

the skeptic

Volume 28, No 1 : Autumn 2008

A Journal of Fact and Opinion

PSYCHIC DETECTIVE LESSONS

**THE PLACEBO
EFFECT EXPLAINED**

**VITALISM AND
MYSTICAL ENERGIES**

**SKEPTICISM
IN SCIENCE**

**POOR ROLE
MODELS**



How To Communicate
With Murder Victims

DO'S

- CHECK FOR A PULSE
- TRUST YOUR INSTINCTS
- EVERYONE IS PSYCHIC
- HUG THE DEAD

DO NOT'S

- NO PAST LIVES
- NO TAROT CARDS

**A Psychic Course On How To
Contact Missing Persons
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Editor

Barry Williams

Associate Editor

Karen Stollznov

Contributing Editors

Tim Mendham
Steve Roberts

Technology Consultants

Richard Saunders
Eran Segev

Chief Investigator

Ian Bryce

All correspondence to:

Australian Skeptics Inc
PO Box 268
Roseville NSW 2069
Australia
(ABN 90 613 095 379)

Contact Details

Tel: (02) 9417 2071
Fax: (02) 9417 7930

e-mails: skeptics@bdsn.com.au
editor@skeptics.com.au

Web Pages

Australian Skeptics
www.skeptics.com.au
No Answers in Genesis™

<http://home.austarnet.com.au/steat/default.htm>

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Editorial consultants:

Dr Stephen Basser (medicine)
Dr Trevor Case (psychology)
Dr Richard Gordon (medicine)
Dr Pete Griffith (biochemistry/microbiology)
Dr William Grey (philosophy)
Prof Colin Groves (anthropology)
Mr Martin Hadley (law)
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Dr Stephen Moston (psychology)
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Dr Steve Roberts (chemistry)
Mr Roland Seidel (mathematics)
Dr Karen Stollznov (linguistics)

Branch correspondents:

ACT: Mr Michael O'Rourke
Gold Coast: Mr John Stear
Hunter: Dr Colin Keay
Qld: Mr Bob Bruce
SA: Mr Allan Lang
Tas: Mr Fred Thornett
Vic: Mr Ken Greatorex
WA: Dr Geoffrey Dean

Onward and Upward

In early 1981 the first issue of *the Skeptic* appeared as a four-page tabloid, containing mostly reprints of overseas stories and with around 200 subscribers. Twenty eight years on, and *the Skeptic* continues to inform and entertain its readers — or so the kind words so many of you penned on your renewal notices would indicate. And your numbers have increased more than tenfold since our modest beginnings.

There have been many changes over that time, certainly in the appearance of the magazine, but by far the most important changes have been in the quality of the articles. We no longer rely on reprints of previously published works, although we still occasionally use them when the piece is of high quality and the subject warrants it.

Most encouraging is the number of people, from all walks of life, who are pleased to see their work published in *the*

Skeptic and who are prepared to give us the benefit of their expertise in so many disparate fields. Among them we number several contributors and reviewers from overseas, most notably our regular Nigerian correspondent, Leo Igwe, who lives in a country

where open Skepticism carries far more perils that we are ever likely to encounter in Australia.

Our readership encompasses a wide range of professions and occupations, among the most numerous being teachers and medical (and

associated) practitioners, as one would expect, given that these professions are often in the front line of the dispute between reason and irrationality. Perhaps not surprisingly, scientists, academics and engineers are well represented, but so too are lawyers, accountants, students, business people, public servants, farmers and artists — a wide cross section indeed.



We are also delighted to number more than 50 libraries (including nine in the USA, two in New Zealand and one in Canada) among our longtime subscribers, thus assisting to spread our message to a wider audience.

Over many years, through dedicated hard work by a lot of people, a readiness to comment in the media and a willingness to debate contentious issues, the Skeptics have built up an outstanding network of expertise and enthusiasm.

This encompasses our subscribers and a nation-wide group of mutually supporting autonomous Skeptics bodies.

Crucial to this network is *the Skeptic*, a journal which, from humble beginnings, now ranks among the very best of its kind in the world. Add to this our various web sites, vodcasts, blogs, and other electronic media we use to propagate the message of skepticism and critical thinking to the world and our influence is far from negligible. But we need to do more, and that is what we are planning to do.

The future

In order to see where we are going and to improve our impact among the public, in early April some 45 delegates from the Skeptics network across the country will be meeting in Wagga Wagga, NSW, to engage in a weekend of mutual brain-picking and good fellowship.

Topics under consideration will include:

ways of determining the most important issues that confront us;

developing strategies for promoting our ideas using media and marketing techniques, especially among under-represented groups such as the young and women;

best methods of lobbying authorities and MPs to achieve change; and

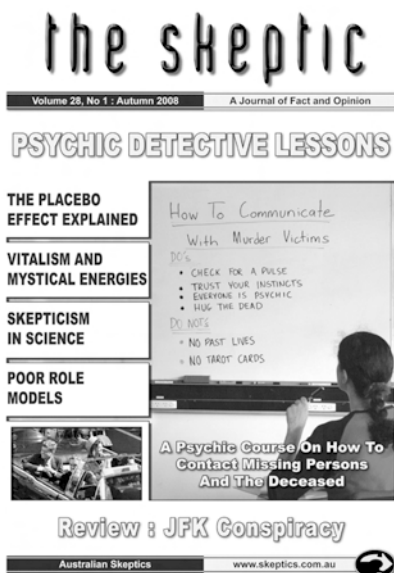
ways of improving co-operation and communication within the broad Skeptics family.

This gathering, the first of its kind with such a broad reach, will be sponsored by the Australian Skeptics Science and Education Foundation. The Foundation, an independent body, is the beneficiary of a number of bequests. Its purpose is to fund the Skeptics groups in their work, and to support other projects dedicated to our primary concerns. We are very grateful to them for their generous support.

Different way of receiving the Skeptic

While we are looking at modern communications, did you know that you can now subscribe to the Skeptic via email? If you would prefer the electronic version (as a PDF) let us know and we will send you each new issue, hot from the presses and straight to your computer.

Barry Williams



Skeptics Around Australia

New South Wales

Australian Skeptics Inc
PO Box 268, Roseville NSW 2069
Tel: (02) 9417 2071 Fax: (02) 9417 7930
contact@skeptics.com.au

Hunter Skeptics

PO Box 166, Waratah NSW 2298
Tel: (02) 4957 8666, Fax: (02) 4952 6442

Victoria

Australian Skeptics (Vic) Inc
GPO Box 5166AA, Melbourne VIC 3001
Tel: 1 800 666 996
vic@skeptics.com.au

Borderline Skeptics

PO Box 17, Mitta Mitta VIC 3701
Tel: (02) 6072 3632
skeptics@wombatgully.com.au

Queensland

Queensland Skeptics Assn Inc
PO Box 6454, Fairfield Gardens QLD 4103
Tel: (07) 3255 0499
qskeptic@uq.net.au

Gold Coast Skeptics

PO Box 8348, GCMC Bundall QLD 9726
Tel: (07) 5593 1882 Fax: (07) 5593 2776
lderrick@bigpond.net.au

ACT

Canberra Skeptics
PO Box 555, Civic Square ACT 2608
(02) 6121 4483
act1@skeptics.com.au

South Australia

Skeptics SA
52B Miller St Unley SA 5061
Tel: (08) 8272 5881
laurieeddie@adam.com.au

Western Australia

WA Skeptics
PO Box 431, Scarborough WA 6922
Tel: (08) 9448 8458
happs@istnet.net.au

Tasmania

Australian Skeptics in Tasmania
PO Box 582, North Hobart TAS 7002.
Tel: (03) 6234 4731
fredthornett@gmail.com

Darwin Skeptics Contact

Tel: 08 89274533
brer23@swiftsl.com.au

Around the Traps

Unreal reality

What is it with ‘documentaries’ these days? Recently we saw *The Real Apollo 11 Story*, an English production that promised to ‘reveal’ hitherto unknown secrets of the flight.

Like that it was really dangerous!!

(Sitting on top of a couple of thousand tons of highly volatile fuel? Who’d have thought it?)

That the lander was very low on fuel when it landed!!!

(Not quite as low as the show intimated. The lander was within 30 seconds of the “Bingo” point, the point at which they had to land within 20 seconds or abort, not the point at which the fuel ran out. There was about 45 seconds of fuel left, not 15.)

That the lander’s computer failed a number of times during the descent!!!!

(When the professional pilots aboard took manual control and the professional engineers at Houston worked around the problems.)

That President Nixon had another speech written in case the landing had failed!!!!!!

(Nixon might not have been everyone’s cup of tea, but he wasn’t stupid. Of course he would have had a speech prepared in case of disaster.)

The point being that, almost 39 years after the Eagle landed at

Tranquillity Base, not one of these revelations was a revelation. Most of them, along with other sensationalist claims made in the show, have been known for well over 30 years.

Of course the Apollo Programme was dangerous — very dangerous — but the fact remains that two earlier missions had circumnavigated the Moon and six other missions followed Apollo 11, without killing any of the astronauts. Apollo 13 was as close to a disaster as it was possible to get, and yet those three crewmen returned safely home.

The only fatalities involving Apollo missions were the three astronauts who burned to death in a grounded command module, two years before the first circumlunar flight of Apollo 8.

It’s bad enough that cranks get so much publicity for their vacuous claims about the whole thing being a hoax, but when documentaries purporting to tell the ‘real’ story opt for such silly sensationalism, one has to wonder if there are any sensible people left.

Sticking to his last

Skeptics, along with everyone else, were very probably horrified at the revelations in a recent court case of a man who, without any of the necessary qualifications, had worked on the maintenance of Qantas

Boeing 747s. When you are hurtling along in a thin-walled aluminium tube at a substantial proportion of the speed of sound, in an atmosphere as thin as boarding-house soup, it is comforting to think that the folk servicing the tube have passed all the necessary exams. But you would be less than sanguine if you thought that they might be no more than talented amateurs.

We were properly outraged at that case, but how many of us barely bat an eyelid when consulting ‘alternative health’ practitioners?

Let’s face it, common old *homo sapiens* is a far more complex machine than anything Boeing ever constructed, yet too many of us blithely consign our maintenance and servicing to someone whose entire knowledge of our structure and mechanics might well have been gleaned during a three-day course (we saw one such advertised in *Nova*, a New Age mag, last week).

Literary spooks

Over there in South Australia, they certainly do things differently.

We hear that the City of Tea Tree Gully (a northern suburb of Adelaide) had a haunted library, so what did the city fathers do? They employed a spiritual adviser, naturally, to rid the building of ghosties, ghoulies, sinister spirits and things

that go bump in the night. Not an exorcist, of course, for that would be pandering to silly superstition. No self-respecting local government bureaucrat would want to be seen condoning that sort of thing.

According to the local fish-wrapper, the advisor carried out 'certain procedures' to address the concerns of

some staff who 'felt uncomfortable' at 'less explainable things' when the building was 'largely unoccupied'.

Now that's a story that should halt the presses around the civilised world.

Deadly Godly dispute

Much more tragic was the case in Tumut, NSW, where two British fruit-picking back-packers got into a heated dispute over whether evolution or creationism was the more accurate explanation of the state of the world.

The upshot was that Rudi Boa, a Scottish biomedical scientist who favoured evolution, was stabbed to death by Englishman, Alexander York, the creationist. York was later sentenced to five years jail for manslaughter.

Great shot, Sir

Note to all cricket commentators.

Tracer bullets are designed to burn a small amount of a pyrotechnic substance so their trajectory becomes visible, thus allowing the gunner to correct his aim.

They travel in the same trajectory and at the same speed as the ordinary ammunition among which they are mixed. If they didn't, they would not be of much use for tracing the trajectory.

Without comment

We regret to announce that due to unforeseen circumstances beyond our control, the publication of

The Astrological Magazine

will cease with the December 2007 issue.

*All unexpired subscription amounts will be refunded shortly.
We thank all our subscribers for their kind co-operation in this matter*

Saying 'the ball sped to the boundary like a tracer bullet' means that the ball glowed, not that it went fast. 'Tracer balls' might be quite useful for day-night matches on grounds where there is no lighting, but not for much else.

Starzis of the Nazis

It has long been a claim of the astrological fraternity that one of their number, Louis de Wohl, was of great assistance to the British military authorities during WWII.

The story went that de Wohl, a refugee from Occupied Europe and an astrologer, informed British military intelligence that Hitler consulted astrologers. He claimed that, as an astrologer, he could cast horoscopes for Hitler and other top Nazis, and could thereby alert the military intelligence services to the sort of advice the Nazi hierarchy was getting.

Now, that claim has been shown to be no less of a fabrication than any other pronouncements from such sources. While he was employed by the authorities (the SOE) for a time, recently declassified and released documents in the National Archives, show that MI5 officers were less than impressed by de Wohl's claims, one describing him as "a charlatan and impostor", and other opinions were similarly uncomplimentary.

Moreover, he was prone to embarrassing his handlers by inflating the

importance of what he was doing, and of his social status. He variously claimed to be a Hungarian nobleman, the nephew of a famous Austrian conductor (orchestra, not bus) and indulged in various other fantasies.

Even his claim that Hitler took advice from as-

trologers is now believed to be pure fabrication. For all his manifold strange beliefs, the only reference anyone can find to the Fuhrer's opinions of astrology shows that he thought it was rubbish.

An apology

Time for a *mea culpa* from the minions of *the Skeptic* Subscription Department.

Recently, a number of you (those for whom we don't have a current email address) received a printed Reminder Notice that your subscription had not been renewed. This Notice did not contain a return address (though the envelope containing it did) and many of you took the opportunity to remind us of this oversight.

Much as we would like to claim it as a cunning piece of reverse psychology, designed to cause subscribers to give deep thought to the Notice, the truth is that it was indeed an oversight, and for this we apologise.

However, this (albeit inadvertent) reverse psychology seemed to work a treat. The response level for this notice was far higher and much quicker than that attracted by previous ones.

Maybe the next time we should send out a cryptic notice simply stating "Cough Up!" (or perhaps not).

Bunyip

Skepticism in Science

A timely salutary warning about mixing dogma and science

This is the text of Sir Guy Green's Keynote Address to the Australian Skeptics National Convention, held in Hobart on the weekend November 17-18, 2007

Introduction

In the whole of human history there has never been a phenomenon comparable to the advances in science and technology which started at the beginning of the scientific revolution in the 17th Century and are continuing today at an accelerating rate. But impressive as these developments have been, we cannot be complacent about them. In fact as a society we are not as intellectually sophisticated or mature as we would like to think we are. Even in this 21st Century we are subject to influences which can impair or corrupt the doing or application of science. And that is the case especially in the field of environmental science.

I shall be discussing three kinds of such influences. First, the corruption of science by dogma or ideology; secondly, misconceptions about the nature and methodology of science; thirdly, a version of the precautionary principle which is a product of a combination of both those vices.

Dogma and Ideology in Science

Dogma is one of the oldest and most insidious threats to the advancement of science. Famous examples include the church forcing Galileo to

recant his claim that the Earth is not the centre of the world but moves around the Sun — an injunction the church imposed, not because it had scientific evidence to the contrary, but simply because Galileo's assertion was in conflict with the doctrines of the church.

