistic ideas, especially his attacks on mainstream historians and archaeologists, his negative views about non-Hindu cultures, and most of all his idea that non-Hindus are very likely to be immoral and indeed prejudiced against anyone outside their immediate families, 'mak[ing] no elevating con-

continued p 55 ...

WIND BENEATH HIS WINGS

The God & Devil theatrical extravaganza

Michael P. Jones

They are a cosmic Laurel and Hardy. The Abbot and Costello of the afterlife. Individually as a performer God's not much to write home about, just another Deity trying to cut it with the undoubtedly tough audience of the Human Race. But together with his partner The Devil they are something else, the ultimate double act that has left numerous theological entertainers forgotten in their wake. God is the name on the poster, the draw card, the key attraction and The Devil is his straight man.

It is a performance formula that has worked through the ages. But it is also one that has led repeatedly to dissatisfaction between performers. For inevitably one half of the duo must be the wind beneath the other's wings, forever in the shadow, unappreciated. The Devil is this shadow, he is the wind beneath God's wings and for too long his contribution to God's production success has gone unappreciated.

The notion of Good versus Evil in story telling is as old as human history itself. A theological and moral construct that has existed in many forms across all cultures, races and performance media. God on one side, The Devil on the other. It is war that has been fought on many levels, with various means and differing intents. Coercion, supplication and force, economics, culture and race. Many have been the ill performances committed with God in mind against the spectre of The Devil. Who could forget the fun and games of the Spanish Inquisition, the Crusades and the plethora of Missionaries bearing gifts of small pox and the flu to the otherwise happy indigenous people of remote lands? Not to leave out more modern, subtle variants such as those committed by Televangelists every Sunday as they appropriate the life savings from the lonely and the old.

Yet despite how hard God-Fearing people might fight these battles, desperate it seems to convince people that the figure sharing the stage with God is not adding to the show in a productive way, it is an argument God can't afford to let his followers win. If Laurel had gotten the shits with Hardy and bumped him off with a nitroglycerine loaded cream pie, he would have very quickly seen his career slip away into the void. So too should God recognise that without his partner there's no reason for the audience to show up.

God needs the Devil. He is fundamental and crucial to a Judeo-Christian Gods' social relevance. For without a penalty for lack of faith, a punishment for not following a particular path, how can the Judeo-Christian God, which is, by comparison to some other theologies, a young (some would say prepubescent) God, hope to compete for an audience.

Devils have always existed in human mythological theatre as much as Gods have. From our most primitive societies come tales to scare children of wicked

creatures and spirits set to do them harm. This is the foundation from which the Devil built his career prior to teaming up with God. Here The Devil was quite able to hold an audience's attention on his own merits.

But there are fundamental differences between this Devil and the Satan we see sharing the stage with God, performing cabaret excerpts from the Bible.

Most indigenous cultures across the world were polytheistic or animist in nature with a mother earth as a nucleus in representation of the natural world; in many ways a creator not unlike the Judeo-Christian God. Indigenous cultures of Australia and North America being prime examples of this. To these societies evil and wickedness was known, but the character The Devil played in these arena was closer akin to that of a trickster and mischief maker. More a pain in arse than the enactor of grand and insidious punishment for all eternity.

Indeed, even in the early days of their careers together, The Devil was able to retain his old role in his performances with God. In *the Old Testament* The Devil is called a *Shatan*, Hebrew for 'Opponent', and he played a greatly different role to that of our modern perception of the Devil. In these early performances as a *Shatan* the Devil played an accuser or prosecutor in God's heavenly court. This role is further supported by the definition of the name *Beelzebub* (another of The Devil's numerous stage names) which derives from the Assyrian *Bel-dababi*, which translates as 'adversary in court'. In the famous *Job* scene from *the Old Testament*, performed somewhere between four and six hundred BC, God commands and permits The Devil to test the faith of *Job* so that He may prove *Job's* worthiness and utilise him as an example to the world. In this capacity The Devil's role was crucial to God's performance and subsequently to the audience's appreciation of God.

But soon the role The Devil played began to evolve and by the time the iconic sequel, *the New Testament*, was staged he had become the character he is best known for, that of the enemy and antithesis to God. Despite this shift in character motivation however, the action actually remained consistent. The Devil was still enactor of God's punishments as in *the Old Testament*.

In the first scene of the fourth Act of *the New Testament* the character of Matthew says "Then was Jesus led up of the Spirit into the wilderness to be tempted of The Devil". Here The Devil makes his bold entrance and attempts to tempt Jesus in various forms to prove himself. It is pivotal scenes like this were we get such great lines as "Man does not live by bread alone". The Devil rarely receives credit for the set up of this great moment in entertainment.

But where the shift in perspective did have it's most profound effect was on God's marketing strategy which

lead to a new approach in attracting audience members. Conversion.

Time passed and the show increased in popularity and began to tour to new lands. It was carried to venues that had only previously known the old Devil show and the audience's understanding proved to be very different to that of the western Christian audiences. This proved inherently problematic because the indigenous people were outside the usual sphere of religious social influence. A big Church made of marble means little to hunter-gathers living subsistence lives. Adopting an ideology of a single God is of little attraction to hunter who has a multitude of animistic gods just to service his hunting success.

In the western world Christianity gained its following by hawking a story that had a tangible conflict to struggle against. It was a political piece, a stab at the ruling Jewish aristocracy of the time and a commentary on Roman occupation and the economic subjugation that goes with it. But these cornerstones by which the production had propelled itself thus far, no longer applied in the strange new worlds into which they now toured. Christianity needed a new angle on the story to get the bums on seats. It was crucial that the show possess a direct means to negate the local theological productions; for otherwise the Christian God Show could too easily be absorbed into the encompassing polytheistic theological entertainment of the indigenous people. God might have become just another performer among a plethora of deity performers fretting and strutting their hour upon the stage to be heard no more, panned by the critics and closed after a few weeks to go off-off-off Broadway.

In simpler terms God needed to give these primitive cultures a very good and very tangible reason for them to buy tickets to His show and His show alone. And the greatest coercive tool known to mankind is Fear and the Devil was the perfect enactor of that marketing strategy. Dostoyevsky in his iconic novel *Crime and Punishment* comments that "When reason fails, the Devil helps."

The use of The Devil as a tool for audience manipulation and social adherence did not end with the *New Testament*. The technique was put to great effect in numerous spin off shows. At its most crass it came in the form of the popular game show *Inquisition* and involved torture, confessions, public humiliation, the usual fare of sensationalist entertainment. But more widespread and accessible were the 'Mystery Plays' (otherwise known as 'Miracle Plays') These theatrical dramas, expounded and produced by the Church, were for the most part stories of the penalties and benefits of Christian religious servitude. Hanging on the coat tails of the God and The Devil main-stage, they were performed in the streets of towns and villages for the general public and in many ways form some of the basis of western theatrical understanding. Shakespeare himself owes a great deal to the theatrical tradition developed by this practice.

These plays, borrowing from the Ancient Greek tragedies which form the basis of all Western drama, relied heavily on the aspect of group dynamics and spectacle. It was not uncommon for these plays to involve elaborate and ghastly costumes, trap doors and primitive

special effects all designed to warn the public of the dangers of temptation, of sin and the punishment of Hell. Almost all of the original Mystery Play texts have been lost to us but their derivative legacy is seen in stories such as *Faust* and Dante Alighieri's *Inferno*. The latter dealing with the various and insidious punishments of hell as the protagonist of the story, Virgil, travels through its downward circling layers bearing witness to how differing sins are punished in the after-life. The structure which Dante uses in his story is directly appropriated from that expounded by the Church in the Mystery Plays of the Medieval period and owes a great deal of its popularity to the Fear marketing strategy pioneered by the original God and The Devil production.

The Devil has played the role of the antithesis of God since he, as the character of Lucifer, was cast out of heaven. He has repeatedly been the fall guy for God's dramatic standing but upon examination of the scripts, it can be seen that it is not actually the Devil that punishes. Satan is merely carrying out the wishes and directives of God. It is God that punishes in the sense that disobeying Him and His ordinances will result in going to Hell rather than Heaven.

James Joyce in *Portrait of the artist as a young man*, describes the fires of Hell as "a fire which proceeds directly from the ire of God, working not of its own activity but as an instrument of divine vengeance." Thus the term 'God-Fearing' instead of 'Devil-Fearing' for it is The Devils' job only to enact the punishments of God.

What's more, by using The Devil as the focal point of fear in His great tragedy, God is able to disassociate himself from what can be considered little more than Mafia stand-over tactics. (God and *The Godfather* have more in common than just a name) In essence The Devil has become a performance scapegoat.

Without the Devil as his off-sider to play the straight man, God's performance and audience attraction would be rendered pitiful and would be unanimously panned by the critics.

God owes more than a great deal of gratitude to The Devil for artistic and commercial success. Without the Devil's wind beneath God's wings God would surely fall and disappear into that void from which all mediocre performers go. Do not be surprised if in the near future The Devil decides to break ties and go solo. I wish him luck, he's earned it.



... A little learning from p 53

tribution to the rest of society' (p 2). I see it as part of my responsibility as a scholar to speak out against such misleading and offensive material.

In addition, it should be pointed out (a) that many of Knapp's non-linguistic arguments are also weak, and (b) that, even if his historical claims were correct, it would not follow that the Vedic view of the universe is itself correct.



Interstellar romanticism

Paul McDermott

In the last issue (20:3), three readers discussed the ideas presented in my article *Demotion Versus Devotion: Sagan, SETI and Pseudoscience*. I'm grateful they found the article interesting enough to do so, and also to the American reader who engaged me in a series of stimulating and supportive emails on SETI.

As should already be clear from my article, I have no personal axe to grind against SETI. What I have tried to do is understand the enterprise on its merits. Where I found intellectual woolliness, I indicated this was so. My readings suggest SETI skepticism is uncommon. I think a popular romantic wellspring may exist for what SETI claims to be able to do, a meme that inhabits the minds of the priests and supportive laity alike. SETI is symptomatic of both the scientific culture and the irrationality that marks our era.

That SETI@Home latched onto the *Star Trek* audience is certainly instructive though the processing power could be better used by something like Folding@Home instead, with its links to medical research and molecular nanotechnology. The quality of SETI's science ought to count, not least because its ardent practitioners and supporters want their work to be accorded similar status to inquiries into basic physical properties of our universe.

Like a few other observers such as A K Dewdney, I consider that to be unwarranted. How to test the theory matters, yet to date the SETI community has employed such flabby means. At the start of a new century, serious revision of the theory itself is in order. Yet I see no such work, only more sophisticated technological embellishments.

Though it may inspire wonder, SETI is more sentimental than scientific. It shouldn't be left unchallenged. Although most in the SETI community probably do think their work serves a noble end, I don't see how their method can satisfactorily hope to answer their driving questions. It tries to do too much with too little. It would be more rational in my view to patiently follow through in those areas of applied science where helpful scraps of data might be obtained that can tell us a little more than we cur-

rently know. Why put the cart before the horse? What's the rush?