In same way, in the 19th Century, the violent opposition to Darwin's theory of the origin of species by natural selection was not based upon scientific argument, but was derived from religious doctrine. And that conflict between science and religion is still with us today. In the United States especially, there is continuing debate about attempts by schools to give the teaching of creationism the same status as the teaching of evolution.

I make no comment about the place of religion in the lives of human beings or upon the right of churches, schools or parents to promote or pass on religious beliefs. The point I am making is that religious beliefs and scientific reasoning occupy quite distinct domains which should not be confused with each other and that when they are confused, science is corrupted.

It is not only religious dogma which threatens science. The doing of science is corrupted when it is influenced by any ideology or belief system which is based upon values as opposed to reasoning or evidence. For example, it was not only reli-



Sir Guy Green is a former Chief Justice and Governor of Tasmania and has acted as Administrator of the Commonwealth in the absence of the Governor General.

gious but social doctrine which militated against acceptance of Darwin's theory. As the wife of the Canon of Worcester Cathedral cried out upon being informed that the theory implied the descent of man from ape-like creatures:

Descended from the apes! My dear, we hope it is not true. But if it is, let us pray that it may not become generally known!"

While that story may be apocryphal, it does reflect another form of opposition to Darwin's theory, which was based on the dogma of man being a unique and superior species.

A more recent example of the malign influence of ideology upon science occurred in the 1940s, when scientists in the Soviet Union were forced to accept Trofim Denisovich Lysenko's fallacious theories about the inheritance of acquired characteristics — not because they satisfied the criteria of scientific acceptability, but because they supported the particular form of Marxism favoured by Josef Stalin. That was a particularly serious episode, it resulting in the persecution of geneticists who disagreed and the discrediting of Soviet biology and agricultural science for a generation.

Modern examples

Those examples are not isolated curiosities in the history of ideas. The influence of ideology upon science is still very much alive today.

In a major work which has just been published, *Science and Public Policy: the Virtuous Corruption of Virtual Environmental Science*, Professor Aynsley Kellow convincingly demonstrates the existence of what he calls "the virtuous corruption" of environmental science, by which he means the corruption of science in order to serve what is seen as a good cause. As he observes:

Lysenkoism might appear to be a rather extreme example of social and political factors influencing the conduct of science but, there is ample evidence that much of the science relating to environmental problems is at least at risk of being contaminated by similar influ-

ences.

One of Professor Kellow's many telling examples is the saga of the listing by the International Union for the Conservation of Nature and Natural Resources of a sort of mountain goat named *pseudonovibos spiralis* as an endangered species. In fact, as Kellow comments, the IUCN's assessment of the risk of extinction of the species "surprised many scholars because there is every indication that *pseudonovibos spiralis* was more than extinct — that it had not just ceased to exist, but that it *never had existed*". It is in short a mythical animal. But despite that it remains on the list because its existence, Professor Kellow suggests, serves other agendas, such as supporting arguments for the preservation of habitats. Incidentally, asserting the reality of this mythical creature also serves the interests of the Cambodian traders who sell fake *pseudonovibos* horns to gullible collectors and locals who believe it protects them against the effects of snakebite.

Even when we enter the apparently free domain of mathematics we find that science is subject to ideological influences.

In a recently published work rather challengingly entitled *Useless Arithmetic: Why Environmental Scientists Can't Predict the Future*, the authors cite many examples where quantitative mathematical modelling has been corrupted by ideology. They include the Club of Rome's 1972 publication *Limits to Growth*, which used modelling to support their prediction that, by the year 2000, societies around the world would be subject to catastrophic breakdown as a result of the total exhaustion of natural resources and massive environmental destruction.

That is more than an example of the failure of a grossly defective model — although it certainly was that — it is an example of the corruption of science, because of the telling comment made by a Club of Rome official shortly after the report

was released, that the idea was "to get a message across, and to make people aware of the impending crisis." The authors of *Useless Arithmetic* comment:

In other words the model outcome had been determined before the model was run. Finding the truth according to a preconceived opinion or philosophy is a common flaw in applied mathematical modelling. And it is very similar to finding truth that matches one's religious faith.

The authors cite numerous other examples to support their conclusions that many modelling studies are politicized, that their authors are "not unlike religious fanatics" and that many of those engaged in mathematical modelling are very defensive about their work, with the result that it is not subject to:

the usual broad based vigorous debate criticism and constant attempts at falsification that characterize good science.

In the work I have already cited Professor Kellow presents a fully supported case for concluding that:

The extensive reliance [in climate science] upon models and the significant manipulation of their source data creates the danger of virtuous corruption, just as the values of those who wish to push policy prescriptions onto policy-makers and the public can (even if inadvertently) contaminate the conduct of their analysis.

A serious case

A serious example of the misuse of models in order to produce a politically correct result occurred in 1992 when the United States Environment Protection Agency used a model to support its claims that environmental or "second hand" tobacco smoke was a class A carcinogen, causing several thousand deaths a year in the United States. In subsequent judicial proceedings the EPA study was declared to be void, on the grounds that the methodology had been adjusted and data had been selectively used or rejected, so as to ensure that the

model supported the conclusion the Agency was promoting, and which it had reached before the study was undertaken.

That decision was later set aside on appeal, but only on the technical issue of the judge's jurisdiction to review the EPA report: his findings were not impugned; but to this day the claims made by the EPA are cited to support claims about the effects of second hand smoke.

I am not making any comment about the effects of second hand smoke, but studies like that seriously impair proper consideration of the issue. Indeed, if, as other evidence appears to indicate, environmental tobacco smoke does pose a health risk, flawed studies such as the EPA study are seriously counterproductive to efforts to combat it.

Bizarre post modern ideas

Another way in which science is corrupted by ideology is to be found in the bizarre application, by post modern theorists, of scientific conclusions to quite inappropriate disciplines. Examples include the application by post modernists of mathematical logic to political theory, Einstein's special and general theories of relativity to sociological questions, non Euclidian geometry to a special space in which wars are said to be conducted, and the application of chaos theory to literary analysis. It is hard to believe that anyone can advance this sort of thing with a straight face, but they are deadly serious about it, and post modern thinking continues to be influential.

The advancement and application of science are also adversely affected when ideology distorts the way in which scientific issues are discussed and dealt with by the public and by decision makers.

Ideological positions are embedded in the emotional and value laden language used in environmental debate. Take the description by

the sub-editor of an English tabloid newspaper of products derived from genetically modified crops as "Frankenstein Food"; he probably felt quite proud of himself — after all, the headline was eye-catching, and alliterative to boot. But one could hardly imagine a journalistic approach better calculated to arouse fear and prejudice, and inhibit clear thinking about genetic modification.

The doing of science is corrupted when it is influenced by any ideology or belief system which is based upon values, as opposed to reasoning or evidence

For millions of people, every time the issue of genetic modification of crops is raised, Frankenstein Food will pop into their minds. Expressions and language like that — and there are many other examples — might be acceptable in social debate, or when you are trying to convey feelings or persuade people of something, but they have no place in serious science based discussions.

The Skeptical Environmentalist

As another illustration of the ideological distortion of debate about

scientific issues, consider the reaction to the work *The Skeptical Environmentalist*, written by a Danish scholar Bjørn Lomborg. Published for the first time in English in 2001, the work deals with environmental concerns about the depletion of natural resources, the effects of human population growth, the loss of biodiversity and the pollution of water and the atmosphere. In a 500 page analysis of the evidence, Lomborg argues that these fears are either unfounded or exaggerated.

I do not express any opinion as to whether or not Lomborg's thesis is valid. But what I do wish to comment on is the way in which his thesis has been debated. The response to *The Skeptical Environmentalist* has been very disturbing. Much of it consists of attacks on Lomborg personally. But Lomborg does not rely upon his qualifications or personal opinions to sustain his case — his work stands or falls on the evidence, and the arguments he advances; it follows that the personal attacks on him are gratuitous, irrelevant and of course quite unscientific. But even when it is the book, rather than the man, which is being addressed, the way in which the issues he raises have been discussed has been just as unedifying and unhelpful.

A review of the book was published in the journal *Nature*. In that review which was later fairly characterised by correspondents to the journal as "peevis" and "part of a rush to rubbish Lomborg's book", the authors expressed the conclusion that Lomborg's survey "reads like a compilation of form papers from one of those classes from hell where one has to fail all the students". It is a troubling indication of the depths to which debate about environmental issues has descended, when it is thought appropriate to include

puerile material like that in what purports to be a serious review of a serious book, in one of the most prestigious scientific journals in the world.

Similarly, in the case of Lomborg's book, the *Scientific American* decided to depart from its usual practice of publishing one-page book reviews, written with detachment by recognised experts in the field, and instead published a special eleven page section on the book, written by academics known to be associated with environmental advocacy. Their articles were not balanced reviews but polemical attacks which were accurately summarised by *The Economist* as "strong on contempt and sneering, but weak on substance".

Not all Lomborg's critics used verbal abuse. In September 2001 at the launch of Lomborg's book in an Oxford bookshop Mark Lynas, a widely published writer on climate change, decided to present his thoughtful, scholarly conclusions about the book by smashing a pie in Lomborg's face.

That the personal attacks on Lomborg, and the partial and intemperate reviews of his book, represent a serious departure from the norms of scientific debate and academic behavior is bad enough in itself, but by perverting proper debate about the issues which he raises, the most serious casualty is science itself.

Misconceptions about the nature and methodology of science

I turn to the second trend which is subverting the doing and application of science: a failure to understand the essential nature and limitations of science and its methodology.

The phenomenal growth of scientific knowledge has given rise to an exaggerated belief in the capacity of science to provide us with complete and conclusive answers to questions about almost every aspect of our society. Increasingly the media, consumers, decision makers and the general community are

demanding clear cut unequivocal answers to questions about everything from climate change, dietary requirements or genetically engineered crops, to the efficacy of a new drug. But what they fail to appreciate is that certainty in science is a myth, and that all scientific statements are provisional only, being no more than the best fit for the data as they are currently known, so that it is simply not possible to give unqualified answers to questions of that kind.

An example is provided by the popular response to the publication of the *Fourth Assessment Report* by the Intergovernmental Panel on Climate Change. The Report makes numerous references to uncertainties in the data and incomplete understanding of the phenomena which are the subject of the report. It very properly expresses reservations about the extent to which the projections in the report can be used to predict climate change and future sea level rise, but those uncertainties and qualifications have been barely mentioned in the media or public debate about the report.

Unfortunately, it is not only non-scientists who perpetuate the myth of certainty in science. Some scientists themselves, through the confidence with which and the unqualified terms in which they express their opinions, or report the results of their research, bear just as much responsibility for perpetuating this misconception of science. That has been exacerbated by the readiness of some scientists to announce research findings to the popular media before they have been published in academic journals, or been critically examined by other scientists.

Capacity of models

Another example of a failure to understand the nature and the limits of science is an exaggerated belief in the capacity of mathematical models — usually computer generated — to provide us with knowledge of the world.

There is no doubt that modelling is a very useful tool. It would be hard to find any field today which does not rely upon some form of modelling. Models can generate hypotheses which might not be conceived if we were to rely solely on human reasoning and imagination; they can facilitate research and design; and they can enable analyses of data to be undertaken that would otherwise be virtually impossible. Indeed, in the general sense of it being a technique which involves the representation or mapping and manipulation of a manageable subdivision of the physical world, a great deal of science can be seen in essence as a form of modelling.

But like science generally there is a widespread failure to understand the limitations of mathematical modelling.

A basic but common error is to forget that a model is not real. That sounds an obvious thing to say, but it needs to be said because the output of models is routinely presented in such a way as to suggest that the thing represented by the model is the thing itself. Thus, one frequently reads in the popular media, and even in the scientific literature, statements to the effect that a model or simulation "proves" or "shows" that something in the physical world is the case. But such assertions are self-evidently unsound. By definition, all models are incomplete; the validity of the output of a model is dependent entirely upon the soundness of the data, and the validity of the assumptions upon which it is based. Strictly speaking, the only statements which a model can make are statements about itself. A model can be a useful tool, but only when it is used in conjunction with empirically based science.

At the root of the problem is a failure to understand that mathematical modelling is a qualitatively different activity from the methodology of observation, measurement, analysis, experiment, and the making of falsifiable predictions

about the real world, which comprise the doing of science.

In the work to which I have already referred, *Useless Arithmetic*, the authors present a convincing case showing how inadequate mathematical modelling has proved to be in dealing with complex systems. The problems, they argue, do not just reflect defects in the particular models they cite, but are endemic to the modelling of any complex environmental or human process. They support their case by an analysis of the inadequacies of some two dozen quantitative modelling studies ranging from shore line erosion rates to global sea level change.

It is not only in respect of complex systems that over reliance is placed upon modelling. A dramatic example was provided by the design of the Millennium pedestrian bridge across the Thames. This magnificent structure had to be closed two days after it had been opened because the synchronised responses of pedestrians to random movements in the bridge set up dangerous oscillations. The failure to predict this phenomenon was a direct result of the designers relying upon predictions made by computer models of the behaviour of pedestrians on the bridge, instead of their making empirical investigations of the behavior of real human beings on a real bridge.

The precautionary principle

The third example of influences which impair the doing or application of environmental science is the lack of intellectual discipline coupled with ideology, which is reflected in the formulation and application of the precautionary principle.

The precautionary principle is frequently referred to in discussions about environmental issues, and in regulatory regimes governing environmentally sensitive activities. But a threshold problem about applying the principle is that it is routinely referred to as if it had a single universally accepted meaning. But it does not. When it first gained currency the principle was generally understood to mean that where proposed activity might cause irreversible environmental harm, a

being used. Unfortunately in discussions about environmental issues you will routinely hear the expression precautionary principle being used without it being defined, with the result that the discussions are confusing and unproductive.

There is a more serious problem with the application of the precautionary principle. The form of the principle most commonly advanced by environmentalists is that no activity should be undertaken unless it can be demonstrated that that

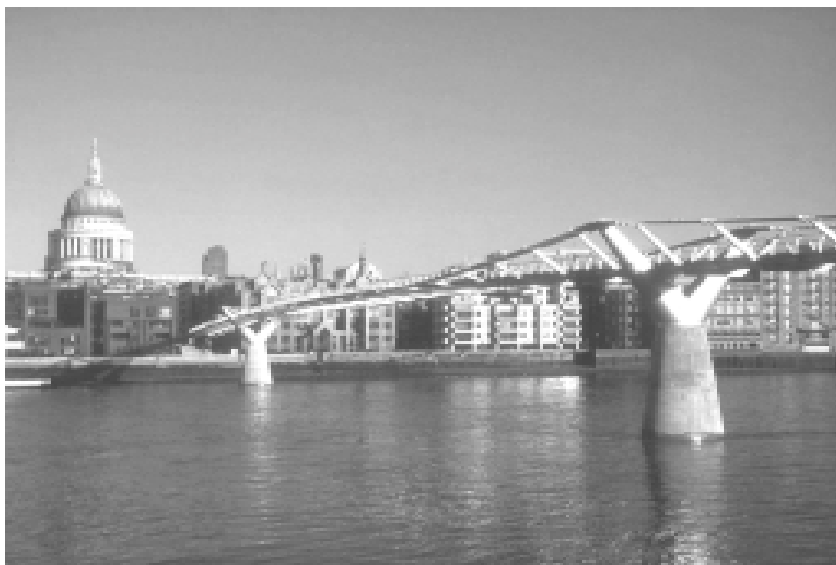
activity will not cause environmental harm. At first sight that appears to be a reasonably defensible proposition, but when it is analysed it, in fact, turns out that it is impossible to comply with. Until we know everything about everything in the universe it is a logical impossibility to prove a negative of that kind.

That is brought home to us when we reflect upon complex or chaotic systems which are sensi-

tively dependent upon initial conditions, and in which even the most limited action is capable of generating large and unpredictable effects. In other words, we can never prove conclusively that a particular action will not have an adverse consequence somewhere in the world at some time in the future. It follows that that form of the precautionary principle precludes us from ever doing anything at all again.

In case it is thought that I am being extravagant in my characterisation of where the application of that form of the precautionary principle leads us, let me cite a concrete example.

I return to my reference to the inclusion by the IUCN of the mythical horned mountain goat *pseudonovibos spiralis* as an endan-



Millennium Bridge, London.

Photo courtesy www.freefoto.com/download/31-01-12

lack of full scientific certainty is not a sufficient reason for not taking measures to guard against that harm. But over the years the principle has been given a number of different formulations in international agreements and in legislation and policy statements. Some formulations make the principle applicable where harm is possible while others make it applicable where harm is probable — two very different tests. Other formulations, including the well known Rio Declaration, introduce the notion of cost effectiveness into the application of the principle.

The fact that the principle is given different formulations doesn't invalidate it, but it does mean that to be meaningful, the principle has to be defined in the terms of the particular context in which it is

gered species. By 2003 the IUCN had reached the point where it could no longer ignore the expressions of doubt that were increasingly being voiced about the reality of this creature. But that did not result in it removing it from the list; instead the IUCN invoked "the precautionary principle" which they concluded "requires us to assume that the species did exist, and may still exist". So there you have it: this most serviceable principle can be used to deem the existence of any species you choose, mythical or otherwise, which you cannot conclusively prove does not exist.

In these comments I am not arguing against the concept of some kind of precautionary principle: of course we should be circumspect about taking action which might have irreversible environmental


consequences. But if the principle is to be invoked it must be defined and applied in an intellectually disciplined way in the terms of the particular domain in respect of which it is being invoked.

Conclusion

I am not suggesting that the doing or understanding of science is universally flawed. In relation to the great bulk of science that is not the case. But the examples I have given are sufficient to show that we cannot be complacent either.

It is intrinsically harmful when any field of intellectual endeavour is misapplied, or is distorted by dogma or ideology, or its scope or methodology are not properly understood, but it is especially harmful in the case of science.

The resolution of social issues and the development of Government policy are today more dependent upon science than has ever been the case before. Predicting and responding to climate change, resolving issues relating to genetic engineering, planning the management of water, energy and natural resources, and determining policies in areas ranging from ageing and health care to defence or telecommunications, are just a few examples of fields where the input of science is an essential component of the decision making process.

That is why it is important that we confront the sort of issues to which I have referred and that is why the philosophical approach of the Australian Skeptics has never been more important than it is today. 

Calling all Kids in Years 8-12

Skeptics in Western Australia want to know what you think of their website:

www.undeceivingourselves.com.

It has lots of short easy-to-read articles showing skeptics undeceiving themselves about horoscopes, psychics, water divining, UFOs, weeping statues, all the usual fun stuff.

When told about our website, teachers and schools rushed to check it out, but not skeptics like your mum and dad. The graph says it all.

So if you are in school years 8-12, WA Skeptics want to hear from you.

What do you like or dislike about our website?

How would you improve it?

Do your teachers know about it?

Which are your favourite articles?

What cool targets have we missed?




How can we make ours more interesting?

What skeptic websites are more interesting than ours?

Should we give it away and put skeptic stuff on YouTube instead?

Show your mum and dad what real skeptics can do and email an avalanche of comments to WA Skeptics at happs@istnet.net.au before 30 April 2008.

The most constructive comments will receive a young person's skepticbook and fame forever. 

How to Communicate with Murder Victims

Learning to be a psychic detective

We previously met Nancy Bradley as the raucous psychic spruiker (*the Skeptic*, 27/2). I saw a more relaxed and subdued Nancy when I attended a Psychic Development Course at her home in Placerville, California. None of her wit was gone, though, as “The Celebrities’ Psychic” shared psychic anecdotes and droll quips about her legion of ex-husbands.

Quite like John Edward, Nancy began her career as a dancer. Growing up in New York, she moved to Las Vegas to dance, but soon realised that her true calling was to become a professional psychic. This career change paid off, and she now claims to be “the top psychic, healer and empowerment coach in the world.”

Apparently, Nancy has a crew of loyal clients and is booked three months in advance. Here’s what Jane G. says about Nancy:

Chuck had a reading with the Dalai Lama who went to his hotel room. After the reading he took what he had heard with a grain of salt. He said, ‘I take more credence in what Nancy tells me.’

Every Friday, Nancy holds these classes from the lounge room of her modest home, the “Truth Center... where only truth in psychic work is accepted.” The classes treat a whole range of practical psychic topics, including astral travel, automatic writing, ghost busting, séances, and finding missing persons; with titles that titillate:

Nancy Talks to Deceased Celebrities, Bringing your Valentine to You, and Monsters Among Us — Real Creatures that still Walk the Earth.

The class I attended was a lesson on how to become a psychic detective:

Communicating with Murder Victims — Help Soothe and Find their Bodies.

Apparently, four million people receive Nancy’s email newsletter, but only a fraction attended this class. I was in a room full of psychics, from novices to professionals, all in various stages of their psychic growth. But these courses are for everyone. Like a mantra, Nancy assured us that everyone has psychic abilities!

As a fundamental question, Nancy asked, “How many of you think you’re already up for communicating with those who’ve been murdered?” In a room of some 25 psychics, a mere five raised their hands. “Yes, it is a tough job”, Nancy murmured sagely, “Not everyone wants to do this painful work.” But we were all there to learn, and all could learn to find missing murder victims, soothe their distress and help their ‘transition’ to the afterlife.

Before the lecture began, Nancy implored us to be patient in our acquisition of the necessary skills. We need to, “trust the self, to trust our instincts and learn the work in baby steps. This is a long-term goal and we need to develop the tools for this gift”.



Karen Stollznow, the Assistant Editor of the Skeptic and NSW committee member, is presently lecturing in linguistics in the USA. www.bad-language.com

But “until you’re an expert, don’t bother the police.” Learners should experiment first by monitoring current cases. Then, test your ability to predict clues and the location of the subject. Watch and learn from afar, and chart your own personal success. Consistency is vital. One must be 100% accurate over the course of eight cases before one has achieved ‘expert status.’ You must be able to prove to your psychic teacher, and to yourself, that you are capable of this work before you ever approach the authorities to offer your services. “DO NOT force it to happen! Put yourself in the shoes of the family — don’t offer false hope and faulty leads.”

Apparently, the police are bombarded with bogus leads from “phony” psychics. The government estimates that for every one true psychic there are 50,000 shonky psychics. The Truth Center “legitimizes psychic work”, because, “Currently, anyone can put out a shingle and call themselves a psychic.”

But surely there can’t be any shonky psychics, when, by Nancy’s own admission, we are all psychic? As Nancy’s brochure contradicts:

Does your PSYCHIC insist they were BORN PSYCHIC? Real Psychics know that EVERYONE is born Psychic.

When selecting your psychic, how can you be sure you have chosen a legitimate one?

Nancy has produced a brochure that provides a few warning signs to identify the charlatans:

Beware of “Games” or “Tools.” God does not use Tarot cards, pendulums (which is the subconscious at work) or other such nonsense to talk to REAL psychics. How silly! (But Nancy has a direct line to ‘god’)

Does your psychic tell lots of clients they were someone famous in a previous lifetime? Highly unlikely. (But Nancy specialises in ‘Past Life Regressions’.)

Does your PSYCHIC tell you they are channelling the “Big League” such as Jesus, The Virgin Mary, Moses,

etc...Think about it...(But channelling murder victims is plausible?)

Working for The Man

Nancy claims to have performed psychic detective work for NASA, the FBI, CIA and recently with the Coastguard (regarding the Olivia Newton-John case), but only if she is invited on the team. Sometimes the deceased won’t wait and instead come to her, such as the fellow who



Nancy Bradley

was killed in a car accident outside Nancy’s home, and proceeded to walk straight into her office! However, Nancy refuses to participate in cases where another psychic has previously worked. They have left their psychic scent behind, and this “muddies the waters, leading to dead ends.” Furthermore, Nancy won’t provide her psychic services to family and friends because they become “too emotional” and this is “harder to read” (or does she not want to fool her own family?)

Noble Nancy never charges for finding the murdered, this is her “gift of love.” A reading is no gift, but a debt — \$175 for a scheduled telephone reading and \$350 for urgent readings. For those on a budget, a “one question” reading comes at a mere \$75.

When we begin to contact a murder victim, we first need to

establish whether the individual is indeed deceased, or merely missing. Putting her hand to her chest, Nancy explained that we know if the person is dead or alive, “by the way your heart feels.” Is there a heartbeat or not? If there is a heartbeat there is some urgency to the task as “most murders occur within five hours of the kidnapping.” The victim’s life is in jeopardy, they could be “held for ransom, or the victim of a sexual crime or torture.” How do

we detect the heartbeat (or lack thereof) of the subject? Acquire a photo of the person. Look into their eyes. Connect with their heartbeat. You will feel a “pulling energy” and your heart will start to race. Then, “get rid of your heartbeat.”

Be still, my beating heart

This is achieved by calming your heartbeat, and then simply aligning your chakras. Nancy demonstrated this act, curling her hands into fists, placing one fist on her head and then raising it in a straight line, before repeating the act with the other hand. It looked as though she was pulling an invisible rope out of her head. After aligning your head chakra, stretch your arms above your head and in a graceful motion of vertical breaststroke, sweep your arms downwards into a crucifixion-like pose. With your palms splayed outwards, you have aligned your heart chakra. “Can you feel that? No heartbeat!” Nancy enthused, as awed gasps filled the room. “This is so relaxing”, mused one psychic, “I wonder if this could be used for panic attacks?” “Yes”, replied Nancy, “this technique can help in times of stress, and you could use it for heart palpitations and other heart conditions.”

You have now “lost your heartbeat”. Upon lowering your hands, you can tune into the body of the victim. Check yourself for a pulse. If you have a pulse, you have picked up the heartbeat of the person, they are alive! If it is slow, the person

may be drugged. "If there is no heartbeat you can assume the person is dead." If you don't have a photograph, rely on information such as the appearance, gender or age of the person, or the last place the person was seen. "Don't go off what they were wearing, they might be naked now, or have changed clothes."

Psychometry, reading a personal object owned by the subject, "is a great tool for beginners." Nancy claims she once located a murdered child after reading a dirty diaper. When you start the reading, you might also enter into a trance, a "state of suspended animation. It's like absent-mindedness or being on auto-pilot." Now you have 'tuned into' the person. "Hug them. Reach out for them and take their hand. This puts them at ease and creates a cord, an energy cord. You have touched them because, astrally, you *are* there." Comfort the person, tell them, "It's okay. Nothing more bad can happen to you now." Then, most people will ask the heart wrenching question, "Am I dead?" Often they won't know that they have passed. "Don't lie to the dead!" urged Nancy, "always tell them the truth. Tell them they're dead!"

Per ardua ad astral

The energy cord feels "like a spider web. It's all gooey and warm and comes out of your fingers." Don't let go of it! Clutching her hand, Nancy explained "once I held the cord for three days. Showering, driving, sleeping, I never let go." To ensure her grip is tight, Nancy often wraps the cord around her neck, or her waist. Now, "take yourself astrally to the person." This is when your "etheric body" travels to a desired location, "on a plane, train, through the woods...whatever it takes. I astral travel all the time. I often visit my cousin in New York and he cries 'Get outta here!'" It is a perfectly safe process for you to travel to the victim. "Your soul won't stay if you are in danger", explained Nancy, "the cord will shrivel up. You are a vessel for God, and God won't hurt his vessel."

Follow the cord to the victim. Chat with them as you go along. Ask them for information, a name, age, details of the murder. Knowledge thickens the cord and strengthens your connection to the victim. Occasionally, the cord will wobble and waver. Beware. This is "black energy, the negative energy of a perpetrator." Perhaps the perpetrator has returned to "view his handiwork." Nancy once worked on the case of a murdered female child and felt strong waves through the cord, "a girl was murdered by a boy in the forest and he kept bringing his classmates along to see the body." If you can, maintain your grip on the cord, "but if it gets too much for you, just drop the cord."

Kids' stuff

Nancy claims that working with children is easier than adults, "kids are easier, they know the other side. They are closer to the other side than to Earth. Until a child is 7-8 years of age they are still connected to the etheric and anxious to go home." Clearly, children are anxious to die. In contrast, adults are angry, bitter and vengeful. "As soon as they see me they start to whine and shout. All they want is revenge for their death." Working with children may be easier, but it requires tact, and patience.

Go to the child. Smile, so that the child knows you're good. Talk softly, gently, evenly. Sit next to them. Allow them to talk, to cry, but don't push them. Their memories will be painful, and difficult for them to understand. Cuddle them and don't leave them alone.

Sometimes they will ask, "Can I see Mummy?" Tell them that they need to travel over to the other side to "prepare a special place so that Mummy can be with them too one day."

Nancy admitted that animal murders caused her the most pain. "Animals are so much more pure than humans", she explained. Nancy also performs as an Animal Intuitive, to diagnose Fido's depression, or Felix's anxiety.

Guidance

The dead body is a perfect one. "At the minute of death the body is made whole again. If the person was beheaded, they will have their head back again. If they are born without an arm, they will have an arm upon death." They will also have a "fairy dust appearance. They'll be all sparkly. This is because they are changing from breathing to the etheric. They don't need to breathe anymore." Soon a deceased loved one will appear, to take the person on a journey to the other side. "For children, Grandma or Grandpa usually appear. There is nearly always someone, a guide, waiting to collect you on the other side. Only in the rare case of a few homeless people have I not seen a relative or friend waiting for the deceased."

Guides are eager to see their loved ones, and often impatient to escort them to the other side. "Don't let them transition until you have all of the information you need. Your job is to put the perpetrator behind bars." Explain to the anxious guides that you are there to solve the murder, and that this is a gift for the family. Ask them to "back off" until you've gathered the details of the murder. The victim should not be "released from life" until they have responded to the following survey:

- *Who did this to you?*
- *What is their name?*
- *What is their age?*
- *Can you describe the appearance of this person?*
- *What did they say to you?*
- *Where did they take you?*
- *Where are they now?*
- *What events led to your abduction?*

Then ask the victim for a special word or image to be repeated to their loved ones still on Earth.

"You don't know how comforting and emotional it is for the family to receive a message from the victim. It

gives them peace of mind and proof that someone has spoken to them.”

Cues to clues

The psychic will receive all kinds of verbal, visual and cognitive messages during the communication. Remember, “Thought travels faster than sound or light. You might ‘see’ the crime scene, or colours around the deceased. Blue indicates that the body is in water. Brown indicates that the body is on land, so does green. Turquoise or aquamarine tells us that the body is near water, or on the water’s edge.”

Tip: if the scene is bloody with no body it’s a good bet that the scene was staged.