As the practice currently stands, there is no need to ever end SETI's 'quest'. Marshall mentions 'at the end of the day' for an exhaustive SETI search - is this likely to be before or after the Last Trump? An exhaustive search will take a very, very, very long time, but I have yet to discover any failure criteria for SETI. Given the uncritical zeal of people like Frank Drake, the next fifty years will result in simply more of the same if SETI continues as it has until now. Better and far more interesting methods than SETI for gaining useful data about the prevalence of life beyond Earth do exist.

Ongoing curiosity-driven inquiries in the fields of radio astronomy, astrobiology and planet-hunting are important and deserve to continue. Yet it is an incredible leap of faith to go from (for instance) the dubious lineage of a small rock found in the Antarctic to suggesting that this has any significant positive bearing on the practice of SETI.

I do not categorically rule out the prospect of intelligent alien life or of humans encountering it. Some biologists (such as Jared Diamond and Leonard Ornstein) give very long odds on the existence of such critters, and not without good reason, but I will concede that on this matter we cannot be too sure either way.

I'd hardly call that good news for SETI, however. Intelligence comes in all kinds of flavours, not just technological. Yet suppose this sort is out there, as is hoped. Ultimately, if we are to survive as a species, our future must involve space travel. Not only to avail ourselves of the mineral wealth at our disposal, but to explore and expand beyond the home system. When it becomes cheap and easy to do, I am pretty sure that it will happen, even if only missionaries and *Star Trek* fans bother at first. This has a great deal of relevance to SETI. If humans physically traverse the galaxy and beyond, we are probably more likely to encounter alien life forms - be they intelligent or not - than by fumbling with radio using crossed fingers.

By this route we return to Fermi's paradox: why is there is no credible evidence of any ETs doing the same?

The SETI community has yet to offer more than desperate guesses that unreasonably restrict the diversity and intelligence of the life forms they hope to find.

So for the time being, it seems that we are (at least) the only intelligent radio broadcasters around. I find myself wondering how terrible that is. We've managed for thousands of years without extra-planetary neighbours, as best we can tell. SETI in its present radio-telescoping mode seems unlikely to accelerate a discovery of this nature. Until we happen upon ET, I think humanity will continue to manage on its own. In the meantime, we've always got Hollywood.

It is also quite a stretch to accept that SETI's technological spin-offs merit its' continuance. Were they so voluminous it would hardly need to rely on charitable donations to exist. Nor can I see why SETI's refinements of hardware are unlikely to be duplicated by large, wealthy corporations devoted to serving the telecommunications sector. Where a genuine need exists to surmount a given problem in engineering, I am confident that the market will continue to provide. Is it to be supposed that SETI researchers are capable of feats that others aren't or that their technology is of a qualitatively different nature from anyone else's?

Finally, I would like to turn to some specific points in the respondents' writings. Marshall uses a lot of needless sociological garnish. Does he suppose that my qualified support for Senator Proxmire in one respect indicates a wholehearted concordance with all of the man's actions? Even in 'scientific circles', I think my point was far from 'dangerous'. Brown has the advantage of me over neutron stars. I have not had time to check his claim and welcome a reference or two to do so. Like Marchant, I accept the many decades of ET silence do appear to put some general bounds on the prospects for the existence of those classes of alien life who are radio broadcasters in those parts of the galaxy that have been targeted to date. It does seem a pretty small return for the investment, given Fermi's paradox remains downplayed yet essentially implies the same thing. Although I suppose that it

continued overleaf ...

A Matter of Coconuts

Alan J McCutcheon

The Pi-ous marsupial, Sir Jim (20:3), quoted Steve Roberts (on negative integers) who asked "Have you ever seen -1 sheep?". That query stimulated the following reminiscence.

Many years ago, long before the fruiting of personal computers, I came across the old problem of the sailors, the coconuts and the monkey. Five intrepid sailors find themselves trapped on a Coral island with a largeish pile of coconuts, and a monkey. For reasons of survival, and mistrust, they decide to divide the pile of coconuts evenly among the five to allow each sailor to manage his share as he wishes. Having decided to share out the coconuts the following morning, they bed down for the night near the pile. Later, the first sailor awakes suddenly with the thought that there might be foul play afoot later on, and

... Romanticism

might make little difference, I would prefer to see SETI fund-raisers give a clear indication of flaws in their work to potential donors. As I see it, they are trading on public misperceptions of the enterprise. SETI's links with schooling in Australia (and elsewhere) are probably going to raise support rather than reduce it. I was amused by the description of Marchant's alcohol-fuelled lunar study. I think he'd agree with me that it's unlikely to attract the sponsorship of any serious research body, as it does nothing to advance or systematise our present knowledge of astronomy or viticulture. However, it is a good deal cheaper and humbler than SETI.. Perhaps the SETI hypothesis is so bad it isn't even wrong. Presently, however, that seems to me to be unlikely in light of the evidence to hand and so an insufficient reason to continue. Those who are keen on finding other life could be better off by direct their efforts towards basic research in areas like astrobiology, planet hunting, space travel and encouraging the push for off-world habitation. It might not hurt to direct some funds towards medical research too, for potentially extending one's life-span in order to see first contact, should it ever come to pass.

that he'd better make sure of his share beforehand. He goes to the pile and counts the coconuts, finding that after he gives one to the monkey, he can divide the rest exactly into five equal portions. He removes his fifth share, takes it away to hide, and returns to the camp and goes back to sleep. Over the course of the (fortunately) long night, serially, every other sailor awakes in turn and does the same thing, ie visits the pile, gives one coconut to the monkey, takes away and hides exactly a one fifth share without splitting any coconuts and returns to the slumber camp.

In the morning, no-one comments on the size of the pile as no-one wants to draw attention to his somnambulist activities. None knows of the others' actions, and all have been mathematically honest about their nocturnal (long) division, if about nothing else. The monkey looks very pleased. With due ceremony they gather at the pile, divide it into five equal shares and find one coconut remaining which they give to the monkey.

As I recall it, the problem to be solved was how many coconuts were in the original pile on the evening before the depredations took place. A schoolboy at the time I met the problem, I turned immediately to algebra and postulated that if x was the final share distributed to each sailor in the morning then the pile before that division contained $(5x + 1)$ coconuts, and the pile before sailor 5's division contained $(25x + 9) / 4$ coconuts, and before sailor 4's raid it comprised $(125x + 61) / 16$ coconuts, and just before sailor 3 awoke it had $(625x + 369) / 64$ coconuts, and sailor 2 found a pile of $(3125x + 2101) / 256$ coconuts left by sailor 1. The original pile thus had $(15625x + 11529) / 1024$ coconuts in it. Without computer or calculator I had great difficulty finding x such that each of the piles after a raid had a whole number of coconuts in it. About 15 years later, my first Apple computer enabled me easily to find that the smallest answer to the ques-

tion as posed was 15621 with a value for x of 1023.

As a corollary to the original question, I understand that a separate set of 5 sailors, coconuts and monkey found themselves on a Moral island which was almost identical to the original. The same plans were made and acted upon, with the exception that one of the sailors suffered a twinge of conscience and returned his stolen share, but not the monkey's offering, to the pile before morning and after at least one of his fellows had raided the pile subsequent to him. Of particular interest is that despite the starting coconut population being different from the original island, one of the sailors found he received exactly the same number of coconuts in total as the corresponding sailor on the original island. On both islands the coconut population was the smallest possible for the conditions. Readers may be able to work out which sailor had the twinge, at which stage he revisited the pile, which sailor received the same total number of coconuts, and how many.

Some years after hearing of the original solution, I read of a deliciously elegant solution involving negative integers. This solution specified an original pile of -4 coconuts. At each visit the pile mathematically can be divided into 5 equal piles of -1 coconut, leaving one positive coconut for the monkey. When a sailor takes his share of -1 coconut, there are -4 coconuts left. However many visits are made during the night, the pile never changes in magnitude as the monkey's positive share is always balanced by each sailor's negative share. The symmetry of this solution has always appealed greatly to me, despite the mental gymnastics required to consider the concepts involved. No, I have never seen -1 sheep, but I have spent a good deal of time, and had much pleasure, thinking about negative coconuts.

[PS: On the Moral island, sailor 1 changed his mind, and revisited the pile after sailor 4 and before sailor 5, and sailor 4 received 2622 coconuts on both islands.

Mead-Freeman: the never-ending controversy

Once again Derek Freeman has argued that Margaret Mead was "hoaxed" about Samoan sexual conduct by two young women. He believes that his recent "discovery" of an autobiographical chapter by Mead (1931) provides "direct evidence" of the alleged hoax in her own words. Yet Freeman quotes only a single potentially relevant sentence from her chapter in an adventure book written primarily for young women. In this sentence, Mead states that she became acquainted with "the Samoan girls" and received "their whispered confidences". Freeman interprets this sentence as "definitive historical evidence" of hoaxing by taking these very general phrases and assuming that they have very particular meanings.

Freeman assumes that the phrase "their whispered confidences" refers to innocent lies about sex allegedly told to Mead by two young Samoan women, Fa'apua'a and Fofoa. However, in Mead's chapter there is no discussion of sexual conduct; "their whispered confidences" does not refer to any particular aspect of Samoan culture, but rather to the more general subject of Samoan chiefly etiquette and how Samoan girls helped her learn it. Freeman also assumes that "the Samoan girls" refers exclusively to Fa'apua'a and Fofoa, but the phrase is used elsewhere in the chapter without reference to these two young women. Thus there is no "direct historical evidence" of hoaxing in the chapter.

Freeman first claimed over a decade ago that Fa'apua'a's sworn testimony showed Mead was hoaxed. Martin Orans (1996) effectively questioned this argument by noting that if Fa'apua'a, herself a ceremonial virgin (or *taupou*), had told Mead that girls "spent nights with boys", and if Mead had believed her, then Mead would have written in *Coming of Age in Samoa* that ceremonial virgins engaged in premarital sex. Instead, she wrote that the entire village protected the virginity of *taupou*. Therefore, while girls may have told Mead innocent lies, there is no evidence in Mead's writing that she believed them. Hence there is no evidence of successful hoaxing.

In his most recent book, Freeman (1999) claimed that a letter from Mead to Boas provided new "smoking gun" evidence of hoaxing. Orans (1999) demonstrated that Freeman had selectively quoted the letter, omitted a critical portion of it, and thereby misread it. Again, there is no evidence of hoaxing. Now Freeman is offering Mead's 1931 chapter as new evidence of hoaxing, but Freeman, once again, has selectively quoted and misread the evidence.