Sometimes the ‘victim’ isn’t really dead at all, but doesn’t want to be found, for personal or financial reasons. Sometimes the deceased doesn’t want to be found either, if they’ve been involved in something sinister, or personally disgraceful. “One young girl was involved in porn and didn’t want her family to know the circumstances surrounding her death.”

I’ve got the world on a string

During this turbulent time between Earth and the Other Side, between life and death itself, the deceased will still be in limbo. “The life cord doesn’t leave for three to five days”, Nancy explained. “Notice that when someone dies it doesn’t ‘hit us’ for the first few days? We start to grieve properly when the life cord disappears.” The life cord is part of the chakra system. It grows from our navel to the centre of the Earth, connecting us to this plane until death. For this reason, never cremate the deceased for at least three to five days after death. “Cremation before this time doesn’t hurt, but it will cause the person to jolt because they are still connected to the Earth”, Nancy quivered to demonstrate the deceased’s reaction to premature cremation.

Deaths are generally predestined, including murders. Murders are planned, in the general scheme of

things. They are purposeful. Sad, yet meant to be. In a circular argument Nancy claims that “such a tragedy leads the family to start up a support group, or set up a charity in the name of the victim.” However, suicides are unplanned. “If you suicide your soul group isn’t prepared. You’ve taken yourself out prematurely.” Most of us will be recognised by a soul group when we die. The murdered will be welcomed, but not the murderer. Solving an age-old question in abnormal psychology, Nancy explained that, “Murderers have no souls. As a result, they have no soul group.”

Taking a break

We took a brief psychic intermission, long enough for Nancy to approach me with curiosity. She gave me a big hug. “Hello darlin’, what’s that delicious perfume you’re wearing?” “Angel”, I replied, realising that my choice made me look like a new age psychic-in-training, fitting the part well. “I love it. Welcome to our class. You’re a lovely psychic lady who needs more confidence in her psychic abilities.” I agreed that I needed a lot more confidence in ‘my abilities’ indeed! Nancy then introduced me to her regular psychic students, “they’re all lovely ladies... unless you try to steal their husbands.”

Beware of false prophets

When the class resumed, Nancy led a discussion about a current case. She isn’t involved in this one, “as only phony psychics talk about their cases and reveal information to the media. This is an act of love, not to be abused.” If it is abused, it is lost. Apparently, psychic Alison DuBois has “squashed her gift by exploiting it. It’s a God-given trust.” Ironically, Nancy’s “Phony Psychic” handout announces:

Does your Psychic badmouth other Psychics, ESPECIALLY accomplished, famous or well-known PROVEN PSYCHICS? Beware of the jealousy factor. This is a serious giveaway for a phony Psychic, a charlatan, and a scammer. These “so called” Psychics are

envious of the real thing and are running scared because their limited or non-existent gift cannot compete with REAL PSYCHICS...RUN!!!!

Nancy raised the case of Stacy Peterson. “If my name was Peterson, I’d be changing it! First Laci, then Stacy... Peterson!” she joked. “Stacy disappeared in Minnesota...” “No, Illinois”, corrected Wayne, our sole male psychic. “Stacy’s 23 years of age,” (wrong again, she is/was 22) “and she’s been missing since early November” (wrong yet again, she was last seen on October 28, 2007). “So...is she alive or dead? Who thinks she’s dead?” Nancy asked flippantly. Most hands were raised. “Who thinks she’s alive?” A few hands went up gingerly. I was conspicuous by not responding to the questions, and Nancy zoomed in on me. “What do you think, honey? Go by your intuition and you’ll never be wrong.” I paused. “I just don’t know enough about the case to guess”, I replied. “Oh. You don’t know the details of the case. Okay then. For those who said she’s dead, you’re correct”, praised Nancy.

But wouldn’t a non-phony psychic ‘know’, regardless of whether they followed the case or not? Nancy’s comment suggests that psychic detective work is indeed a guess; assumption, speculation and guesswork, all influenced by media coverage of a case.

Throughout the discussion, the psychics’ superficial analyses were based in stereotyping and bias, and centred on the victim’s 53 year old husband, former police officer Gary Peterson. Gary is the main suspect at present, especially in the trial by media. The psychics’ comments included: “Her husband looks like a bully”, “He’s a misogynist”, “He’s a wife beater”, “He is cold and unfeeling”, “He was jealous of her youth and accused her of cheating”, “He did away with his previous wife too”, “He’s overpowering her”, “She’s crying for help and he loves the sense of control he has over her”.

Continued p 21 ...

Electricity From Uranium: Who Needs It?

Taking a sober look at a contentious topic

It is said that nuclear generated electricity is needed because photo-voltaics and wind generation can't supply the base load electricity that is required by large cities.

We need to have large, localised sources of energy. A power plant delivering, say, 2 GW is good because you can draw 2 GW from a single point. But if we try to get the same output from solar panels, for example, it becomes much more difficult. It's not impossible, but it becomes more complex to draw as much energy as you need from a network of low-output sources instantaneously (Pitts *et al*, 2006). That is an educated guess, but a guess none the less. Let's try it and see.

Let's put 2MW wind turbines wherever is appropriate on land to generate electricity. However, wind farms compete for space with farming and urban development and average wind speeds are higher at sea than on land. So in addition, let's put them on the sea floor. The coastal sites for these may be limited so let them be put further out to sea as well. The Norwegian energy company, Hydro, is developing floating wind turbines to be used in deep sea (200-700m) wind farms. Let us also put solar panels on the roofs of all our houses. What will the solar panels cost? Let me ask a different question and answer it before I answer the first one.

Cost of a coal fired power station

Construction costs (2004 estimate) for a 500 MW coal fired power station are about \$US650 million (*Wikipedia*). If the CO₂ emissions are captured, the costs go up. BP and Rio Tinto are starting feasibility studies into a 500 MW coal-fired power generation project, estimated to cost \$2 billion, at Kwinana in Western Australia, that will be fully integrated with technology to capture and store its greenhouse emissions (Warren 2007). I don't know how the two billion dollar figure was arrived at as there is no way of storing CO₂ at the moment, but I will use it.

An Internet search of the solar shops shows that a grid-connected array of photovoltaic panels with a 12.8 kW peak output can be bought for about \$35,000. If both these figures are multiplied by 39,000 we find that 500 MW of grid-connected peak solar output would cost \$1.37 billion (and two billion dollars would buy 730 MW). Perhaps if a government agency placed an order for 39,000 12.8 kW systems, they would be able to negotiate a better price. I am prepared to offer 25m² of my roof surface rent free for the installation of one of these systems if I could continue to pay \$1000 annually for my electricity (my present electricity cost). If 39,000 other Adelaide households were similarly inclined,



Martin Caon is Senior Lecturer in Biophysical Science at the School of Nursing and Midwifery, at Flinders University

there would be an annual income of \$39 million dollars to the owner of the arrays. And they would not need to pay for coal or gas to generate the electricity. And they would not need to find a way of storing CO₂. And they would not need to find a site to build the power station on. And the electricity distribution wires are already in place. And each installation need not be limited to 12.8 kW.

On the down side, photovoltaic panels don't operate at their peak output for much of the time, and they require maintenance to ensure that the inverter is operating properly. Furthermore, the peak output of the array may not be in the period of peak electricity demand. Nevertheless, there should be a utility-owned (and maintained) photovoltaic array on every house roof.

Nuclear power too dangerous?

If you were offered a means of producing electricity that would provide employment for more than six million people but 400,000 of whom would receive radiation at an "effective dose" of 3.8 mSv *per annum*, and 50,000 of whom get 11.3 mSv *per annum* from their work (Liu *et al* 2007), would you take it? You would have to accept, as well, an average annual fatality of 40 workers in the USA and 5000 in China.

If you were offered a seductive (an "indispensable") technology that could be predicted with certainty to be responsible for 1600 fatalities and 22,000 serious injuries each year (and that is just in Australia), could the benefit to our way of life offset the cost to those lives — accumulating at the rate of 23,600 each year?

I am being somewhat obtuse to make a point. The first offer is drawn from coal mining in China (frankwarner.typepad.com/free_frank_warner/2006/01/us_coal_mining_.htm) while the second refers to automobiles and states Australia's annual road toll. These mortality rates from currently accepted human practices, while of undoubted concern, don't seem to

generate an uproar. They also should put the foreseeable dangers of nuclear electricity into perspective.

The events at Chernobyl in 1986 are used to highlight the dangers of nuclear reactors. However, the dramatic stories that have appeared in the (generally uninformed) popular media contrast starkly with those provided by reputable scientific organisations.

The accident at Chernobyl was a disaster whose consequences are still being dealt with. Between 30 and 40 people died as a result of the event. About 140 people experienced acute radiation sickness (and recovered). 1800 people exposed, as children, to radioactive iodine contracted (mostly curable) thyroid cancer. Among the heavily studied recovery workers, who are believed to have received radiation doses large enough to statistically detect changes in their health, no higher incidence rate of leukaemia cases has been detected. Furthermore, no increase in other cancers, birth defects, or other disease that could be produced by radiation has been detected (to date) (Kasper 2003).

On the other hand a great many people suffered severe psychological stress and a diminished lifestyle as a result of their fear of radiation, distrust of authorities and (often unwarranted) relocation from their homes. The Chernobyl reactor was flawed in design and so were the work practices used there. The accident has served to improve the design of future reactors (see below) and the way they are operated.

Weapons

It can be argued that nuclear energy leads to nuclear weapons proliferation, and if the examples of the USA, Russia, The United Kingdom, France, North Korea, Israel, India and Pakistan are considered, it seems to be true. However, there is no causal association between energy and proliferation, as the examples of Canada, Sweden, Belgium, Japan, South Korea,

Argentina, Spain, Bulgaria, Finland etc, show. All generate electricity with reactors, but none build nuclear weapons.

The logic behind the suggestion that electricity from nuclear reactors should not be used because nuclear weapons exist, is as flawed as banning metallurgy because military vehicles, planes, ships, guns and bullets are made of metal. It is as flawed as: closing down the petrochemical industry because war machines run on petrol and diesel; banning fertiliser because bombs can be made from it; banning the chemical industry because explosives and poison gas are made of chemicals; scrapping jet engines because intercontinental missiles use jet engines; preventing the study of microbiology because a contagious disease might be unleashed as a weapon. However, the logic behind eliminating nuclear weapons and all of these other terrible technologies because they are terrible, is impeccable.

Waste

An argument that is raised against nuclear electricity is that there is no way of getting rid of the non-useful radioactive material that is produced. That is not quite right. There is no way of getting rid of the radioactive waste to the satisfaction of some people. It is possible to tunnel a descending road in a helical shape into stable ground, and at the designated depth strike out horizontally with radial tunnels, at the end of which is deposited — encased in concrete or Australian "SynRoc" — the radioactive material. The tunnels are progressively back filled. Putting radioactive material back into the ground, where it has existed since the Earth was formed, is the appropriate thing to do. There, its radiation will progressively decrease.

An argument that should be raised against electricity produced from coal, diesel and gas is that there is no way of getting rid of the CO₂ waste that is generated. But

Electricity from Uranium

this is not quite right either as CO₂ can be absorbed and transformed by green plants. Unfortunately, there do not seem to be enough plants on earth to cope with the amount of CO₂ that is being produced. Burying the CO₂ (geosequestration) doesn't seem an option either, as gas is difficult to contain in an underground "aquifer" that has been fractured by the act of putting the gas in there. And the CO₂ would really have to be kept there forever, as it (unlike radioactivity) does not decay. If the CO₂ were to escape sometime in the future, there would be an "instant" global warming problem.

Reactor technology is not static

New generation pressurised-water nuclear reactors (such as the Westinghouse AP1000) are claimed to operate more efficiently and safely than previous designs (eg, the Chernobyl reactor and the 1940s era Windscale piles in the UK) and I don't doubt that they will when they are built. They still use water circulating through the core under high pressure to cool the reactor and generate steam.

On the other hand, pebble-bed modular reactors operate at a higher temperature, and use circulating helium gas to cool the reactor and drive the electric turbine (ie, no steam). However this new type of reactor is still in development.

You might have heard statements like, "Nuclear energy is not going to be a long term solution for energy. If all the world's electricity was produced by nuclear power, then we would run out of uranium in five years!" (energy.seekingalpha.com/article/35938). This can be countered by "Further exploration and higher prices will certainly, on the basis of present geological knowledge, yield further resources as present ones are used up" (www.uic.com.au/nip75.htm).

Well, thorium₂₃₂ can be used as nuclear fuel too and it is more abundant in the Earth's crust than uranium. Thorium₂₃₂ will absorb

slow neutrons to produce uranium₂₃₃ which is fissile. Also, all of the mined thorium is potentially useable in a reactor, compared with the 0.7% of natural uranium. The thorium fuel cycle is yet to be commercialised, and the effort required seems unlikely while abundant uranium is available. Nevertheless, the thorium fuel cycle might be a significant factor in the long-term sustainability of nuclear energy (www.uic.com.au/nip67.htm).

How bad can nuclear electricity be?

Diehard opponents of nuclear electricity imagine the worst scenarios arising from generating electricity in this way (despite the fact that many countries already generate nuclear electricity without succumbing to disaster scenarios). On the other hand, conspiracy theorists could say (perhaps with equal authority) that the invasion of Iraq was conducted in the pursuit of oil. Just how bad is nuclear electricity if the loss of life and misery caused by the invasion and occupation of Iraq — in the pursuit of oil to fuel present energy technology — is preferable to nuclear electricity?

Rusted-on proponents of nuclear generating capacity (and others), could point to the current predicament humanity finds itself in: that such massive amounts of CO₂ have been added to our atmosphere due to burning coal and oil, that the ice caps will melt, the sea level will rise and inundate low lying coastal land, global temperatures will increase, the world's climate will change, agricultural production would be very adversely affected and that the world might become an inhospitable place for humans to live. Just how bad are we being asked to believe nuclear electricity is, if the present apocalyptic forecast is preferable to producing electricity from uranium?

Coal is an impure fuel. It contains trace quantities of many metals, including uranium and thorium. Trace quantities of uranium in coal range from less than 1 to 10 parts per million (ppm). Ash from coal

contains oxides of these metals. For the year 1982, assuming coal contains uranium and thorium concentrations of 1.3 ppm and 3.2 ppm, respectively, each typical coal-fired power plant released 5.2 tons of uranium (containing 33 kg of uranium 235) and 12.8 tons of thorium that year (Gabbard 2007).

This "radioactive waste" is not regulated, so can be stored (dumped) anywhere. Coal-fired power plants throughout the world are the major sources of radioactive materials released to the environment. However, public knowledge (and therefore public concern) about this seems to be non-existent. If and when "clean" coal technology power stations are built, this "technologically enhanced naturally occurring radioactive material" will still be produced. If China switched to nuclear generated electricity and stopped coal mining, 5000 coal miners each year would not die and the unregulated release of radioactive material (ie, coal ash) into the environment would cease.

Possible ways to generate electricity

As well as wind-generated and photovoltaic generated electricity, and power stations using gas, coal or uranium as fuel, there seems to be multiple other ways of producing electricity.

Electricity produced from water boiled by geothermal energy (from hot rocks) is an exciting development that is happening near Innaminka in South Australia — a 40MW demonstration plant being planned for construction perhaps by 2010. Unfortunately, when water is injected into the hot rock layers, they may move, creating tremors and rumbles (earthquakes) as happened in Basel, Switzerland. The earthquake so frightened the locals that the project was halted.

Wave energy converting devices can generate electricity, using the motion of ocean waves. For example the "Salter Duck" is a tethered floating device where waves turn a cam, that compresses pistons, that

compress hydraulic oil. The compressed oil then turns a hydraulic motor that generates electricity.

Energetech Australia have built a prototype wave power generator of 300 kW on the breakwater at Port Kembla, and trialled it in October 2005. They predict that a full scale project should power up to 1,500 homes, or produce three million litres of desalinated water per day per production unit.

Seapower Pacific have built CETO, a wave energy prototype anchored permanently on the sea floor, (rather than floating) at Fremantle. The prototype is expected to generate up to 100 kilowatts of electricity. In desalination mode, the prototype is expected to produce about 300,000 litres of fresh water per day.

Didier Gambier, a scientific advisor on the International Thermonuclear Experimental Reactor (ITER) and on the Joint European Torus (the largest fusion experiment currently in operation) says: "Every bit of technology, of behaviour, that society can put together so that we put less CO₂ into the atmosphere should be used". The ITER will be built in Cadarache, France, by a consortium of countries and is due to power up by 2016 (Pitts et al 2006).

Then the demonstration reactor DEMO is scheduled to be built, perhaps in 2025, and is intended to produce ten times the power it consumes. Nuclear fusion has the potential to produce vast amounts of electricity by a method that is safe, environmentally friendly, uses small masses of fuel and produces no CO₂ or radioactive products. Enormous technical hurdles have to be overcome first, not the least of which is how to handle and maintain a plasma at 100,000,000 °C, a temperature that will vaporise anything in the near vicinity. Fusion skeptics joke that "Fusion is the power of the future and always will be." On the other hand, Lev Artsimovich (a prominent Soviet physicist after whom the Artsimovich crater on the moon is named) is famous in the

field of fusion research for his quote (responding to the question of when commercial fusion power would become available) he said "Fusion will be ready when society needs it."

So who needs electricity from uranium? Probably Japan does, as it has a small land mass and very cold winters. China and India probably do, as it is hard to imagine these two countries being able to generate sufficient electricity to bring their massive populations to living standards similar to those in the West, by any other means. Does Australia need electricity from uranium? Not yet. But when it is needed, society will divert sufficient resources to it that it will (like fusion energy) be ready. And given that reason will always eventually overcome an irrational scare campaign, I have no doubt that public opinion will change to accept a safe nuclear power station.

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... Murder victims from p 17

The gossip concluded with the estimate that her body would be found near water within ten days to two weeks. This class was conducted on November 29, 2007. Sadly, at the time of editing (three months later), Stacy is still missing.

The class ended with a healing session. Nancy asked one of the psychics to perform "extra healing" upon me. Everyone closed their eyes as Nancy uttered a hypnotherapy-healing-prayer for every part of our bodies, especially our ears, throats and sinus passages as she could 'feel' that some of us suffered ENT complaints (but it was flu season!) My individual healer stood over me, placing her hands above my head, and repeating Nancy's words.

Conclusion

The lesson had been a blend of psychic theory and personal religious belief, from clairvoyance to spiritual healing to prayer for the sick. After the healing, Nancy bid us all goodnight, and made a special mention of the "lovely psychic lady." Like a psychic Amway scheme, Nancy phoned me the next day to make sure I "got home safely", and invited me to future meetings where I was generously offered a room in her home, "I have regular guests from New York and San Francisco."

I could easily see how people could become cajoled into the cult of Nancy Bradley. To the uncritical thinker, Nancy seems to solve all of life's biggest mysteries. Superficially, I found her to be charming, charismatic, confident and witty.

As Jennifer B. said to her, "You are better than any therapist, doctor, shrink, or confidant I've ever seen."

In many ways, this article is in bad taste, but it must be emphasised that it is in Nancy's own words. So, to finish in her own words:

DON'T DEGRADE YOURSELF IF YOU HAVE BEEN TAKEN IN BY A PHONY PSYCHIC. THESE PEOPLE ARE SLICK CON ARTISTS.

Vitalism and the Origins of Magical, Mystical Energies Pt 1

A study of the historical roots of modern irrationality



Laurie Eddie, Secretary of Skeptics SA, and a Life Member of the Skeptics, is a psychologist.

Attempts by the ancients to make sense of the natural world often resulted in the evolution of many erroneous concepts, such as superstition, magic and religion. One particularly fallacious belief of ancient times was the concept of Vitalism, “The metaphysical doctrine that living organisms possess a non-physical inner force or energy that gives them the property of life” (Carroll, 2003, p.402).

The concept survives even today in such common terms as when someone is said to have ‘low vitality’ or when we refer to a person’s ‘vital signs’. The basis of Vitalism was the existence of a very special ‘substance’ - a form of spiritual life-energy, “... an active force that differs from anything possessed by non-living matter...” (Haller, 1986, p. 81). According to vitalistic beliefs, this ‘force’ had originally created, animated and continued to sustain all forms of life throughout the entire cosmos.

Essentially, the concept of Vitalism was a pre-scientific attempt to explain the concept of life by attributing it to some form of supernatural or “divine” animating energy, what Hume (1783) described as, “... a spiritual substance ... dispersed throughout the universe”.

The concept of this ‘force’ as a ‘spirit’ pervades Eastern and Western philosophy and, throughout the ages, it has been known under various names.

These include:

- *pneuma* and *entelechia* (Aristotle);
- *anima mundi* (the world soul);
- *spiritus vitae* (the spirit of life);
- *spiritus naturae* (“natural spirit” or the spirit of nature);
- *vis essentialis* (essential force or energy);
- animal spirits; *anima sensitiva* (sensitive animal nature or soul);
- subtle fluid;
- the breath of life;
- *Qi* or *Ch’i* (“vital essence”);
- *Prana* (breath or “vital energy”);
- *vis medicatrix naturae* (the healing power of Nature);
- *Archeus* (Paracelsus and van Helmont);
- Animal Magnetism; *universalis plasticus* (“universal plastic”— Francis Glisson, 1597-1677);
- *materia vitae diffusa* (“diffused life material” — William Hunter 1718-1783);
- the “monad” (Leibnitz, 1646-1676);
- the Odic force (Baron Carl von Reichenbach, 1788-1869);
- Ethereal Substance (Rudolf Steiner, 1861 - 1925);

- the Etheric Body (Leadbeater and Besant);
- Orgone, or “life-energy” (Wilhelm Reich, 1897-1957);
- Innate Intelligence (D.D. Palmer, 1845-1913);
- Vital Force (J.F.A. Howard); or
- the morphogenetic force (Rupert Sheldrake).

Widespread concept

The concept of a universal life-energy is quite widespread and is to be found in many diverse beliefs including, for example, that of Blundell (1985) who claims that many of the European stone circles (eg, Stonehenge) are, “... linked together by a strong but indefinable ‘life force’” (p. 137) transmitted along “lines of force” called ley lines. In the past, the ultimate objective of all magical arts was to possess this life-energy so that one could use it to animate either the dead or lifeless substances, so as to gain personal knowledge and power.

This energy was believed to exist in many forms and, for many, it was inherent within the secret names of power of the various deities. Arabs believe that God had 99 names, all with great magical powers (the *Asmau as-Sifat*, “The Names of the Attributes of God”). It was believed that if God was adjured by any of these names, he would fulfil the wish or prayer of the person making the request; it was also said that “... he who recites them shall enter Paradise.” This ‘Names of Power’ was the basis of numerous tales and, although actual metal or clay idols existed that were able to speak and prophesise and were said to have been animated by such means, they were merely bogus contraptions used to deceive gullible believers.

Hebrew folklore

Nevertheless, the belief persisted in ancient times that lifeless objects could be given life. Based on the myths of *Genesis 2:7*, the concept of the Golem arose in Hebrew folklore.

The name, from the Hebrew word *go^llem*, meaning ‘a thing without life or form’ (see: *Psalms 139:16*, “thy eyes beheld my unformed substance”), was perceived as a creature, created from clay or the dust of the ground which, just as God had breathed ‘the breath of life’ into the nostrils of Adam, also had to be animated by magical means.

There were various ways to do this; the creature could be given life either by speaking the *shem* (*Shem Hameforash*), the ineffable and secret name of God over the creature, or by placing this mystical name upon the creature. Another version said that it was sufficient to inscribe upon the creature’s forehead the Hebrew word *emeth* (truth) and, while this mystical name remained in place, the creature would continue to have life. However, if the name was removed, the creature would immediately become lifeless. There were many allegorical tales in Talmudic literature of certain Jewish sages who created living creatures; one rabbi was reputed to have created a “man” while two other rabbis were said to create for themselves, on the eve of every Sabbath a calf, which they ate.

By the Middle Ages such tales were quite common, and it was generally claimed these creatures had been created by using certain spells from the *Sefer Yetsirah* (*The Book of Creation*). Such tales increasingly told how these human-like creatures were created as servants. Unfortunately however, because they lacked a brain, they were prone to misunderstanding their master’s commands, and so tended to be more destructive than helpful. Goethe’s tale of the *Sorcerer’s Apprentice* is one example of this type of allegory.

Alchemists

The creation of life was also extremely popular with the Alchemists. In one text, the *Cabala Mineralis*, a formula is even provided for the creation of life:

Let two, or at the most three parts of our Mercury liquefy, one part of silver or gold of the vulgar, subtiliated, and they will become one body, spongy and inseparable, which is called our silver or gold, and not of the vulgar... (*subtle)*

Although the creation of life was never achieved, it was widely believed that certain individuals had access to some of the universal life-energy. They were believed to be able to use it for benevolent purposes, such as healing, or malevolently, to injure, to destroy, or to “bind up” (ie, by tying magical knots), or driving pegs into the ground, to remove the sexual energy from a male or female, rendering them sterile.

Healing was usually performed by a ‘healer’ touching the sick (eg, *Acts 3:7*), a technique known as laying on of hands and later as the King’s Touch. Alternatively, the healer could apply some bodily fluid, eg, where Jesus is said to have used his spittle to cure blindness (*John 9:6*). It was also claimed that the sick could be healed simply by coming into contact with or touching the “holy” person, eg, “If I may touch but his clothes, I shall be whole” (*Mark 5:28*).

The concept of immortality

An extremely pervasive concept, Vitalism spawned a variety of superstitious beliefs including that of survival after death and reincarnation. Most religious beliefs are based upon variations of the theme of immortality, the concept that some part of the being (the vital animating principle), could survive death and enter a new phase of eternal existence. Such beliefs were especially exemplified by the extravagances of some cultures, in particular the ancient Egyptians, who spent much of their life and wealth preparing for life-after-death. Other examples are found amongst certain Chinese emperors and even the much later Christian preoccupation with the *memento mori* and a concept of mortality that empha-

sised, over and above all, matters of earthly existence, the ultimate importance of the soul and final salvation.

The importance of a natural creative life-force probably had its greatest impact upon early farmers who, seeing the planted seed “magically” transformed into abundant crops, must have viewed it as a wondrous process involving forces totally beyond their comprehension. Even more wondrous was the role of this life-force in human procreation. It seems likely that, long before humans adopted an agrarian life-style, they had already realised that they too had an important role in the cycle of nature.

Sexual rituals

As humans settled into communities, the act of sexual intercourse, considered to be the sole human contribution to the creation of life, took on an increasingly more sacred role becoming, in many cultures, the keystone of many religious beliefs. This led to a continuum of sexual behaviour ranging from sacred prostitution through to celibacy. In ancient Babylon, for instance, women were required once in their life to attend the temple of Mylitta (the goddess of fertility and childbirth), and surrender themselves to any man willing to pay for her services, the sexual act being “devoted” to the deity. (De Selincourt, p. 94). At the other end of the continuum was to be found the practices of limiting sexual intercourse to procreative purposes only, through to total celibacy.

In ancient times it was commonly believed that all acts of intercourse ‘released’ some of the creative life-energy and, since Virgins were believed to be filled with an abundance of this life-energy (enough to fertilise entire fields), intercourse with a virgin was considered particularly hazardous. The energy released in deflowering a virgin was considered such that it could totally overwhelm any male not, “... sufficiently exalted to withstand the

charge of power” (Walker, 1970, p. 25). Thus, it was a common practice for young females, especially from aristocratic families, to be deflowered by a priapic substitute, usually an ithyphallic statue, an act that ‘safely’ returned the vital energy to the deity. Much later, Avicenna provided a pseudo-scientific rationale for the debilitating effects of intercourse. He calculated that since it required forty ounces (1.13 litres) of male blood to create one ounce (28 millilitres) of semen, the act of intercourse for a male was equal to losing forty ounces of blood from a wound (De’ath, pp. 64-65).

One aspect of vitalism was the belief that, since human sperm was divinely created, it must contain some part of the divine life-force and so it would be a serious transgression to waste this sacred material. This concept, satirised by the words of the Monty Python song, “Every sperm is sacred, Every sperm is great. If a sperm is wasted, God gets quite irate”, explains the refusal by some religious groups to use contraception, and such irrational concepts as the ‘sin’ of Onanism where, by spilling his seed onto the ground, Onan (*Genesis 38:9-10*) committed an act so heinous that God executed him.

Alternative therapies

Particularly relevant to this study is the relationship between Vitalism and the multitude of so-called alternative and complementary therapies, for most are apparently based upon some form of Vitalism.

Established as they are upon rather nebulous, non-empirical principles, alternative therapies in general tend to be somewhat perplexing to those not accustomed to their particular form of bizarre ‘logic’; this is one of the areas that will be examined in this essay.

Thus, for example, we find that the homeopathic ‘law’ of potentisation, in what is clearly a contradiction of accepted scientific principles; claims that by diluting a substance, its potency is increased,

rather than decreased. Such apparent contradictions of scientific principles present no real problem to supporters of alternative beliefs, for this is merely one of many areas that are satisfactorily explained by Vitalistic theories.

According to Vitalism, even though a physical substance may be diluted endlessly, the inherent essential vitality — the life-force within that substance — is not diluted; indeed, can never be diluted. The original amount of energy is simply spread throughout the greatly increased volume, with no loss of its initial potency! Such are the claims of homeopathy. Its creator, Hahnemann, declared that the process of dilution could reduce the potentially harmful effects of substances and especially poisons. Nevertheless, the inherent vitality — the spiritual essence of the substance — remained undiluted, and so was able to transmit its healing potential as a form of innate healing ‘memory’.

Hahnemann was not the originator of such bizarre concepts; they had long been part of mystical, religious and philosophical tradition, which taught that, since these life-energies were divine in origin, they must possess a supernatural quality that enabled them to spread their power undiminished throughout the entire cosmos. No matter how widely this life-energy might expand and spread, each new portion would always contain the same amount of life-energy as the original.

Ancient origins

To better understand the origins of such perplexing concepts, one must completely abandon modern scientific concepts and adopt a non-empirical mind-set, where one can readily accept the most incredible assertions without the need of the slightest piece of actual evidence; a realm where, as Hall (1928) observed, one could possess, “... rays from the Star of Bethlehem, ... the snout of a seraph, a finger nail of a cherub, the horns of Moses, and a

casket containing the breath of Christ!" (p. 125).