Despite the lack of evidence for hoaxing, Freeman believes the controversy has reached closure, and he seems gratified that the Intercollegiate Studies Institute, a small, conservative American think tank, has deemed *Coming of Age in Samoa* the worst non-fiction book of the 20th century. The ISI, along with Freeman, may wish to believe that Mead's book was an intellectual disaster; they are free to do so. However, the institute's use of Freeman's deeply flawed argument about hoaxing does not add to its credibility any more than it does to Freeman's. It is simply a reminder of how unskeptical otherwise intelligent people have become.

Freeman, Derek; 1999 *The Fateful Hoaxing of Margaret Mead: A Historical Analysis of Her Samoan Research*. Boulder, CO: Westview.

Mead, Margaret; 1931 "Life as a Samoan Girl". In *All True! The Record of Actual Adventures That Have Happened to Ten Women of Today*. New York: Brewer, Warren and Putnam.

Orans, Martin; 1996 *Not Even Wrong: Margaret Mead, Derek Freeman, and the Samoans*. Novato, CA:

Chandler and Sharp; 1999 "Mead Misrepresented". *Science* vol. 283, pp.1649-50

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Notice

Canberra Skeptics inspired by the recent World Convention are keen to initiate activities that involve young people. If you are a schoolteacher and you think you could assist, we are eager to hear from you. We also wish to make contact with people who have access to videos suitable for children and teenagers and magicians who can use their art to impress on children how easily they can believe things that are not necessarily true.

Please contact Vicki McGlashan on (02) 6296 4555 after hours or vicki@mcglashan.com.au.



Help

Recently we received a very good article on the science of dendrochronology that we would like to use but we admit, to our shame, that we have mislaid the details of who sent it.

If the author would kindly contact us, we will (after suitable consumption of humble pie) publish the piece in the next issue.

EDITOR

A VACATION EXPERIENCE

Colin Keay

My wife took the first phone call. "I'm Gabrielle", the caller said. After such pleasantries as inquiries after my wife's health Gabrielle asked if we could be interested in an offer of six nights of free holiday accommodation for two between now (early October 2000) and next September.

My wife replied that we might be, but asked what had to be done to earn it? Gabrielle advised that she represented Vacation Corporation, a company providing top grade holiday accommodation over many years. My wife, coming straight to the point, inquired if it was a time-share arrangement, and was told "No". In reply to an inquiry as to the standard of accommodation, the Hilton and Sheraton groups were mentioned. Gabrielle went on to invite my wife and myself to a seminar on the coming weekend at which all would be made clear and in return for our attendance we would receive six free nights of accommodation at our choice from over 100 motels scattered over the whole of Australia. My wife then handed the phone over to me. I elicited much the same information as my wife had received. I pointed out that one of us might be unable to attend at the times given for the seminars. No, I was told, both of us had to attend to qualify for the free accommodation deal. I said we would discuss the matter and would let her know by Saturday morning.

On Friday evening I learned that another local Skeptic had recently been approached by the same group. He had inquired if there was any charge on top of the so-called free accommodation, and was told that he would only have to pay for breakfasts and dinners which were required to be taken at the selected venue. Well, you have to eat, right?

We discussed the offer, considered we had no more to lose than a couple of hours on Sunday afternoon and (as advised by Richard Lead) opted to leave our cheque books at home. On Saturday morn-

ing the phone rang again and our decision sought. Okay, we agreed to attend out of sheer curiosity. On Sunday afternoon we arrived at Vacation Corporation's spacious Newcastle office to find present more staff (five apparently) than prospective clients. We were attended to by Suellen, who first required us to answer a heap of questions about our usual holiday plans, which she entered on a prepared form. She seemed delighted to learn that both of us had been overseas twice this year already, me for seven weeks round the world.

Then it was down to business with Suellen giving us her undivided attention for the rest of the session. Vacation Corporation represents "Holiday Concepts Ltd", with offices in Victoria and South Australia, and developer "Leisuretime Services P/L" engaged in building several resorts around the country, including houseboats on the Hawkesbury River, apartments in Sandy Bay, Tassie, and a lakeside resort at Numurkah, in Victoria. The colour photos were very tempting. We were given the impression that these companies belong to an international group, but this was not borne out by the prospectus that was later given to us as we departed.

The bulk of the "seminar" was focused on the international resorts, all beautifully illustrated in a glossy handbook over 10mm thick. There were listed 3,500 resorts in 85 different countries, their locations shown on maps of the various countries. We were told that the international group had 4,500,000 members with access to these strictly private resorts, as well as the right to enjoy substantial discounts on air-fares, rental cars and, if necessary, normal hotel rates. All members had one week of free accommodation in the self-catering resort units that could hold from 7 to 9 people at a time. Members could invite family and friends and did not have to be present themselves. Extra weeks cost \$181.50 in Australia and \$450 overseas.

Wow, so what was the up-front cost? Membership is a mere \$14,900 for an ownership share in perpetuity, with \$375 pa maintenance costs. Having recently spent half that sum on one trip it sounded good, but is it? We were assured that our membership could be readily sold if necessary, but we were not convinced.

Returning to "Prospectus number 6", in the name of The Resort Management Vacation Trust, we found on page 2 a section labelled "Timesharing: One of the most successful developments within the holiday and leisure industry...". So the scheme is a timeshare operation after all, contrary to what we had been led to believe.

The prospectus listed Holiday Concepts Management Ltd as manager of the trust and Leisuretime Services Pty, Ltd, as developer. The prospectus was registered with ASIC on 18 June 1999 and expired on 13 June 2000, by which time the timesharing scheme was required to be registered as a managed investment scheme. A supplementary prospectus extended the deadline to 30th September 2000. A second supplementary prospectus extends the deadline until 15th December 2000. Evidently the scheme is failing to attract enough investors to complete the project on time. That state of affairs alone warned us off.

Anyway, a careful reading of the prospectus(s) at home failed to reveal any international links, or rights to overseas vacation venues. So a couple of days later I returned to Vacation Corporation's office, which was then manned solely by the busy manager, Rob Watson, who simultaneously had to deal with me, another inquirer and several telephone calls. It turns out that members of the trust must enter a separate agreement with Resort Condominiums International, through an Australian office in Surfers Paradise. The agreement costs, I was told, \$270 for a 5 year plan.

continued p 62 ...

More historical linguistics from Kaulins: The erudite end of the fringe

Mark Newbrook

Readers may recall my survey piece on fringe historical linguistics (20:2 pp 42-47). Some may even recall section 11 (p 45) about the Latvian author Andis Kaulins, with whom I had a fairly major email exchange in early 1999 (after discovering his web-based material). Kaulins argues that Latvian is very close to the Indo-European ancestor language Proto-Indo-European (henceforth PIE) and indeed to posited ancestor languages in still deeper time such as 'Nostratic'. He regards many words in ancient languages as cognate with Latvian words or as borrowings from Latvian, and in consequence rejects their often rather well established etymologies. For instance, he believes that Greek *omega*, the name of the last letter of the Greek alphabet, is not *o* + *mega* ('big/long O', as opposed to *omicron* = 'little/short O') - which classical philologists would regard as more or less certain - but instead derives from a Latvian word.

It follows from Kaulins' position that the conventional view of the Baltic sub-family of the Indo-European language family (henceforth IE) must be seriously wrong. It is normally held that Lithuanian, which has a transparently archaic grammar and phonology, preserves the older patterns of Baltic much more than does Latvian, with the result that it is Lithuanian which is relatively (though not in absolute terms) close to PIE. The mainstream view also holds that many of the differences between the two languages are the result of Latvian coming under the influence of unrelated neighbouring languages such as Estonian and Livonian.

Kaulins' view is almost the reverse of this: Latvian is much the better guide to older Baltic forms and indeed very relevant indeed for IE (and Nostratic!) philology. Indeed, he thinks that Latvian has changed very little in thousands of years. But this implies that currently accepted reconstructions of early IE must be seriously wrong at most points where they are very different

from contemporary Latvian; and this appears very unlikely, given the weight of other evidence in their favour. However, Latvian itself is not recorded in writing before modern times. This makes it difficult to argue decisively in this context against someone like Kaulins who rejects the systematic methods of standard comparative linguistics (see below). Kaulins can claim that Latvian has been much the same for millennia and no decisive counter-evidence can be produced.

Kaulins is not lacking in erudition; and, unusually for fringe historical linguists, he knows enough linguistics to realise that not only his conclusions but also his methods of reconstruction are non-standard. Whereas most such authors ignore C19-20 theories and methodology, he seems to know about them but denies their validity or at least their superiority over his own C18-like approach, which is based largely on superficial similarities of form and meaning, distributed haphazardly across the vocabulary. He is supported in this, to some degree, by the highly controversial (arguably fringe) historical linguist Merritt Ruhlen.

Ruhlen and a few other scholars have argued for a return to more impressionistic methods. But even they have usually used large databases in an attempt to achieve some sort of statistical reliability.

On the other hand, Donald Ringe has recently produced statistical arguments which indicate that the methods adopted by Ruhlen (and hence, *a fortiori*, those of Kaulins) are very likely to throw up false cognates - as mainstream philologists have long thought - and thus are definitely unreliable.

Kaulins does draw for support on the work of scholars such as Cavalli-Sforza on non-linguistic evidence regarding the diffusion of populations (genetic, etc). Much of this evidence is very interesting and some of it suggests sequences of events different from those which a

philologist working alone might posit. But populations can undergo language shift: eg, very many people of African descent now speak only English. Stories based on (say) population genetics, on the one hand, and on comparative linguistics, on the other, may differ, without either being wrong. And for very early dates we are often in no position to describe or analyse such situations at the required level of detail, because of the shortage of hard evidence.

Indeed, there is currently an issue of this kind involving Australian languages. On the basis of non-linguistic evidence it appears to many scholars that there are at least two populations involved, but the consensus on the languages has come to be heavily in favour of a single family. If both these positions are confirmed, there must have been a major case of language shift in the remote past. That would not be a surprise, but it may prove impossible to reconstruct the specifics. And this kind of thing may also apply in other such cases of the mismatch of evidence between disciplines.

On 18/9/00, quite out of the blue, I received an email from Kaulins, who had seen my paper on a web site. He suggested that the recent findings of Walter Pitman & William Ryan and of Robert Ballard would cause me to change my assessment of his ideas. I feel called upon to comment.

Briefly, Pitman & Ryan (in their book *Noah's Flood*, published in 1999) have argued that the Black Sea was formed rapidly 7,500 years ago by inundation through the straits leading to the Sea of Marmara and on to the Aegean. This profoundly affected the pattern of civilisation in that area, with much diffusion of populations and their cultures to the surrounding territories. Ballard has now reported ruins on the bed of the Black Sea, which may well relate to these events. It is suggested that the patterns of diffusion from this area included the diffusion of IE, which until then may well have been centred close to the Black Sea - and,

according to some scholars, to the north of it, in the modern Ukraine, rather than to the south in Anatolia.