To the ancients the entire cosmos was the creation of a single 'divine' entity. Rather like the Masonic concept of a "great master architect", this being was said to have created the present cosmos out of the primeval chaos, then fashioned the primal deities who, because of their proximity to the early creation, were imbued with the creative life-energy of this supreme being. They, in their turn, fashioned all life upon Earth. The end result was that, even though the cosmos was composed of many separate components, each part was inexorably linked to the other by familial bonds. As a result, everything that occurred in the cosmos was, in some way or another, influenced and affected by every other part.

This provided an ideal environment for magical and superstitious beliefs to flourish, for it presupposed that all human life and destiny were inexorably linked to the rest of the cosmos by many other invisible connections. Thus, nothing that might occur in an individual's daily life, no matter how small, was perceived as random, rather each incident was perceived as being influenced by events taking place somewhere else in the cosmos. Concepts such as good or bad luck, that we perceive as entirely arbitrary and capricious, were considered to be rewards or punishments for some previous actions that the individual had done to either gratify or upset the elemental cosmic forces.

Signs and portents

From ancient times, stones had been erected to mark territorial boundaries for, sacred as they were to Hermes, the god of boundaries (referred to by Herodotus as "the pebbly Hermus") few would dare to interfere with them. It was this same sacred quality that made stones suitable for gravestones, and the remnants of such beliefs of the life-power of stones persist in the myths and tales of the many 'rock-born' deities, such as Mithra and

Jesus. Like the Sun, they were both born in caves, and the claim that Jesus built his church upon the rock (Peter, or, Petros = the rock).

Trees, as the embodiment of creation and life, feature in a number of mythologies; in Nordic myth there was Yggdrasil, the great ash tree that bound earth, heaven and hell together, and in Polynesia the Tree of Speech. Both were gathering places of the gods that grew near magical fountains. In Judaic mythology we have the "tree of the knowledge of good and evil". Frazer (1922) noted that tree worship was widely observed by many cultures. It was a common practice amongst many American Indian tribes to hug trees to communicate with the spirit of the trees and to gain some of their strength and endurance, and it is recorded that the great German statesman, Otto Von Bismarck (1815-1898) used to embrace a tree before going into battle. So powerful was this belief in many primitive cultures, that only fallen branches (considered to have 'died') were used for firewood or tools. In some cultures, when it was necessary to chop down a tree or remove a plant from the ground, the spirit of the plant had first to be appeased with prayers and supplications.

As warnings of forthcoming events such 'signs' were considered so important that they required special interpreters — adepts skilled in the understanding of the many and varied heavenly omens. In time, such ideas led to the ill-conceived art of astrology, established on the belief that everything on Earth was controlled by events in the Macrocosm. But humans went even further; from their observations that the stars traced an endless path through the heavens, they proposed that perhaps humans too were destined to endlessly repeat their cycles of life, destined to travel an endless path, constantly repeating cycles of life upon Earth, or were perhaps predestined to follow courses which had been mapped out for them long before their birth.

Although at first the heavenly omens were studied primarily to guide the destiny of cities and states, these new ideas gradually influenced the development of a more personalised role for these divine omens, a concern as to how these forces influenced the individual's destiny, at birth, and throughout their life.

Given the general beliefs in a universal animating energy, there remained a number of mysteries — how did this life-force animate the body? Where did it reside? Attempting to answer these puzzling questions led to the origin of various theories, predominantly centred around two specific areas, blood and air.

Blood

Early humans must have observed how loss of blood could produce physical weakness, even death. It appears they early concluded that the animating energy was either a component of the blood or else some external force "absorbed" by the blood and that, when the blood was lost, the life-force departed with it, causing death. Such beliefs are mirrored in ancient tradition, "... the blood is the life" (*Deuteronomy 12:23*); "... the life of the flesh is in the blood," (*Leviticus 17:11*); and "The Spirit being diffused and going through the veins, and arteries, and blood, both moveth the living Creature, and after a certain manner beareth it" (*Corpus Hermetica, IV, 47*).

Based upon such beliefs, many cultures came to accept the idea that humans had originally been created from blood; thus, in Babylonian myth, humans were said to have been created from the blood of Merodach, the son of Ea; similarly, according to the Koran, man was created from "congealed blood" (*Koran 96*).

Because of its association with the creation process and deity, blood was increasingly perceived as a particularly "sacred" substance, and many special restrictions concerning the disposal of blood emerged. It was not

to be ingested by humans, “But flesh with the life thereof, which is the blood thereof, shall ye not eat” (*Genesis 9:4*) and, “Only be sure that thou eat not the blood: for the blood is the life; and thou mayest not eat the life with the flesh” (*Deuteronomy 12: 23*). Blood was to be either returned to the creator, or poured on the ground, “... thou shalt pour it upon the earth as water” (*Deuteronomy 12: 24*).

Sacrifice

In many cultures, sacrificial blood, especially human (considered the most potent), served as a means of returning the life-energy to the various deities, and indeed many, like the Incas and Mayans, believed the deities would die if deprived of this nourishment (Crawley, 1971, p. 13). Sacrificial blood was also perceived as a powerful cleansing agent for baptism into a new faith. Thus, Mithraic baptism required candidates to kneel below a altar upon which a bull was sacrificed. Drenched by the flow of living blood, they were considered to be washed clean of their past sins and accepted into the faith.

It was widely accepted that most of the saviour deities had sacrificed their own blood for humankind and, by this means, provided their followers with divine redemption and salvation; a new life, washed clean of sin. Many religions use this concept allegorically, as for example in the words of the Christian hymn, *There is power, power, wonder working power*

In the blood of the Lamb.

In time, other less brutal methods were substituted for human and animal sacrifices; the vivifying energy of blood was replaced by liquids such as water, beer, milk or wine, “... the ‘blood of the grape’ and thus the ‘blood of the earth’, a spiritual beverage that invigorates gods and men (*Encyclopædia Britannica*, vol. 26, p. 840).

To the ancients, blood was a fearsome substance filled with awesome energy and many of the

restrictions regarding the shedding of blood were devised, not so much for moral purposes, but to avoid the release of the powerful and mysterious soul-power that blood contained (Robinson, 1971, p. 715). Most fearsome of all was menstrual blood which, according to Pliny, was so filled with noxious energy that it could sour new wine and render infertile crops and fruit trees exposed to it (*Book VII, XV*). It was even claimed that venomous snakes were born of the buried hair of menstruating women.

Certain ancient Greeks, eg, Erasistratus and Galen, perceived the body as an apparatus that ‘distilled’ the vital-spirit (the *pneuma*) which flowed from the heart to the brain, where the sanguine humour (blood) was added, then it was distributed to the other organs, via the nervous system. Certainly, by the time of Galen (circa 129 — 200 AD), it was widely accepted that the blood was the real source of life because it contained the ‘vital-spirit’. Later theorists only reinforced this belief and so we find that in the 1620s, even while Harvey was providing a scientific explanation for circulation, a colleague, Robert Fludd, was proposing the idea of a universal or “catholic” spirit, a force he claimed was emitted from the sun to give life to all things. Acting like a miniature sun, the human heart “... distributes the vital spirit to the rest of the body by a process of circulatory currents, in the same way as the sun’s catholic spirit spreads across the earth” (Hellman, 2001. p. 9).

Air

The substance which Pliny referred to as, “that spirit, which both the Greeks and ourselves call by the same name, air” (*Book II. IV*) was long thought to be involved with the life-principle. Not only did breathing cease with death but, although invisible, air in the form of wind had the power to move even heavy objects. So it seemed logical that air, one of the four elements, must

contain some special ‘animating’ or life-giving power.

It was uncertain as to whether this animating principle was the air itself, or something within the air. Empodocles (504 — 443 BC), believed that the actual essence of life was a form of ‘subtle fire’ that was present in all matter, including the air. Some, like Diogenes, even claimed the soul was composed of air, a substance described by Aristotle (1987) as, “... the primordial principle from which all other things are derived, it is cognitive; as finest in grain, it has the power to originate movement” (*Book 1, II*).

In numerous creation myths the ‘breath of life’ was the animator and sustainer of life, and deities were frequently depicted as breathing life (air) into inanimate substances shaped from dust or clay into human form. For example, “Then the Lord God formed man of dust from the ground, and breathed into his nostrils the breath of life; and man became a living soul” (*Genesis 2:7*). This is a reference to the Hebrew *nph* (*nephesh*), either a life force or an animating spiritual-energy, related in particular to the concept of drawing breath, or to breathe. We can find further references relating *nephesh* to the life principle; “... all flesh in which is the breath of life...” (*Genesis 6:17*); “... two and two of all flesh in which there was the breath of life” (*Genesis 7:15*). In *1 Kings* we find a reference to the widow’s son who fell sick and died “... and his sickness was so sore, that there was no breath (*nephesh*) left in him” (*17:17*). Despite his death, he was restored to life by Elijah, “... the *nephesh* (life) of the child returned and he revived” (*17:22*). Finally, in the *Book of Job* we find, “In his hand is the life of every living thing and the breath of all mankind” (*12:10*).

Many ancient cultures believed that the blood vessels were filled with air. The ancient Egyptians believed that humans were animated by the ‘breath of life’ (*tjaw n ankh*), a substance that entered the body either through the right ear (Nunn, 1996 p. 103), or through the

nose, “As for the breath which enters into the nose, it enters into the heart and the lungs. It is they which give to the entire body” (Nunn, p. 55, quoting from the Ebers papyrus).

For the Hindus and Buddhists, *prana* (Sanskrit for “life force” or “breath of life” - Feuerstein, 1987), was a form of breath, or a life-current, thought to exist within the air. As one of the three substances that composed the human body, it was perceived as a form of life-energy drawn into the body with each breath. To the Chinese, this energy was known as *Qi*, or *ch'i*, “vital or heavenly air” (Mainfort, 2004, p. 38) and was believed to originate in the sun. *Ch'i* was perceived as a form of radiant energy, “... strong enough to blow the tails of comets as if in a strong wind” (Teresi, 2002, p. 149). Variations on this theme remain part of the Eastern culture; in Thailand a form of alternative therapy is practised; known as *Chi Nei Tsang II*. This therapy is based upon a theory of, “... ‘good *Chi*” and at least ten kinds of bodily ‘wind’ (flatus), including the “sick or evil wind” (Raso, 1996).

Although Galen discovered that blood, and not air, flowed through the veins and arteries, his findings were generally ignored. Western medicine continued to teach that the arteries were filled with air and spirit (Hellman, 2001, p. 7), a concept that was more acceptable to the Christian Church. While this belief was finally discarded in the West after 1628, when Harvey published his book *De Motu Cordis*, as Mainfort (2004) observed, it remained an essential element of traditional Chinese medicine (TCM) until around 1830 (p. 39).

Elemental medicine

Ancient Eastern medicine considered humans to have been created from a combination of elemental substances. In TCM, these were earth, fire, metal, water, wood. In Ayurvedic, air, earth, ether, fire and water. These beliefs remain the cornerstones of both TCM and Ayurvedic, which still teaches that

five elemental forces (air, fire, water, earth and space), combine in the body to form three harmoniously balanced pairs of doshas (the tridoshas, water appears in two of the doshas), and that mental or physical illness was due to imbalances between the doshas.

These beliefs appear to have influenced Hellenic medicine, for around 450 BCE Empedocles proposed a somewhat similar concept involving a connection between the four basic elements (air, fire, earth and water); and four bodily humours. Like the Eastern model, it proposed that all matter, including humans, had been created from these four basic elements, with the characteristics of each Individual being determined by their own “unique balance” of these elements, with the predominant element producing the primary characteristics of physical appearance and behaviour.


This model, which dominated Western medical philosophy until the Middle Ages, attributed all sickness and disease to imbalances, either a deficiency, or a surplus of one or more humours (elements), in the body. Although the humoral theory was an attempt to explain life in a more secular context, it was really only a variation of the vitalistic concept, merely substituting vague elemental forces for a divine animating power which the ancient Greeks referred to by a variety of terms, including *Arche*, *Apeiron*, *Nous* or *Pneuma*.

Arche was the original source — the ‘first principle’ — which, according to Thales of Miletus, was water. His pupil Anaximander disagreed, arguing that ‘contrary’ elemental forces, particularly fire, could not emerge from water. He proposed another alternative, a mysterious substance called *Apeiron*, a “fifth element”, a superlunary substance which, because it had the inherent power to combine the opposite characteristics of all things, was able to take on the properties, shape and substance of all things, and to give life to the entire cosmos.

Nous was the purest, most powerful substance in the cosmos, a form of natural intelligence with knowledge of and power over all things. To Anaxagoras it was the original intelligence that had first brought order out of the primeval chaos and then implemented the processes necessary to produce the existing cosmos.

The *Logos*, or *Pneuma* (literally, air, wind, spirit, or the ‘breath of life’), was thought to be a universal animating substance. Although a purely spiritual force, it contained an innate ability to create all forms of physical matter and to shape and animate all forms of life. First mentioned by Heraclitus, it was embraced by the Stoics and later by the Jewish philosopher Philo of Alexandria, who viewed it as the divine word of God that, when uttered, brought the world into being (cf, *Isaiah 55:11*). It is also the substance referred to in *John 1*.

After Aristotle established a clear distinction between organic and inorganic materials, both vitalistic and scientific theories of life became increasingly identified with organic (living) matter. However, this did not result in the demise of the old traditional concepts and there remained an interest in such issues as the ‘inherent power’ within nature and living matter and, in particular, how this interacted with and affected the spiritual component of humans.

From the Renaissance onwards, Western medicine began to increasingly break free of the old traditional methods, becoming more empirical, more willing to challenge what had previously been accepted as ‘holy writ’. However, while the new approach swept away many of the old superstitious and counterfeit-scientific beliefs, they were never completely extinguished, often finding refuge on the fringe of medicine as alternatives to the more orthodox medical practices. 

The second part of this article, complete with a list of references, will appear in the next issue.

Evidence Based Psychotherapy

Finding evidence among the
thickets of belief

A History and Current Status of Skeptical Clinical Psychology. A paper presented at the National Convention, Hobart, on November 18, 2007)

The Issue

The postgraduate schools of psychology based in the universities around Australia, where clinical psychologists are (we hope) educated and not just trained, vary in their theoretical orientations and emphases. Some are more traditional and include substantial elements of training in psychotherapeutic approaches, such as psychoanalysis, Gestalt therapy, narrative therapy, and Rogerian client-centred therapy. Others endorse the 'scientist-practitioner' model, and educate their students in what evidence and the scientific method mean, and how to critically read the literature in order to continue their education. These latter courses subsequently tend to train practitioners in evidence-based approaches such as cognitive-behaviour therapy (CBT) and interpersonal psychotherapy (IPT).

I was lucky enough to be educated and trained in Hobart at a time when evidence-based psychotherapy was in vogue. Although I am not fully a 'scientist-practitioner', because in private practice generalisable controlled research is not feasible, I have tried for the past 27 years to be a 'science-based

practitioner', keeping a close eye on the psychotherapy outcome research.

I am thus part of an, unfortunately, rare breed. The largest psychologists' organisation in Australia, the Australian Psychological Society, has numerous official interest groups, including: Buddhism and Psychology; Christianity and Psychology; Narrative Theory and Practice in Psychology; Psychology and Complementary and Alternative Medicine; and Sufism and Psychology.

But it hasn't one for Evidence-based Psychotherapy!

It appears the APS is more interested in being inclusive, numerous, and hence politically powerful, than exclusive, hard-nosed, science-based, small, but distinctive (from the many other 'softer' helping professions). This is despite the fact that what enabled clinical psychologists to grow from measuring-and-testing handmaidens for psychiatrists in mental institutions, to independent specialists in non-drug psychotherapeutic techniques, was an emphasis on measurement, science, evidence, and outcome research. Other helping professions have resorted to postmodern stances to seek status within medical, legal, and political structures ie, "Our subjective qualitative knowledge is



Gary Bakker, a clinical psychologist and long-time Skeptic, practices in northern Tasmania.

just as 'true' and just as valuable as your quantitative, 'scientific' knowledge."

The situation is worse in the US, where a recent survey identified only 11% of the psychotherapy practised there as evidence-based.

In Australia, we may have to rely on non-psychologists to push the barrow — even politicians, who want some bang for their buck. The recent inclusion of psychological services in the Medicare schedule specifies on its referral forms (though it does not prescribe) evidence-based therapies. Even here, though, politics has intruded. Also eligible for Medicare rebate are narrative therapy sessions, if provided to clients of Aboriginal or Torres Strait islander descent. I know of no outcome research supportive of narrative therapy (derived from a postmodern philosophy) over and above CBT, let alone specifically with Aboriginal clients.

Who do clinical psychologists help?

The sorts of therapies that clinical psychologists offer are mainly aimed at the 'intermediate'-type problems listed in Table 1.

These are intermediate in the sense that at one end of the continuum are common 'problems in living', such as life stresses, life transitions, bereavement, etc. For these difficult, but transitional, situations, a clinical psychologist is an expensive source of support. A counsellor, clergyman, mother, friend, or boss could do just as good a job. At the other end of the continuum are serious mental illnesses, probably with a crucial biochemical basis, for which medications are considered the first line of treatment, and for which you would likely consult a psychiatrist. These

Table 1
Examples of the sorts of problems clinical psychologists try to help with

Anxiety disorders	—Generalized Anxiety Disorder —Social Phobia —Obsessive-Compulsive Disorder —Panic Disorder and Agoraphobia —Specific Phobias —PTSD
Depression	
Relationship problems eg, marital	
Parenting problems	
Eating disorders	—anorexia —bulimia
Chronic pain	
Substance abuse/dependence	
Gambling problems	
Sleep problems	
Sexual difficulties	
Anger management	
Bedwetting	

include schizophrenia and bipolar affective disorder.

Origins

Unfortunately clinical psychology, unlike the 'hard' sciences, did not grow out of a body of 19th Century basic research. It grew out of philosophy. Psychology's first 'theories' were actually elaborate hypotheses. They weren't developed scientifically at all. The methods used were introspection, guesswork, verbal play with concepts, and subjective interpretation games.

Further, psychology is something we all have experience, opinions, and theories about. Few people have strong opinions on the relative merits of box girder versus suspension bridges, but we all seem to be able to tell when someone is being

illogical, or overreacting, or not parenting correctly.

Subsequent to all of this, over 400 different psychological theories and related therapies have appeared in the literature. How can I, as a professional, accountable, ethical, registered, fee-charging, science-based practitioner, choose among them?

Relevant Psychotherapy Research

There are two especially relevant criteria I can use in my choices:

(a) Which therapies are derived from established research-supported theories?

(b) And which therapies have real controlled outcome study support?

I like to use these two criteria to place available therapies on what I call the 'loopiness spectrum'. (See Figure 1) To the far left of this spectrum are therapies which contradict what we know about the world. They defy the laws of nature, anatomy, biochemistry, physics, or psychology. In the middle are therapies that could conceivably work, without us having to rewrite most of our university textbooks, but have no objective efficacy support beyond tradition, assertion, or anecdote. What we know can work, and makes some sense, is on the right of the spectrum.

I recently received an offer of malpractice insurance that listed 91 'approved modalities' they would cover me for. Among the clearly

'loopy' ones were crystal therapy, feng shui, homeopathy, iridology, reflexology, and Reiki. Among the middling 'unproven' ones were aromatherapy, colour therapy, emotional freedom techniques, flower

Figure 1: The Loopiness Spectrum

Loopy	Unproven	Proven
No, or negative, outcome research Not consistent with established body of knowledge (anatomy, biochemistry, learning theory...) Based on faith		Lots of outcome research support Consistent with established body of knowledge
Easy simplistic answers		Objective, disprovable, based on science Complex, difficult answers

remedies, hypnotherapy, magnetic field therapy, and neuro linguistic programming. (Where exactly on the loopiness spectrum these sit is, of course, open to debate).

When we apply our two criteria to this mess of fads, and to the traditional psychotherapies, what emerges? Let's take criterion (a) first. It is very possible to test the underlying theories. Two examples would be: (i) Do more people who were weaned early become smokers? This checks a psychoanalytic hypothesis about 'oral fixation'. (ii) Does a randomized intermittent reinforcement schedule on poker machines keep people playing them? This checks a conditioning theory hypothesis about intermittent reward systems.

So, here is a potted history of Testing the Theories:

History

As touched on already, the early theories in clinical psychology, such as Sigmund Freud's psychoanalytic theory, were developed by introspection, 'serious hard thinking', and subjective, uncontrolled, non-randomised, single case studies with undefined measures and no null hypothesis testing. This latter feature meant that they couldn't be wrong. If a patient reacted as predicted it was put down to 'projection' or 'sublimation' or some other hypothetical construct embedded in the theory. If they did the opposite to that predicted, there was some part of the theory to cover it; for Freud it was 'reaction formation'. Freud did not conduct one randomized controlled study in his life.

Because the elements of the theory were arbitrary, in the sense of being derived from speculation rather than any application of the scientific method, numerous equally impressive intellects then produced their own alternative, contradictory theories, such as Carl Jung's and Alfred Adler's, each depending upon their own personal preoccupations. Freud was obsessed with sex, Jung was preoccupied with race and

folklore, and Adler preferred to focus on power. As none of them recognized an objective (scientific) means to establish the truth, the schisms continue today, a hundred years on.

Largely as a reaction to this anti-scientific speculative process, a movement began in the 1920s, peaking in the 1950s, called Radical Behaviourism. In an attempt to bring some science into the picture, researchers such as JB Watson and BF Skinner rejected everything but observable behaviour. This meant that some solid, verifiable, progressive, consensual science could be done. And they developed a robust and valuable body of knowledge, labelled learning theory or conditioning theory.

necessary to explain even very simple behaviour changes, such as those that occurred through observational or vicarious learning or modelling. When this did not plunge experimental psychology into chaos, others such as Albert Ellis and Aaron Beck developed Cognitive-Behaviour Therapy (CBT) by applying the principles and techniques of learning theory and behaviour therapy to stimuli, behaviours, emotions, and cognitions. The model no longer had gaps, had more acceptability or face validity, and was found to produce very effective therapies.

What Works?

Which brings us to our second major criterion: What actually objectively works, in and of itself, beyond placebo/expectancy/suggestion/attention effects.

As an empiricist, this is an even more important question to me. If Custard Therapy is shown by a series of peer-reviewed, internationally replicated, randomized controlled trials, to fix depression quicker and more permanently than CBT, then I'll use it!

Modern medicine is becoming more and more evidence-based and is finding out just how much it used to rely on placebo effects, and spontaneous remission. One would expect that, of all the professions, psychologists would understand the power of placebo, suggestion, and expectancy effects, and allow for them in their research and subsequent theories.

Furthermore, psychology studies complex moving systems that are hard to control, both practically and ethically. It is therefore much more like agricultural science or horticulture or meteorology, than like physics or chemistry, in its research techniques. It has to use careful elaborate experimental techniques and statistical significance or trend analysis to extract its research conclusions.

Psychotherapy outcome studies can therefore vary in their power,

Table 2:
Oxford Centre for Evidence-based Medicine
Levels of Evidence

Level	
1a	Systematic review of RCTs
1b	Individual RCT
2a	Systematic review of cohort studies
2b	Individual cohort study or low quality RCT
3a	Systematic review of case-control studies
3b	Individual case-control study
4	Case-series or poor quality cohort and case-control studies
5	Expert opinion or based on theory

The behaviour therapies (such as aversion therapy) that arose from this were more verifiably effective, even at this primitive stage, than psychoanalysis, hypnosis, etc. But their effectiveness was largely confined to animals, young children, and institutions. With individual adults, therapy suffered from the exclusion of the 'black box' factors — of cognition, self-talk, beliefs, attitudes, etc.

Then Albert Bandura, and others, recommended we accept the introduction of cognitions into the model, on the assumption that self-report is a reliable measure of them. This was

reliability, or validity. At the very bottom of the hierarchy is anecdote or personal experience. Even professional experience is just a series of subjectively perceived personal experiences. At the top of the hierarchy are systematic reviews of randomised controlled trials (RCTs) as published in peer-reviewed journals. Table 2 gives an example of such a hierarchy.

The good news is that, obscured in the current blizzard of pop psychology, politically-driven postmodern psychology, and traditional arbitrary speculative psychology, a large number of 'scientist-practitioners' have been beaver away at the RCTs. And several bodies such as the Cochrane Collaboration, and authors such as Nathan and Gorman (2002) have undertaken ongoing meta-analyses and reviews of the research.

Objections to Outcome Research

Before describing a few of the clearer conclusions from the psychotherapy outcome research, two of the most common objections to this whole approach need to be dealt with.

When confronted with the seriously disappointing outcomes of such traditional arbitrary therapies as psychoanalysis, Gestalt therapy, narrative therapy, nondirective counselling, etc, practitioners (for there are very few researchers into these models) have defended their activities, often by claiming that behaviour therapy and CBT address only overt symptoms. Their therapies, they claim, attack the core underlying problem. However, if this is true, it is either undetectable or irrelevant. If a therapy does not reduce a ten-hour-a-day hand washing problem, or get people back to work sooner, or change a person's score on a reliable validated depression measure, or prevent divorces or bankruptcies or hospital admissions,

Table 3: Possible Treatments for Depression

Loopy	Unproven	Proven
<i>Crystal Healing</i>	<i>Hypnotherapy</i>	<i>CBT</i>
<i>Subliminal Tapes</i>	<i>Acupuncture</i>	<i>IPT</i>
<i>Reflexology</i>	<i>Psychoanalysis</i>	<i>Drug Therapies</i>
<i>Reiki</i>	<i>Herbalism</i>	<i>Behaviour Therapy</i>
<i>Rebirthing</i>	<i>Family Therapy</i>	<i>Exercise Therapy</i>
<i>Past Lives Therapy</i>	<i>Transcendental Meditation</i>	
<i>Homeopathy</i>		

but it does subjectively increase their 'ego strength' or similar hypothetical construct, is it worth the bother and expense?

Another argument attempted in the 1960s and 1970s, was that modifying only a person's symptoms will simply result in their underlying core psychopathology showing itself in some other symptomatic way. Unfortunately for the psychoanalysts and similar theorists, this is a verifiable empirical claim, and the behaviour therapists were able to check it out. The upshot of the 'symptom substitution' debate was that such substitution very definitely does not occur. In fact, the opposite occurs. When bed-wetting children, for example, are successfully 'symptomatically' treated using a bed-wetting alarm bell-and-pad, or just a reward system Star Chart, they subsequently show greater psychological stability and growth in other behaviours and areas of their lives. Not wetting the bed understandably does this for kids.

Depression Treatments: An Example

Now, based on our two criteria, we can place many of the psychotherapeutic options on our continuum. Table 3 proposes where on the loopiness spectrum some of these options seem to sit, currently. Some of this placement is, of course, debatable. For example, transcendental meditation™ is in the 'unproven' category simply because

we know that a sessional relaxation technique is almost useless with depression. If TM's claims about levitation and other special beyond-relaxation effects are taken seriously, then it clearly sits in the 'loopy' category.

However, if you're a therapist, and you've spent ten years studying

hypnotherapy or psychoanalysis or family therapy, or you've spent ten days studying reflexology or crystal healing, are you going to switch to CBT because the literature says it works? You are unfortunately more likely to disparage the science, or even the whole scientific method, in favour of what you 'know' works or 'can see' working. Especially because approaches such as CBT are really quite difficult. Much more difficult than deciding which bit of someone's foot to rub, or hypnotizing someone, or giving them a tape to listen to while they're asleep. Hence the fourth criterion of the loopiness spectrum in Figure 1.

General Recommendations

A sampling of indications from the outcome research in psychotherapy is given in Table 4.

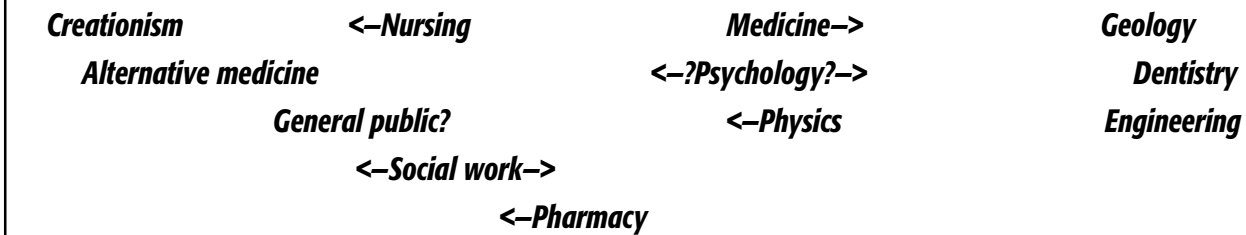
Table 4: General Recommendations

CBT/BT for most psychological problems, including anxiety and depressive ones.
IPT for depression, and possibly eating disorders.
Modern antidepressants for depression, but a high relapse rate.
Exercise for depression, and perhaps stress/anxiety.

Other Professions on the Spectrum

On a broader note, I have portrayed Psychology as at the crossroads between an inclusive, populist discipline, and an exclusive, hard-nosed, accountable, science-based one. This is represented on our Loopiness Spectrum in Figure 2 by arrows and question marks.

Figure 2: A Spectrum of Disciplines



Unfortunately, numerous surveys have shown the general public's position to be significantly to the left on our continuum (See Figure 2). In 27 years of practice I have yet to be asked by a client, "Do you use evidence-based therapies?" This makes any policy to tighten the science base of applied clinical psychology into what Sir Humphrey of *Yes, Minister* would call a 'courageous' decision. But I still feel the profession should lead rather than follow. But Figure 2 also makes claims about the current general positioning of some other disciplines on the continuum, and in which direction they appear to be shifting.

As noted earlier, **medicine** appears to be becoming more evidence-based, and more technological, but this is at the risk of being made more distant, procedural, and mechanical by those who follow the simple physical sciences, and ignore the 'softer' sciences like psychology.

Nursing, meantime, I would claim, is becoming more 'alternative' in some nursing schools. Rather than compete with doctors on their turf, nursing as a profession is tending to go for alternative and complementary treatments. The research in schools of nursing is predominantly 'qualitative'. That is, subjective conclusions from a series of interviews. This is not science — it is hypothesis generation.