This last set of ideas has most saliently been proposed by Marija Gimbutas. The scenario is by no means inconceivable. However, Gimbutas' interpretations of the relevant evidence are much more suspect than Pittman & Ryan seem to realise. And, like many others on the fringe of the mainstream, Kaulins himself seems to uphold her ideas rather uncritically. He also believes that Gimbutas' scenario favours his notion that the Baltic languages (especially Latvian) are particularly close to PIE (etc). On this account, their earliest speakers would not have had very far to travel to reach their present locations (which are of long standing).

At present I have no reason to doubt Pitman & Ryan's expertise in their own area, or indeed Ballard's. These authors could very well be right. And the non-linguistic evidence they cite is indeed very interesting. Nor do I doubt that, if they are right, the Black Sea area would have been a centre for linguistic contact and later for diffusion. But - despite their use of Ringe *et al.* - Pitman & Ryan's material on linguistics itself seems weak and confused. For instance: on p 212 of their book, they quote Ringe on matters internal to IE, but then make a link back into the ideas of deep-time reconstructionists, whose views on pre-PIE matters are regarded by Ringe as much too speculative on present evidence. They do not mention these differences, and in fact they are obscured by the salience given to one IE-internal point where Ringe WAS persuaded by new evidence to change his view. Then Pitman & Ryan mix up the issue of borrowings INTO IE and that of borrowings FROM IE; and then they give a list, drawn from Vavilov, of cognates/probable cognates/loans mostly taken from WITHIN IE. They fail to state that the non-IE etymologies proposed in more doubtful cases are often disputed.

Whatever the non-linguistic data suggest, this kind of linguistic discourse hardly inspires confidence. Pitman & Ryan themselves certainly cannot be quoted as authorities on the linguistic aspects of these matters.

But in any case, even if the proposed location for PIE should prove to be right, that does not of itself show (given the time depth and the lack of early records) that the Baltic languages themselves - especially Latvian - are as close to PIE as Kaulins seems to suggest. Still less does it show that they are very close to earlier 'mother languages' such as Nostratic. This latter point assumes, of course, that one accepts revived glottochronology as valid, and believes (against the evidence collated by Ringe *et al.*) that such a language can be partly reconstructed in the first place.

It seems to me that the most major issue here is still the one of which Kaulins fell foul when he first published his ideas in 1977: namely, the fact that his philological methodology is of a type which has been rejected in the mainstream for a very long time. As I have stated both in my recent article in *the Skeptic* and above, this change has occurred for the very good reason that the older method, tested in cases where the linguistic history is well known, throws up too many pseudo-cognates (etc, etc). Swadesh and Ruhlen returned to it, but, as noted, their ideas have not persuaded more than a small minority. Even the slightly more moderate Nostraticists are rather out on a limb. (It must be said that one would not guess this from the references to them made by many fringe writers. Even the mainstream philosopher Robert Pennock, in his otherwise excellent *Tower Of Babel*, got this wrong.) Ringe's statistical work on the families which allegedly comprise Nostratic seems to indicate that there is a case of sorts for Uralian and IE having a common ancestor, but not for the other families.

Kaulins' typical rejoinder to these points is to claim that I and other academic linguists are at fault because we ASSUME that our modern methodology has led us to correct results, and therefore rely on it. He himself, on the other hand, is supposedly able to arrive at very different results which he knows are genuinely correct, and thus to conclude that our methods are in fact faulty. His main argument against standard interpretations is that they are 'demonstrably not in accord with knowledge in all other disciplines';

but as we have seen his emphasis on this point is at the very least exaggerated. Indeed, such claims are themselves frequently oversimplifications of the situation. Some of his other claims about the errors of mainstream historical linguistics (eg, that we pay too little attention to the eastern IE languages) are simply false. Elsewhere he merely asserts that majority views are hardly ever indicators of the way forward. This is a familiar fringe position, and it seems so one-sided and misguided that there is little point in attacking it yet again. At times Kaulins descends into insult, as where he accuses linguists of being deluded and ignoring the evidence, in the same breath describing these comments as 'charitable'!

And indeed we typically have far more evidence in support of our interpretations than Kaulins has for his. Since the discipline became more rigorous in C19, the requirement for systematicity has more than proved its worth in terms of successful explanations. Of course, anomalies exist; but our experience tells us that where we have sufficient information we can often account for these. And our knowledge of language change continues to develop fruitfully. Naturally we revise our ideas as the evidence grows; but that is the nature of science.

In fact, it is not always at all clear why Kaulins posits the specific links which he proclaims, rather than others which could equally well be proposed in impressionistic terms. Often it seems that he has simply assumed that a Latvian connection is there to be found somewhere, and has therefore hunted for whatever Latvian word can most readily be pressed into service, albeit unconvincingly. In this respect his method is not significantly different from those of other fringe authors who know much less than he does about ancient languages. It could be said that he should know better.

If the number of anomalies were vastly greater than it is, and if it therefore really did appear that Kaulins was right in opposing current methodology, we would naturally have to accept this. But neither Kaulins nor any other theoretician (fringe or not) would actually benefit much from this. If systematicity were not important

and superficial similarities (or at least some of them) were viable, the number of possible interpretations of any substantial body of comparative data would be enormously magnified. Kaulins might be able to make out a fair case for his own proposals, but multitudes of other comparativists would have cases of similar strength supporting theirs. It has been shown that with methodology of this kind a case can be made that almost any pair of unrelated languages are replete with mutual cognates. So the discipline of historical linguistics - to the extent that it involves reconstruction, the positing of links between words and languages, and the possibility of generalisation - would grind to a halt. We should not go that way unless it is forced on us by very persuasive evidence.

Again, if there were many cases where our current interpretation of the linguistic evidence implied a completely different analysis from that upon which several other disciplines were agreed, we would need to think again. But the strong possibility of language shift and associated phenomena imply that language need not correlate closely with material culture, ethnicity, etc. So no one case or small set of such cases where the interpretations clash is adequate to demolish the linguistic methodology - especially if the other disciplines themselves do not agree.

Unless dramatic new evidence or argumentation appears, it seems unlikely that the mainstream consensus will shift in this area, especially in respect of the methodology of comparative philology. So far, we have not seen anything to make us doubt that the C19-20 changes constituted a major improvement in respect of reliability.

To the contrary, in fact. In belated response to my comments in earlier emails, Kaulins mainly offers more equations of superficially similar forms. For instance, he apparently regards the language-names *Latin*, *Latvian* and *Luwian* (Anatolian) as related. But these rough phonemic parallels are of the same unreliable kind; this kind of thing simply does not count as good evidence. At best it is suggestive, and such cases must be pursued further using up-to-date methods. If there is any philological evidence of particularly close

links between these languages, it must involve bodies of examples displaying systematic similarities and differences. And even if the language-names were shown by such methods - or by specific textual evidence - to be connected, that would not of itself show that these languages themselves were closely connected. Language names can shift too. Note cases such as *Macedonian*, which has been applied to three separate linguistic entities - one of them Hellenic, one either Hellenic or close to it, and one Slavic - over the last 2,500 years. In a further email, Kaulins proclaims a Latvian-Egyptian parallel; but it is of the same unreliable type.

Kaulins can point to a very few cases where, as Nostraticists have pointed out, cognates happen to have very similar forms indeed in modern languages and in PIE (or even Nostratic), as these have been reconstructed. But these words have typically gone through other (known) forms on the way. A degree of similarity is no surprise; very close similarity, in such circumstances, can occasionally arise simply by chance.

In sum: if Kaulins has a good case, he has not made it. One must suspect that he has none.

1) I note in passing that Kaulins has also endorsed one of the many non-standard 'decipherments' of the Phaistos Disk (see *the Skeptic* 20:3 pp 24-26): as a geometric proof in rather odd Greek.

2) In one of his recent emails, Kaulins went on to discuss a 'verified report' of a Russian Latvian-speaking general in C17 who was stationed in the Crimea (near the putative IE homeland) and met a small group of speakers there with whom - to his great astonishment - he was able to converse in Latvian. They were apparently not Latvians but a group identified as some kind of Crimean Tartar; it is deduced that their language and Latvian both retained many ancient features going back at least to PIE and (given the non-IE affiliations of Tartar) maybe beyond. However, Kaulins has not so far indicated who 'verified' this report. There are many such stories, and they are very popular in hyper-diffusionist circles (eg, speakers of Mexican Amerindian languages are said to understand Japanese and/or *vice versa*). Given what is known of Tartar and the time-depths involved, one might suggest that the story is unlikely to be true. And, if it is true, it may have involved some local migrant minority rather than genuine Tartars. But I await firm evidence.

... vacation from p 59

Oh, I almost forgot. The 6 days free accommodation for attending the presentation. At the conclusion of Suellen's solo seminar, my wife and I were given a glossy booklet "Take a Break" along with three serial-numbered reservation request forms valid for 12 months. Back at home when we had the chance to examine the offer, we were shocked. There were two choices: either pay the quoted daily rate and get a free day for each day paid for; or, pay for breakfast and dinner. The cheapest deal was \$45/night for two at the Great Western Hotel on the Victoria Western Highway. Alternatively, paying \$12 per person for breakfast and \$23 for dinner, the cost over two days runs out \$140 all told. However at \$45 for two nights, with meals bought elsewhere, it is not too bad. But the majority of venues in "Take a Break" cost over \$200 for two nights. The dearest accommodation was \$264 for two nights for two at Darling Harbour, with no meals option. The most outrageous meals option was \$99/person per day (\$27 breakfast and \$72 dinner. Total: \$198 for two people per day - \$386 for two days) at Mietta's Queenscliff Hotel, where there are no telephones or bathrooms in the rooms and no television or radio in the hotel!

Now these offers (even the cheapest) can by no stretch of credibility be regarded as free in the accepted sense of the word. So, on that scam alone, any credibility of the Vacation Corporation completely evaporated. This was amply reinforced when I later returned to inquire about the international connection. I heard the manager on the phone patiently explaining to the caller that the six days free accommodation was "our gift to you for attending our presentation".

And by the way, during the seminar I asked Suellen straight out how they came to select us for their offer. I knew it was not through electoral rolls or the phone directory. Suellen admitted that they obtained names through airlines. This has since been verified when some friends, recently returned from five weeks in Britain, were also invited to a Vacation Corporation seminar (they declined). Have the airlines no principles?



HOW HARD IS SCIENCE?

Bob Nixon

His name is Cobol, and he's a German Shepherd cross. He's cross because, while he's got the right colouring, he's about the size of a terrier. That, one assumes, is a legacy of a none too fussy mother. He's a great little dog, keen to please, always happy to see me come home and generally well behaved. He has only one drawback, intelligence, he doesn't have any. He's as sharp as a pound of wet liver, and even he can do science. He's got ball technology down pat. Entirely with his unaided eye he can determine the trajectory of a thrown tennis ball, allow for the wind, examine the ground ahead and have his mouth positioned so as to achieve a catch. That's years of practice for you. It began with me waving the ball in front of his face and tossing it away. After only several months of daily training he was able to determine that I wanted him to go and get the bloody thing and bring it back to me. Today he does it with alacrity, a big word for a little dog.

But that's technology. He was able to work out the subtleties of aerodynamics and the properties of vulcanisation ("bounce", to the laydog) only after painstaking effort on my part. I said he could do science, and I meant it.

Stick science it is. I'm not sure of the technical term for it. He is very discriminating when it comes to sticks. For throwing, the bigger the better is the general rule, but the remnants of pine trees are studiously ignored. Something to do with the taste, I guess. For science, he prefers sticks with a bit of a kink in them, just a little bend. That's because he's worked out a little trick of his own, one that makes people ooh and ahh in parks across Melbourne. Placing the stick on the ground, bendy bit uppermost, he positions his snout and flicks it into the air, catching it before it hits the ground.

That, believe it or not, is science. No-one taught him the trick, he worked it out by himself.

What Cobol has done, you see, is decide through some mechanism known only to himself, that it is possible to propel a stick into the air by pushing it upwards. That theory developed, he set about testing, repeating the process with sticks of different sizes, different wood types and on different terrain. Now he favours a metre long stick bent about midway and of a light wood. He has learned that a well grassed spot enables him to push his nose under the correct spot. He makes a few practice flicks, until he finds the centre of balance. If he's unhappy with the stick he will munch hungrily at one end until the balance is right. Experimentation has led to a discovery, even for a dog who can barely spell his own name.

If Cobol can do it, what's wrong with the rest of us? If an escapee from the Lost Dog's Home can come up with an experiment to test a theory, why not a herbalist, or an astrologer, or a numerologist, or you.

I'm being facetious, of course. We all do science, even if we don't know it. One might even argue that a recipe for Duck a la Andy (or Darren, Louise or Danni) is science. Experimentation is not difficult, but sometimes it's tedious, sometimes it's fiddly, it can even be dangerous, and it is always time consuming. Cobol had an aim, he wanted the chance to bypass the vagaries of his master's stick chucking skills. With the skill mastered, he perhaps enjoys the praise it brings from total strangers. There's a profit there, at least for him, and he put in the work.

I, on the other hand, prefer a quick result. I doubt whether I could spend a lot of time watching bacteria grow in a dish, I would quickly tire of checking traps in search of endangered species or belting rocks on the trail of some long dead sea urchin. So how can I make a profit from science? I can call anything science and announce it to the public. If I have a scarf, I could lay it in the sun and claim it has been energised with the power of Guma, a healing energy I just made up. I might claim that science can actually prove the historical validity of the Bible, while I pass around the plate.

Or I can, as most of us do, sit back and enjoy the benefits provided by those who are prepared to put in the work, who will sit for hours staring into a microscope, or a telescope, or the ear of a rat for all I know. I have profited from science. Better techniques for growing more nutritious food, doctors who are armed with whole batteries of tests and regiments of healing or pain killing drugs, smaller electronic components, larger telescopes and the list goes on.

And still there are those who would have us trust their Guma, or their wobbly interpretations of the ancients. Astrology outsells science, alternative therapies still have followers who wander from one practitioner to another in search of a miracle cure. Perpetual motion machines are touted, governments and doctors are accused of hiding the truth about *everything*. Scientists are seen by some as boring nerds who seek only a way to continue living off grants, as closed-minded and tunnel-visioned, as parties to global conspiracies and secretive militarists. I won't have it.

Nobody talks that way about my dog.



Bob Nixon (r) dines with Joe Nickell at the Convention

LETTERS

HIGH PRAISE

My name is Michael Jones and if your memory serves you may remember me as the frantically scrambling Audio/Visual technician at the recent World Skeptics Convention in Sydney.

Permit me to begin by saying what a privilege it was to work at the conference. Unfortunately the bread and butter of my technical work is usually spent at conferences dealing with corporate commerce or any given noun prefixed by an *e-* (It would appear the letter 'e' is now endowed with a level of significance beyond even its title as the most common letter in the alphabet.)

As such it was refreshing to be involved with a production that was not puerile or shallow and seemed, in its own unique way, to contribute something of worth to the world.

Forgive me if my prose sounds somewhat purple but there's only so many greedy internet lawyers one can deal with before a very deep sense of cynicism sets in.

But I digress. The reason I am writing to you is that whilst at the conference (between juggling microphones and repairing video players) I was able to read a back issue of *the Skeptic*. And what'ya know? It was really bloody interesting.

Despite my moonlighting disguise as a humble A/V technician, I have actually been a professional writer for some six years now, working predominantly as a script editor and playwright for theatre and film. Alas the pay is not so good, nor the work so consistent, that I can give up being a tech. Currently I work for the Australian National Playwrights' Centre (an advisory body for the development of new Australian writing and theatre) as editor of their quarterly publication entitled *Dialogue*. So it was good also to see how other groups manage to put out a quality publication on a shoestring budget and still manage to make it look like it's worth more than wiping your arse with.

But again, I digress. A bad habit... I'll get to the point. I have not long returned to Australia having spent the better part of two years working in the United States. The majority

Readers' letters on topics of interest to other Skeptics are welcome. We reserve the right to edit them for reasons of clarity, brevity or legality.

of my time was spent in the concrete expanse of Los Angeles but I also had the bitter-sweet fortune of spending a period of time living in a trailer on a farm in the middle of Bible Belt Missouri. This sojourn in the very throes of ignorant, misguided, Baptist fundamentalism was one I shall not quickly forget. Particularly so because I was working with children as a lifeguard and swimming teacher at a nearby summer camp and the effects on those children due to the dogma they had been fed was a tragedy.

Anyway, to really get to the point, I spent a great deal of time in debate with various members of this bubble like society and at the end of it, after numerous deliberations on the nature of good and evil, God and the Devil and the doctrine of obedience I was moved to write about it...

The essay that resulted is a sociological and historical look at the nature of God, his relationship with The Devil and as such the effect on human social evolution. Of course because I've been working in the theatre and film industries since I was 17 it is written as an analogy of Theatrical production. I'm sending it to you with the thought that you and your readers may perhaps find it interesting.

Once again thank you for the opportunity of being at the conference. I was informed and inspired.

MIKE JONES

It is always pleasant to receive praise, and that from an unexpected source is doubly welcome. We thank Mike for his kind words and for his exemplary service during the Convention.

We were also impressed by his contribution to the magazine and have published it in this issue. **Ed**

DEPRESSION

Psychiatrist Sydney Bockner told us (20:1) that simple unhappiness ("Reactive Depression") and depression as a diagnostic entity ("Endogenous Depression") can be reliably distinguished, arise from different causes, and respond to different treatments.

I responded to his assertions with an article (20:2) which cited numerous scientific studies that contradicted each of these claims.

Instead of countering with a batch of competing research findings, Sydney replied (20:3) with some straw man misrepresentations of my position, and a simple re-pronouncement of his.

He attributed to me the claims that "varieties of depression differ only in their severity", "reactive (neurotic) depression and endogenous clinical depression are simply opposite poles of a continuous scale," and "severe depressions must be biological." A careful reading of my article (20:2) shows I made none of these assertions. Of course Bipolar Affective Disorder exists. As does "Maternity blues" or "Third-day blues", and Seasonal Affective Disorder, and post-viral depression, and depressions subsequent to Cushing's Disease, and to hypothyroidism. (In fact this complexity is probably what makes Sydney's two-separate boxes theory of reactive versus endogenous, psychotherapy versus drugs, symptom (of a neurotic 'illness?') versus diagnostic entity, so inadequate.)

But the real disappointment in Sydney's reply is that instead of defending himself with some science, he resorts to assertion once again. For example, on the "continuous scale" straw man argument, he simply pronounces that "few psychiatrists today accept this view." End of the matter.

On the question of whether electroconvulsive therapy may be useful for any form of severe depression, I cited a respected study which found that none of four major proposed distinctions between endogenous and non-endogenous depression predicted response to ECT. In reply Sydney wrote "This is a serious error, with which I disagree." End of the matter.

So it is ironic that Sydney dislikes the tone of my less objective speculations about his motives enough to claim they "should not enter scientific discussions", because so far we

haven't been having a scientific discussion. And when we do, this will be to the "benefit of the most important person in our work - our patient," or even 'client'.

GARY BAKKER
LAUNCESTON TAS

SEXUAL ORIENTATION

The trouble with emotional reactions is that they stop you from thinking clearly. Unfortunately this happened to Andrew Rock who states that he "Leaps to the keyboard when something annoys" (20 :3). And what annoyed Andrew was my paper on "sex change" operations (20 :2). With respect, I think if he was less annoyed, calmer, and walked quietly rather than jumped to the keyboard, he would have seen my main point. My aim was to distinguish genetic sex from sexual orientation - the former determined by nature, the latter by nurture. I did not suggest that genes were the be-all and end-all of sexual orientation. I made it clear that genetic make-up determines sex (gender), but of course one has the option to adopt the opposite sex. And of course environment and life experiences influence one's decision about sexual orientation. The fact that the genes are in a male combination (XY) or a female combination (XX) does not necessarily mean one's sexual orientation is irrevocably determined. Genes have no monopoly on determinism.

This point was clearly put by Richard Dawkins (1993) following the discovery of a hereditary factor in male homosexuality reported by the National Institution of Health, Bethesda, Maryland, in 1993 in *Science*. The Bethesda team found in one region, called Xq 28, near the tip of the X chromosome markers as evidence of a hereditary component in male homosexuality. Dawkins wrote that "The boggy of genetic determinism needs to be laid to rest. The genes are not simple blueprints, but more like recipes. Their effects on bodies are often multifarious and hard to unravel. Genes at first behave like blueprints, with a one-to-one mapping of design. But in the next step - the development of the whole body and psychological predispositions it becomes more complicated, like a recipe. The mere demonstration that there exists a gene

'for' homosexuality leaves the value of that likelihood almost totally open". In other words it is the psychological make-up, the environment and experience which finally decide the sexual orientation, regardless of the genetic code. However a change in sexual orientation does not change one's sex.

I suspect that Andrew and I basically have the same perceptions about the influence of nature (genes, psychological make-up) and nurture (environment, upbringing, experience). Where we differ, I think is as follows:

My view - if genes and sexual organs are male, then sex is male - even if sexual orientation is female.

Andrew's view - if sexual orientation is female, one is female - even if genes and sexual organs are male.

(For the sake of brevity I give only a male example).

I agree with Andrew's comment that "Hormones and surgery can improve happiness and make things better for people in a real sense". In fact I pointedly quoted the report (1990) from the special clinic at London's Charing Cross Hospital (started by a late colleague of mine at Guy's Hospital, John Randell) that the outcome of gender reassignment surgery was generally favourable. "Successfully treated transsexuals are mostly self supporting, not a drain on society compared with unhappy people with unresolved gender problems".

I hope that this postscript to my paper assuages Andrew's annoyance and helps him to feel calmer.

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SYDNEY BOCKNER
CRAFERS SA

RACISM

John Snowden's forum piece (20:) relies almost entirely on *ad hominem* attacks and his apparent refusal to acknowledge that the word "resonance" can be used in a figurative sense to mean "the ability to evoke or suggest images, memories, and emotions." (*The New Oxford Dictionary of English*, 1998)

That Hanson's opinions about Aborigines and Asians have evoked or suggested images, memories, and emotions about racism or the Blood Libel Legend or Nazi propaganda in the minds of some people, is simply a fact. When the three Labor Prime Ministers said that "Hanson's allegations of Aboriginal cannibalism carried an awful resonance of the depiction in Nazi Germany of Jews as a subhuman species" they were using the word resonance figuratively.

That racial stereotypes and racial folklore can be harmful is well documented. (1, 2, 3, 4, 5)

ALBERT BRAUNSTEIN
HIGHETT VIC

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2. Dundes, A. (ed), *The Blood Libel Legend: A Casebook in Antisemitic Folklore* (1991)
3. "Proverbs in Nazi Germany": The Promulgation of Anti-Semitism and Stereotypes Through Folklore in *Proverbs are Never Out of Season* by Wolfgang Mieder (1993)
4. Trachtenburg, J, *The Devil and the Jews* (1943)
5. Wistrich, R. S., *Antisemitism: The Longest Hatred* (1991)

CANNIBALISM

Allow me to respond to John Snowden's critique of my article (19:4) updating my critical investigation (14:1) of the popular and widely accepted belief that cannibalism was an approved customary practice amongst Australia's Aboriginal population. I argued that such a belief owes little or nothing to the rigours of scientific method.

The "main issue" raised by John is my failure to go searching the haystack for a needle he assured me was there - a case of murder and alleged cannibalism in Queensland in the 1940s - no further details or references provided. Anticipating that complaint, I did attempt to forestall it by suggesting that the acknowledged activities of people like Jeffrey Dahmer and Gary Heidnik (I could have added others) do not make Americans into cannibals. And in my earlier article (14:1), I told of the well-worn path I had taken to the State

Archives etc, checking out any number of supposed instances of Aboriginal cannibalism thrown at me by true believers. But these had come with specific references, names, places and dates: the latest from Mt Garnet in 1934, popularised in the magazine *People*, 4/3/59.

As for John's accusation that I am responsible for keeping "the pot of alleged cannibalism simmering", I would again refer readers to my earlier articles. Virtually all my writing on this topic has been reactive to the promulgation of allegations of cannibalism. And on the majority of occasions when I have challenged the myth, others have emerged from the woodwork to defend it, often citing familiar but discredited authorities and examples. Often they have been given the last word.

John would probably enjoy one of the more extreme reactions: the self-published *Anthropophagitism in the Antipodes*, by James Cooke RN (Rtd), 1997. While "Available only to subscribers and invited clients", some bookshops have stocked this compilation of accounts and claims of Aboriginal cannibalism from a wide range of sources. The introduction rails against the world-wide conspiracy on the part of people like Arens, Pickering, *New Scientist* and myself to suppress stories of cannibalism. Let me say that I am happy for such stories to be told: but invite people to question their origin and role, to check primary sources where possible, and reflect on the attachment of many people to such stories. Cooke even claims to have confidential evidence for contemporary Aboriginal cannibalism in the Kimberley, Warburton, Central Desert and Arnhem Land (p.ix)! He also claims that there is evidence to support the Blood Libel, and that it may help explain "the exceptionally large numbers of missing children" in the USA: and cites research detailing some "100 diseases that are Jewish specific" (p.xxv)!

Which brings me to John's concern about my failure to name the three Jewish people who drew the parallel between the Blood Libel and allegations of cannibalism.

I would, of course, have been only too happy to provide him with the references: letters of Elfie Rosenberg in *The Age* 25/4/97, Rabbi Richard Lampert of Temple Emmanuel, Chatswood, in the *West Australian* (26-27/4/97); and Lawrence Rosenblum was quoted by Michael Duffy as "a

Brisbane Jewish community leader" in *The Courier Mail* 19/10/98. My basis for saying that they acted independently? I contacted two of them: neither had been aware of the statements of the other two.

There are lessons to be learned from the crimes against humanity, both to understand and cope with their legacy, and to reduce the risks of seeing them repeated on any scale. While the Holocaust looms large in that picture we should look further. As Aime Cesaire wryly commented, what provokes much of the European abhorrence of Hitler is not just his deeds, but that he applied in Europe practices which they had hitherto reserved for the "natives" of their colonies.

The slave trade of the 18th century alone involved the transportation of some three million Africans: and over the whole period, some two million died on the voyage to the Americas.

I am quite happy to allow fellow Skeptics to weigh John's numerous gratuitous assertions. They might read both Michael Pickering and John Brunton and make their own judgments on their arguments. And I hope many will do their bit to challenge this popular colonial myth. If any members missed my first article (14:1) I would be happy to supply a photocopy, and do my best to answer any queries:

Ph. 07 3844 5526, or write
PO Box 5505 West End QLD 4101.

**RICHARD BUCHHORN
WEST END QLD**

DATING

If I should seem to chide John Happs for some inaccuracies in his article (20:3, p7) it is only because I believe that the science which we use to counter creationist arguments should be above reproach.

Possible mechanisms for variations in half lives are few. Routine measurements of a short lived radionuclide produced by reactor irradiation always shows the same half life regardless of whether the measurement was done today or fifty years ago. Further, any change in half life would have to result from a change in the properties of the decaying nucleus. This would in turn have a significant effect on the energies of the particles or gamma rays emitted. With the pre-

cision of germanium gamma ray spectrometers available for the last 30-40 years such changes could not have gone unnoticed.

One kind of radioactivity, electron capture (EC) decay, can be influenced by the environment of the atom. In EC decay an orbital electron whose wave function has a non zero magnitude within the nucleus can be absorbed by the nucleus, changing a proton into a neutron, provided that this results in a reduction of the mass of the atom. Extreme pressure can compress the wave function so that the electron spends a greater proportion of its time in the nucleus and so has a greater probability of being absorbed. This results in a shorter half life for that transition, but only by about 1% for the application of perhaps 50,000 atmospheres of pressure to the bulk material. The message is that half lives are very resistant to change.

The decay of ^{40}K to ^{40}Ar is by EC but this is only 11% of total decays; the other 89% go to ^{40}Ca which is no use for dating as there is normally a lot of it around already.

Only one in 10,000 atoms of potassium is ^{40}K , not one in 100. This is just as well, though it doesn't affect the present discussion, as the gamma-ray emission from natural potassium in the body would otherwise constitute a significant radiation hazard. More importantly, the EC decay is as I have described it, ie the absorption of an orbital electron by the nucleus, not striking of a proton by a beta particle.

The $^{39}\text{Ar}/^{40}\text{Ar}$ technique used by Renne *et al* (*Science*, vol 277, 29 Aug 1977, p1279) to date Pliny's Vesuvius eruption is designed to remove systematic errors in the standard K/Ar age determination which occur when excess ^{40}Ar is adsorbed from the atmosphere during the lifetime of the sample, and to remove random errors associated with an inevitably imperfect method of sampling. Excess ^{40}Ar for a given amount of ^{40}K increases the apparent age. The ratio $^{39}\text{Ar}/^{40}\text{Ar}$ is not used to determine the initial and final ^{40}K concentrations because these are identical to about one part in a million, regardless of the precise age of the sample.

Finally the age of the sample should be given not as 1925 years but as 1925 ± 94 years, giving the eruption date as 71 ± 94 AD. This makes the coincidence with Pliny's date of 79 AD, though still satisfactory, rather less amazing. The analysis of Renne *et al*'s data is not straightforward (I had difficulty with it). Satisfying as it is to

have agreement between historical and measured ages I wonder whether its introduction as a sockdologer* into the science vs creation debate may simply create more opportunities for nitpicking. There is already enough evidence, including the radiocarbon dating of ancient Egyptian remains with archaeological ages between

4000 and 6000 years (Libby, *Radio-carbon Dating*, U. Chicago Press, 1952), that the hypothesis of divine creation 6000 years ago is untenable.

Creationists who like to represent themselves as scientists and who press for vigorous debate and rigorous testing of theories and results might like to reflect that, while the results they dislike have been subjected to these processes and have emerged intact and strengthened, their own basic hypothesis has by the same processes been found wanting.

* Amer: A knockout blow

**BOB ENTWISTLE,
DUNEDIN, NZ**

JUDGING SCIENCE

Some time ago I had the pleasure of hearing a talk at Sydney Law School by Justice Michael Kirby, a justice of the High Court.

For me it was one of the most inspiring talks I had heard, yet it was not a talk about law, rather it was about science. It was most unusual not just for this reason. For a start it was presented in the usual academic atmosphere of distrust, bordering on fear, of science. Secondly it presented such impressive and positive visions of the power and future of science and humanity that one could easily have mistaken Justice Kirby for Carl Sagan or another of those extremely effervescent popularisers of science. Thirdly Justice Kirby betrayed, not only a love of science, but a willingness to attempt to learn the details and to have a confident grasp of the complexities. He balanced all this with due deference to the scientist to whom he made clear his profound respect and admiration.

Justice Kirby had come to talk about the modern interaction of law and science. Generally this is a negative reactionary topic in which all emphasis is placed on how we must go about controlling science and suppressing it in areas where there is risk. Indeed such debates usually take an irritating turn whereby the motives and moral worth of scientists are questioned. But

he surprised me completely with a positive exposition of the future of science and the promise it provided. He pointed out how the enormous benefits science were often lost or submerged behind an exaggerated fear of the negatives or dangers. His particular focus was genetics. His main point was that the law should never intervene to stop scientific research in an area just because it can be used negatively or have adverse effects. Outright bans in promising areas were stifling, unnecessary and often irrational over reactions.

It was extremely encouraging to hear such an enthusiasm for science from a highly educated and respected member of the community outside the scientific profession. Hopefully some of it washed off on the intensely cynical law school community. Given his high status in the legal and humanities community his contribution and support for science is much appreciated. I would recommend that the Skeptics ask him to one of their conferences. He is an extremely engaging speaker and he has much to say.

**MILES MACLEOD
Sydney, NSW**

FALUN GONG

I was surprised by the uncritical reception given to the presentation on Falun Gong at the recent International Skeptics Convention in Sydney. Also of concern was the fact that media reports of this session will no doubt be used by the Chinese government to legitimise its ongoing crackdown on Falun Gong supporters.

While I would not want to deny the Chinese speakers a platform for their views, I was surprised that the presentation by Mr Nan Sima and the accompanying statement from the Chinese government were taken at face value. The audience obviously enjoyed the expose of conjuring tricks by Mr Nan, but made no attempt to question the any unsubstantiated statements made about the harm caused by Falun Gong. Mr Nan and his translator produced a lot of dubious figures – such as the claim that 98% rate of followers had renounced their beliefs after “re-education” – which I thought would have been challenged by an organisation devoted to sceptical and critical thought.

I personally am not a believer in Falun Gong and have no connection with it or any of its supporters. It may well be a form of cult, but the claims made by the Chinese government that Falun Gong is a dangerous superstitious movement akin to Aum in Japan appear to be politically motivated rather than based on fact.

Amnesty International estimates that several thousand supporters of Falun Gong have been jailed, and many have been punished in other ways such as being fined, losing their jobs or being detained in psychiatric hospitals¹. Several supporters are reported to have died while in detention. There are credible eyewitness reports of elderly Falun Gong supporters being beaten up by plainclothes police after they have unfurled banners in Tiananmen Square. People who have questioned the crackdown have also suffered harsh reprisals.

To justify its crackdown on the movement, the Chinese government has branded Falun Gong as an evil superstitious organisation. And to bolster this view it has enlisted the help of “official” sceptics in China. Prominent scientific bodies have been quoted in support of the crackdown, and almost every week the state controlled media carries items in which academics denounce Falun Gong (eg “Scientific circles call for punishing cults”/“Expose the anti-science nature of the Falun Gong sect”).

On a recent visit to China I saw two TV news items in which the comments of “foreign experts” on the dangers of cults were edited to make them appear as if they were referring to Falun Gong specifically. Chinese viewers were given the misleading impression that reputable scientists outside China supported the suppression of Falun Gong.

For this reason I was surprised to see that the Skeptics session was being recorded on video by one of the Chinese group. I would expect that coverage of Sydney meeting will appear in the Chinese media emphasising the warm reception given to the Chinese speakers and the apparent endorsement of the Chinese government’s actions against Falun Gong.

In western countries Skeptics have helped unmask many dubious, fraudulent and harmful practices. But in China the Skeptical movement has become a tool of a political machine that also resorts to the use of imprisonment, torture and other human rights abuses to suppress what it sees as a threat to its control.

I think it is unfortunate that Australian Skeptics did nothing to question the claims being about Falun Gong. And by saying nothing, you may have provided the Chinese government with propaganda on a plate.

NAME WITHHELD AT WRITER'S REQUEST

1. The crackdown on Falun Gong and other so-called "heretical organizations" Amnesty International report, March 2000. <http://www.web.amnesty.org/ai.nsf/index/ASA170112000>

2. Falun Gong Cult: China Daily : <http://www.chinadaily.com.cn/falun/news.html>

After this presentation we were approached by a number of people complaining that it had been little more than Chinese government propaganda. After the talk, on behalf of CSICOP, Prof Paul Kurtz dissociated the Skeptics movement from attempts to politicise the debate (see his remarks p 15). Australian Skeptics concurs with Paul Kurtz on this.

Ed

DOXIES

I've been trolling through past issues of *the Skeptic* to find out more about what I've recently joined, what Australian Skeptics Inc (ASI) stands for, what the members may collectively, hope to achieve and how they're going about it. To the limited extent that any organisation's journal may convey such information *the Skeptic's* recent contents suggest we are mainly making uncoordinated scattergun attacks on easy target fringe beliefs and practices - attacks likely to have little immediate and even less long term effects on the happiness and fulfilment of the masses.

In "How should we challenge the charlatans?" (18:4, pp37-39) Guy Curtis reiterated the common experience that 'fringe' practitioners and their followers often remain immune to rational counter-arguments; and in Mark Newbrook's "Skepticism on the fringe' and 'mainstream" (20:2, pp24-29) he implied there are much more worthwhile targets for our Skeptical analyses in the 'mainstreams' of academia. Both of these findings accord with my own experiences in health care where much of orthodox medical practice (my doxy) has no

proven effectiveness while the hundred or more so-called alternative medical therapies (others' doxies) mostly may be relatively ineffective but fortunately cause little harm, except to the hip pocket.

But perhaps one development in mainstream health care does suggest a worthwhile strategy for rational skeptics in other disciplines who want to improve society at large. In 1987, the year before he died, Prof Archie Cochrane at Oxford promoted systematic reviews of randomised controlled trials in the evaluation of medical care methods. The internationally collaborative Cochrane Collection is collating and publicising health care options which have been shown to be most effective in such reviews, and these preferred options are setting benchmarks which new investigative and treatment methods will have to better before they can gain wide mainstream acceptance. The Australian end of this highly efficient international project can be readily accessed via www.hcn.net.au/healthbaselcochrane/intro.htm

The Cochrane Collection concentrates on the rational and most scientific end of the health care spectrum, on methods of care that can be rigorously and objectively evaluated. Unfortunately the indications for and possible value of many currently popular methods: of mainstream health care and investigation cannot be evaluated in this way because they depend substantially upon the personal inter-reactions and beliefs of the therapists and their patients. There is still a great deal of faith healing in current medical practice; and even with the most died-in-the-wool member of ASI a kindly, reassuring and generally optimistic manner can still work wonders. But while faith healing placebo effects can sometimes be measured objectively in controlled trials of drug therapies, similar belief-mediated effects can rarely be quantified in much of mainstream medical practice, or for that matter in acupuncture, chiropractic, osteopathy, physiotherapy and psychotherapy where very often a little bit of what you fancy does do you good.

Yet, although the Cochrane Collection has only tackled one end of medical practice it has already brought to both undergraduate and postgraduate medical education a new emphasis on skeptical evaluation of therapeutic options. Hopefully this will help to ingrain the habits of rational analysis in succeeding generations of medicos, and if so it should substantially im-

prove the health care of general populations.

Now to generalise from the above medical model, which concentrates on demonstrating the positive rather than denigrating irrational fringe practices, should Australian Skeptics similarly focus more of our talents and spare time on showing the positive in mainstream areas of knowledge and belief? To win people over to rational skepticism (our doxy) we have to first gain their attention, and if that means telling them the good news they want to hear so be it. As Jean Cocteau put it, "we gently close the eyes of the dead must equally gently open the eyes of the living".

RON WELLS

MAWSON ACT

SOUL

David Clarke (20:3 p 67) is to be commended for broaching the subject of the immortal soul.

My thoughts on this have for some time followed a different but parallel track. The brain is the sum of nerves large and small, the electrical potentials and associated nervous impulses arising from stimulation of the eyes, ears, etc, and the interactions between these at the synapses (nerve junctions), resulting ultimately in consciousness.

Perhaps a disembodied soul could dispense with the sensory inputs, though it would then be a mere shadow of the original consciousness. But the network of nerves and the means to generate the potentials which travel down the nerves are essential. To free the soul from its mortal bonds would require the invisible reconstruction of the network and the chemical support for the electrical potentials in a few litres of empty space.

It would be best if this were done before there was noticeable decline in mental faculties, and certainly before terminal decline took place in the few seconds after clinical death. There is the further requirement of a steady supply of oxygenated blood, providing something of the order of 50 watts of power to keep the system running. Would any electronic engineer care to assert that such a construct is sufficiently plausible to avoid having to discard the concept of the immortal soul? The default option is, as David says, that the soul dies with the body.

Can we therefore dispense with god? I can, except that I occasionally use the word when "bother" seems inadequate.

At a personal level, god clearly has meaning and value to many people. They have a perfect right to their views, even though I tend to regard these views as wishful thinking, and it would be offensive to attempt to force atheistic or Occam's razor-ish arguments on them. But an organised religious group which actively presses its mythology on all and sundry, or even blandly assumes that it knows the mind, and can act as the voice, of god, is fair game.

One should not deny the good that organised religion is capable of: churches provide fellowship and social cohesion, the opportunity to sing your heart out, and to listen to well-constructed and sometimes valuable sermons; World Vision is a large relief organisation worthy of our financial support. But we should be in no doubt that religion has, as used to be said of the British Liberal Party, both feet firmly planted in thin air.

BOB ENTWISTLE
DUNEDIN, NZ

POLYGRAPH

As one who has been polygraphed as many as 10 times I should have replied to Ben Clarke's article in 20:2; Sydney Bockner's letter in 20:3 made it necessary. What both authors seem not to understand is what takes place during a polygraph examination. Both seem to think that the readings are compared to an absolute standard, which is not true.

Professional polygraphers (yes, they have an organization in the US) have certain procedures, which are made known to the examinee. Among them are discussion of the questions to be asked BEFORE readings are taken and taking baseline readings of questions whose answers are not in dispute (eg Identity questions). This serves to determine if the subject is too nervous to proceed, which indeed was the case when I was first examined, as well as establishing what is a "normal", baseline reading for that subject. The readings, then, serve to uncover abnormal reactions to specific questions. Some measurements, like respiration, can be controlled, others (galvanic skin response) less so. It was emphasized that no actions are taken on the basis

of a polygraph examination, the examination serving only to point to possible areas where further investigation is necessary.

I do not maintain that polygraphs are as accurate as fingerprints or DNA tests, nor that they are even "highly accurate"; they are simply one of many tools. It may be that polygraphy is insufficiently accurate for general use, but the article and the letter give the reader no basis for maintaining this conviction. As Mr Clarke noted, polygraph results are not generally used in courts because they do not have the "beyond a reasonable doubt" accuracy that US standards of jurisprudence require. But, beyond that, their use in pre-employment screening and later are controversial because people just don't like a machine influencing their employment prospects. For much the same reason a lot of people balk at drug tests.

GARY GOLDBERG
SILVER SPRING, MARYLAND USA

AEON OBJECTION

An article by Mark Newbrook, titled "Linguistic Reconstruction and Revisionist Accounts of Ancient History," was published in the Winter 2000 issue of this periodical (20:2). There, in his criticism of the way proponents of so-called fringe theories misuse so-called linguistic evidence, Newbrook had a few things to say concerning the so-called Saturnists, neo-Velikovskians, and the journal *AEON*. It is true that, as he says, *AEON* serves as the "main Saturnist journal," and I will even accept that the journal, as he claims, has its "own 'lunatic fringe'." But it is entirely untrue that "one of the *AEON* committee is in fact a retired academic linguist," whom Newbrook classifies as a Nostraticist.

Who, if I may ask, is this supposed individual? And what committee is Newbrook referring to? *AEON* has never incorporated a committee; it only employs a staff. In the past, the staff of *AEON* included a Professor of Art History, a Professor of Philosophy, and an analytical chemist. It does not now count, nor has it ever counted, an academic linguist, retired or not, as a member of its staff.

Newbrook also states that "two other linguists are currently becoming involved" with *AEON*. Apparently

one of these is Newbrook himself for, elsewhere in the same article, he states that he himself is "now being used by the Saturnists as a consultant to *AEON*!" As the Editor of the periodical in question, this is news to me. Who is this supposed other individual and who is supposedly involving him in the production and/or publication of *AEON*? Who has appointed Newbrook as a consultant to *AEON*?

What is happening here?

Do not misunderstand me, I would more than welcome a linguist of Newbrook's standing, or any other academic linguist, as a consultant to our periodical. But, please, when referring to the journal of whose editor I happen to be, let us first get the facts right. Or else credibility might fly out the very first window.

DWARDU CARDONA
EDITOR, AEON

RESPONSE

I am grateful to Dwardu for correcting me on this point. I am sorry that I inadvertently wrote something which turned out to be untrue. I acted in good faith, but it emerges that I was confusing Kronia Communications (which runs the Kronia electronic discussion group) with *Aeon* itself. I have looked back at my earlier exchanges with Ev C and Dave T, quite a number of which related to items in *Aeon*, and it seems to me that my error was pardonable.

In any case, I am happy to have the record set straight: my role as consultant (which has been somewhat informal in any case) has involved Kronia Communications rather than *Aeon*. I assume from what Dwardu says that I may also have misunderstood the role of Roger Westcott, the linguist to whom I was referring, and the roles of the other two linguists referred to (Rens van der Sluijs [Netherlands] and Josephine Bacon [UK]), and my own role in respect of commenting on language matters. However, I am not sure of this, and I leave it to Dwardu to clarify these points if he thinks that is necessary.

I am, of course, happy to comment on any matters involving linguistics, either for Kronia Communications or for *Aeon*.

My apologies once again.

MARK NEWBROOK
MONASH UNIVERSITY

SYNCHRONICITY

Being laid up with the flu the latest *Skeptic* was welcome relief, and I read all with interest, including the Editor's self-indulgence re cricket. Then I returned to reading Alan Wood's *Bertrand Russell the Passionate Sceptic* and found the final paragraph to Chapter 24, where Wood is commenting on Russell's "I have been painfully forced to the belief that nine-tenths of what is regarded as philosophy is humbug." Wood wrote: "If we were to arrange the human race in order of average intellectual integrity, I would give first place to professional cricketers, put scientists some way after them, and put professional philosophers a good deal lower down. It is impossible for a cricketer to be a humbug..."

The unlikely coincidence of the above chance readings seems to me to yet more evidence in favour of synchronicity.

MIKE SHEARER

HERMIT PARK QLD

Who am I to argue with Bertie Russell? I will admit (if tortured) that there is no evidence of philosophers taking bribes from bookmakers, but then I suspect that no one has looked for it.

Ed

COSMOLOGY?

This is just an amusing idea that is something to think about: The engineer student theory (by me).

If anyone knows anything about time travel, they know that to travel to any point in time you need two wormholes - a departure point and a destination. Since no one has invented a wormhole we can not travel back in time, and in the future they can only travel back as far as the first wormhole! So what do you think is going to happen in a couple of hundred years when you can buy a wormhole kit from Dick Smith? Every engineer student who owns a screwdriver will want to build a wormhole and travel back to the **first wormhole!**

So the second we open the first wormhole, a couple of million engineer students will fall out ...

RENEE EASTER

ABOUT OUR AUTHORS

Kathy Butler is Vice President of the Victorian Skeptics and proof that not all prominent Skeptics have beards.

Nicholas Cowdery is the Director of Public Prosecutions for NSW and a long-time contributor to *the Skeptic*.

Maciej Henneberg is the Wood Jones Foundation Professor of Anthropological and Comparative Anatomy at the University of Adelaide

Les Irwig is Professor of Epidemiology, Department of Public Health and Community Medicine, University of Sydney.

Colin Keay, astronomer, is a retired academic and President of Hunter Skeptics.

Michael Jones is a screenwriter who moonlights as an A/V technician.

Paul Kurtz, Professor Emeritus of Philosophy, SUNY at Buffalo, Chairman, Committee for the Scientific Investigation of Claims of the Paranormal, is the founder of the modern Skeptics movement.

Richard Lead is Treasurer of Australian Skeptics and thinks that accountancy is interesting.

Tim Mendham is a former editor of the *Skeptic* who specialises in cross words.

Mark Newbrook is a linguist at Monash University and linguistics consultant to the *Skeptic*.

Bob Nixon is a business analyst and Chief Investigator for Australian Skeptics.

Graeme O'Neill is a science journalist and the author of a soon-to-be-released book on the GM controversy, titled *Just Genes*.

Roland Seidel is a mathematician, computer expert and former President of Vic Skeptics.

Gillian Shenfield is Head of the Department of Pharmacology at Royal North Shore Hospital, Sydney.

Rosemary Stanton is a nutritionist and a consultant to the health departments of several universities and state agencies.

Joan Vaughan-Taylor is a poet who resides in the Blue Mountains.

Ho, Ho, Ho!



We wish all our readers all they would wish for themselves during this holiday season, with the hope that they will remain happily Skeptical throughout the new year, century and millennium that begins on January 1, 2001, regardless of what politicians, fireworks makers and other cranks might think.

In the spirit of seasonal goodwill, we have pleasure in bringing you this photograph of two disgruntled and unsuccessful entrants in the Santa Claus Look-alike Competition, held at the University of Sydney in November.

Across

- 1.&8d This year's big event is fair but not very sporting. (5,8,10)
- 9. Ghostly material like a comic spelt badly. (11)
- 10. Particle shows the moon is up. (3)
- 11. In favour of a Swiss patriot? Thus I predict. (8)
- 13. Correct form of communication? (5)
- 15. Correct and factual version of most of 12 d. (4)
- 16. Easily broken removes the clergyman for better manoeuvrability. (5)
- 17. French and alien. (1-1)
- 20. 105 - my life's work. (1-1)
- 21. Mrs Fawlty knows everything. (5)
- 22. Love this part of a death notice. (4)
- 25. Not observed in place. (5)
- 26. Prim seer is awkward in front of leaders. (8)
- 29. I will be sick. (3)
- 30. Old feet? Old tales. (4,7)
- 31. Godly love child likes a bit each way - a dire morph the result. (13)

Down

- 1. Little bird is a noted builder and speaker. (4)
- 2. Forward firing rocket goes back to earlier fashions. (5)
- 3. Pick the pocket of a sheepish bath. (3)
- 4. Sort of monster you get from giving krypton to a Kenneth. (6)
- 5. Fruit science a peculiarly English study? (8)
- 6. Incorporated, but not for the well. (3)
- 7. Scotch this ghost business. (6)
- 8. see 1 across.
- 12. Learned version of a rude tie. (7)
- 13. Holey existence? The Big Event's thematic state of OKness. (13)
- 14. Ancient frisbee is given direction to 10 across - it's something to talkabout. (14)
- 15. Thanks to tantalum. (2)
- 18. My soap is found in learned get togethers. (8)
- 19. Small saint on a short street. (2)
- 23. Big event's thematic state of body. (6)
- 24. Big event's thematic state of pocket. (6)
- 27. Famous Skeptic moved fast to 501. (5)
- 28. I will be heard! This dot of land found in this level. (4)
- 30. Father right on average. (3)

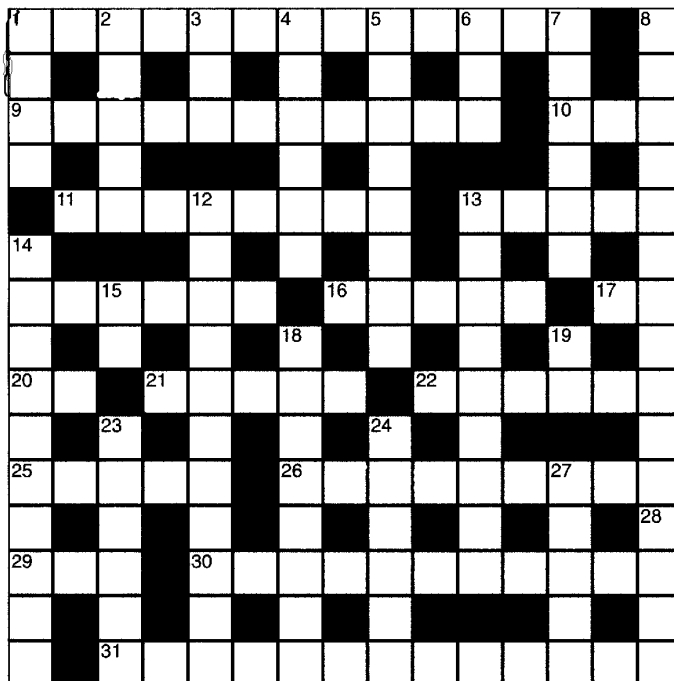
Blatant Plug

Long-time stalwart of the Canberra Skeptics, Julie McCarron-Benson, has donated a prize for the Crossword. It is a package containing sachets of spice mixtures she has labelled under the name "Political Spice". Each sachet has a "political" title (eg Early Election) with a witty message and a suggested recipe.

We thank Julie and are happy to give her a plug. She can be contacted on 02 6259 7895 or on her web site www.michelespantry.com

Copy deadline for the next issue is Feb 1.

**The Skeptic Cryptic Crossword
No 9 Summer 2000**



Return to: Skeptic Xword

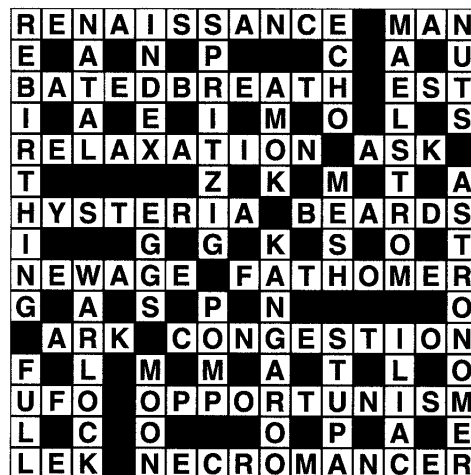
PO Box 268, Roseville 2069

Name: _____

Address: _____

Entries will not be opened until February 1 and the first correct entry opened will be the winner. The prize will be a package of spices from Michele's Pantry (see plug in adjacent column) and a book by Richard Dawkins.

Solution to Crossword No 8



The winner of of Skeptic Crossword No 8, and a copy of Richard Dawkins' *Climbing Mount Improbable* is Raphael Mills of Club Terrace, Vic.

Are you a Skeptic?

Australian Skeptics appeals to rational individuals of common sense, intelligence and with a social conscience, who are interested in actively pursuing the truth about claims of paranormal or pseudo-scientific phenomena and other irrational popular beliefs, from a responsible and scientific perspective. For more than twenty years it has established a national network of like-minded groups which, by investigation and the application of critical thinking, aims to help free our society of the results of fear bred by irrational thinking.

*We seek the evidence.
We challenge the claims.
We don't believe everything we hear .
We encourage the public to adopt a critical attitude towards these claims.*

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