The trend in **social work** seems to be in either direction, depending on which school one examines. Some teach casework social work, focus on practical help and advice for clients, and produce lovely pieces of re-

search, such as showing that a person's immediate support circle is the most critical factor predicting success or failure in overcoming an alcohol problem. Other schools are more politically focused, see science as part of the oppressive system, take a postmodern view of the world, and favour narrative therapy as a consequence. Non-feminists and men struggle to get through these courses.

Pharmacists, our recent Bent Spoon Award recipients, appear to be so commercially focused these days that they are happy to sell not only toys, giftware, and snacks, (Very professional. I might sell cleaning products to my therapy clients from now on.) but also every homeopathic preparation, bizarre therapeutic gadget, herb, vitamin, mineral, and weight loss program known to man.

By way of contrast, **dentists** have lobbied successfully for water supply fluoridation, which has reduced the rate of tooth decay in the community vastly, despite the indirect effect on their customer base, and despite the hysterical warnings of the poison conspiracists.

I am not a physicist, so I am very cheeky in where I have placed **physics**. Here is my justification: Physics has become so counter-intuitive, so based on the maths rather than verbal concepts, that the words ('space', 'time', 'chance'...) have very different meanings from their common usage meanings. Some physicists, insufficiently recognizing this, have become philosophers, in that they now play

with the words as thought this can lead to new truths in and of itself. This seems to apply to concepts such as 'multiple universes', 7 or 9 or 11 'dimensions', and 'string theory'. But a good example is the misuse of the Heisenberg Uncertainty Principle to extrapolate indeterminacy at the atomic level to indeterminacy at the psychological level, to justify or explain 'free will'. This is like using the General Theory of Relativity to explain why you look a bit like a lot of your relatives.

How therapists can easily be fooled by their biased subjective perceptions of their successes, in the light of spontaneous remission and placebo-type effects, has even been explained in basic learning theory terms. See HJ Eysenck, *Decline and Fall of the Freudian Empire* pp. 90-91.

I placed acupuncture in the middle category, even though it makes claims about immeasurable 'meridians', because some studies have suggested it may actually work with some nausea and some pain conditions. Recently, however, acupuncture has been shown to have a 'super placebo' effect. That is, both meridian acupuncture and sham acupuncture (random needle placement) can have equally large placebo effects. This explains the claims relating to nausea and pain. Both are very responsive to placebo effects. Obsessive compulsive disorder and cancerous tumours are not, and neither benefit from acupuncture. Perhaps acupuncture should be moved back to the loopy column? 🤪

Taking on the TGA

Actions speak louder than words in fighting pseudo-medicine

All it takes for evil to flourish is for good men to do nothing.

Edmund Burke

If you are in urgent need of CPR and I'm the only person available, I'm sad to say that you are going to die. Despite putting a first aid course as a regular item on my annual New Year 'to do' list (just above 'grow my own veggies' and 'get more exercise'), by January 2, all is forgotten. My entire knowledge of medical issues has been learnt from those weekly episodes of *RPA* (Royal Prince Alfred Hospital), so being published in the *Medical Journal of Australia (MJA)* in January this year continues to be an incredibly exciting and very special experience.

My copy of this issue of that prestigious medical journal lies open on the table, dog-eared and coffee-stained from being passed around friends, family and visitors who couldn't get out through my front door fast enough. With my background, this was never meant to happen, but it has. I know I'd better put my magazine away soon, but at the moment I'm still enjoying the compliments and accolades, the successes and failures, as I continue to reflect back on the sequence of events that led to this amazing feat.

After graduating in science in the early 1970s (majoring in physics and mathematics), while still hanging on to my new degree, I stumbled into

the world of early business computing. In those days, the technology was primitive and systems were fragile. These were often extremely stressful times — long hours and litres of coffee were required to patch up rickety systems and keep them running. Those brave businesses that were game enough to take on this leading edge technology often suffered badly.

There were many times I was sure the job was impossible and frustration became the norm, but like my fellow programmers, I kept soldiering on. I felt I had no choice — in the early hours of the morning, with a computer system in trouble, the buck stopped with me. As the years went by, the technology evolved, but even so, the work remained just as complex and difficult.

At an early age I had learned that I thrived on stress, and I understood that disappointment, like success, was a part of my professional life. I happily admit that I loved it. It was a great training ground, instilling in me a 'never give up' attitude, a strong work ethic and a lot of patience, attributes that are now deeply rooted in my personality, so when I think back on my recent experiences in relation to Complementary and Alternative Medicine (CAM), I'm merely applying the same principles and professional attitude learned so many years ago.



Loretta Marron, a science graduate with a business background, was Australian Skeptic of the Year for 2007.

www.healthinformation.com.au

Despite my parents setting up and running a private hospital, and despite their actively encouraging me to pursue a career in medicine, I have never been interested in this field of science. I know B for Band aid and P for Panadol, but very little in between.

Even being diagnosed with breast cancer in late 2003, once the initial shock was over (“I’m going to die!!”) and I realised that I would be around for many years to come, I soon became more interested in the workings of the Linear Accelerator, that for six weeks gave me my daily dose of radiotherapy, than the cancer itself.

Confronting the problem

I like to think I have an open mind (but not so open that my brain falls out), so I talked to all sorts of people who claimed to be health care professionals. The day my life changed direction was when I realised that the advice I was given by a naturopath working in my local pharmacy could have compromised my treatment. I was so bewildered and upset that I decided to do something about it. With no knowledge of CAM, there was much to learn, and learn I did.

As I read more, it was soon obvious that the scope of misinformation from so-called natural therapies, touted as health advice and aimed at the obese, cancer patients and seniors, was overwhelming. I felt that pharmacies were compromising their professionalism by hiring pseudo-scientifically trained staff (who undoubtedly graduated with Harry Potter), to sell these useless products. I knew that this was wrong and should not continue, and that this was really a fight for science and medical research over quackery, and quackery was winning.

In those early days I started writing to the one seniors’ magazine (with a circulation of 240,000) that I subscribed to, and which contained advertising for miracle cancer cures. It took quite a few letters, e-mails and reports, and a lot of references

to their mission statement, but the advertisements were eventually withdrawn. I know that success builds on success, and I now had my first win. Being a cancer survivor, a scientist and a senior gave me quite a bit of credibility. The fight that began back in 2004 after my cancer treatment has continued to be an important part of my life ever since.

Finding holes in the guidelines

Looking back over those four years, even though there were many times when I thought I could do no more, I’m pleased to say that the ideas and opportunities kept on flowing in. Once I started to get results, I soon understood that the loophole in the Therapeutic Goods Administration (TGA) *Guidelines for Listed Products* was so large that you could drive a B-double truck full of herbal remedies through it.

Page seven of the “*Guidelines for levels and kinds of evidence to support indications and claims*”¹ states:

The kinds of evidence which may support claims:

There are two types of evidence which may be used to support claims. These are:

- *evidence based on traditional use of a substance or product; and*
- *scientific evidence.*

Even when there is considerable research to show a product is not only ineffective, but potentially harmful, sponsors can obtain listings based on traditional evidence. When Black Cohosh (which, like other phytoestrogen products that target menopausal women, is now considered useless by a recent Cochrane review²) was linked to liver toxicity, for example, the TGA did not remove the product, but set up a group to work out new warnings on the packaging³.

No garden weed appears to have been missed by the sponsors who claim that everything from dandelions to prickly pear pills have health benefits, and we continue to see them line the shelves at every local

pharmacy. Sponsors can even claim their product is scientifically proven to work, by referring to some fairly dodgy research (which for some reason, when challenged, they have been reluctant to send me) based on studies involving two rats and a guinea pig, and with no peer reviews nor any checks for recent, more relevant research. The advertisements are eagerly approved by the Complementary Healthcare Council (CHC), no questions asked.

Taking action

So what could I do? The TGA website provided an answer when I found that you could do a word search on the Listed Products database which would give the Listing number, the product name and the name of the sponsor. It was exactly what I was looking for.

For seven months I sent a report per month to the Director, Non-Prescription Medicine, TGA, with titles stating (in big letters on the cover) that they were “Exploiting the Elderly” or “Contributing to the Suffering of Cancer Patients” and so on, and then demanding he delist these categories of ineffective products. These bulky reports contained up to 20 clinical trials and expert opinions on Government endorsed remedies, and also included Listing details for up to 2,000 products per report. Twenty copies were sent out, so the photocopiers of Brisbane and my local Post Office did well out of me in those days. Most of the recipients were Professors of Medicine, but I also included other health care professionals who shared my passion for evidence-based CAM.

Dr Ken Harvey, Adjunct Senior Research Fellow, School of Public Health, La Trobe University, was one of those recipients.

Report after report was sent out, with no result. The breakthrough came when I accused the TGA of “Contributing to the Obesity Epidemic”. This report also included a letter from Dr Lesley Campbell, Professor of Medicine, Director of Diabetes Services, St Vincent’s

Hospital, Garvan Institute of Medical Research, UNSW, and it listed 500 totally useless herbal remedies that claimed weight loss indications.

Dr Harvey contacted me soon after this report. He wanted to put together a team to publish in the *MJA* an article titled “Commercialism, choice and consumer protection: regulation of complementary medicines in Australia”⁴ to expose the TGA and the over two million dollars it receives every year (which includes fees for new Listings and ongoing annual fees) for these ineffective products.

The team would consist of himself as lead author, David B Newgreen, a pharmacist, and two consumer representatives, Viola Korczak from *CHOICE*, and myself.

Trouble with terms

As the article was to use weight-loss products as an example, the TGA was asked to provide a list of these products. They couldn't do it. The electronic listing system allows sponsors to use free-form text for their claims, and rather than tick the box that says “aids in weight loss”, they would use product names that included words like trim, slim and fat and terms like thermogenic, body-sculpting, detox, carb burning, calorie burning, weight accelerators, sugar balancing — and even weirder claims such as “strengthen kidney organ meridian energy to supply healthy liver Qi”. The products are pads, patches, pills, sprays, slimming teas and coffees, and include homeopathic remedies.

These products are meant to perform a range of miracles, including sucking the toxins out of our bodies as we sleep (no toxins are ever identified), stripping the fat off our bodies (no exercise or diet required), or even making us feel we have eaten a four-course meal.

Mining the data

To their credit, in the absence of the data we required, the TGA provided our team with a copy of part of their database, which included all the claims made by each and every sponsor.

It was sent to me. For a computer person fighting CAM, it was a gold mine. I soon felt like a kid locked in a candy store. I was in my element.

That first month, I sat hunched over my computer every day, and went through every claim for every Listed Product from 1996 to 2006. At the end of the month, I was a much wiser person, in that I'd started to recognise the more commonly used remedies, so I knew I had to go through the process again. I was aware of how important it was to be as accurate as I could be, and as the statistics unfolded, I could see that an important part of the success of our article was likely to rely on the data I was compiling. I couldn't afford to make any mistakes, so that extra effort helped me to sleep at night. I soon found that there were over 1000 products claiming weight loss, and for the past 10 years there continued to be an annual exponential growth in new Listings for these totally useless products.

Getting published

In February 2007, Dr Harvey submitted the article to the *MJA*. We knew we had a loaded cannon with what we had found. Now we sat back, waited and worried.

On January 7 2008, we were published.


During that month there were a lot of press, radio and television interviews and meetings with the TGA and Labor MPs. However, despite the good intentions of Senator Jan McLucas (responsible for the TGA), the law remains unchanged, so even though we know

we have made a difference, it's not over yet.

One of our aims is to have better consumer information about the Listing system, so that the public understands that a Listing number on a product does not mean that it works. We would also like to have better labelling (‘natural does not mean safe’) and have the guidelines changed so that science takes precedence over tradition. We would also like a system that would enable products that have proven efficacy to display a green tick (similar to the Heart Foundation's red tick).

However, companies like Symbion Health (which owns Bio-Organics, Cenovis, Nature's Own, Natural Nutrition, Golden Glow and Vitelli, as well as the trading names Terry White Pharmacies, Health Sense Pharmacies, CHEMMART, The Medicine Shoppe, Pharmacy Choice and Pharmacy Plus), Blackmores and Cat Media continue to try to influence politicians, and while the TGA puts money before the wellbeing of Australians, the fight continues.

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Convention 2008, Adelaide

The Placebo Effect

Explicating the seemingly inexplicable

The term placebo is used widely, but my discussions with some Skeptics have suggested a poor understanding of what is actually meant by the term. I recall a question at the Sydney conference in 2004, suggesting that the placebo was a real therapeutic entity rather than a chimera.

In previous articles I have emphasised the difference between a therapy (an improvement in an altered physiological state proven by a quasi-experiment with appropriate statistical analysis not to be erroneous at less than a 5% chance) and a remedy (an intervention which makes people feel better). Medicine has a long tradition of applying remedies which have gradually been eliminated from medicine as a discipline through the application of scientific method; regrettably venality, ignorance and confused ethics have ensured the persistence of many remedies applied by medical practitioners (acupuncture, massage, Freudian psychotherapy, etc.).

The placebo effect is a mix of changes in symptoms, and occasionally signs, that occurs when an intervention has either demonstrably no effect, or no scientifically rational reason for having an effect. Testing interventions in humans is difficult because ethics prevents true experimentation — we have to rely upon quasi-experimental designs, which rely on random sampling and comparison of experiment and control groups before intervention, to ensure

comparability. This process sometimes fails because of poor sampling, fraud, and in at least 5% of cases the normal vagaries of statistics.

A list of 'causes' of the placebo effect includes:
Natural (background) occurrence of symptoms;

Group sympathy effect;

Recurrent illness;

Chronic illness;

Recall biases;

The 'natural' progress of a disease state;

Fluctuation of symptoms;

Progressive improvement;

Variable outcomes because of differing stages of diagnosis;

Variable outcomes because of differing physiological states at the time of diagnosis;

Intervention effects;

Observation effect (Hawthorn effect);

Social recognition of illness;

Alleviation of anxiety;

Ritual and magic;

Belief and Faith;

Statistical effects;

Regression to the mean;

Sampling effects;

Sampling size;

Sampling bias.

Group sympathy effects

This phenomenon is best illustrated by symptoms developed in some people when they are exposed to an



David Brookman, when not presiding over the Hunter Skeptics with a rod of iron, is a kindly and caring medical practitioner.

odour, or similar effect which they believe is toxic. A recent example in Australia is the Virgin airport terminal poison gas scare in Melbourne in 2005. If, in the clinical trial, there is any way that groups may identify which group they belong to (control or intervention) this effect may occur.

I am having the white pills, but they gave me a terrible headache.

That's funny, I just started on those pills and I am getting a headache too...

Effects of recurrent illness.

There are many minor maladies where recurrence is the norm. Tension headache, migraine, pain with osteo-arthritis, etc. In any population there will be a certain number of people with the symptoms at any one time, and in any random sample of people there will be some who currently have the symptoms, or who recall having had them recently.

Treatment of such conditions, if successful, will reduce the frequency (the number of events experienced in a given period of time by affected individuals) and the prevalence (the number of people with the symptoms at a given time). A data collection which reports symptom reduction in a given group of people will not necessarily reflect a therapeutic effect unless the time period of symptom sampling is rigidly defined, such as by using a symptom diary.

Effects of chronic illness

The definition of chronicity in illness varies with the particular illness, and with varying medical technology. Thus, cutaneous fungal infections in rich white society is not regarded as chronic, but is in poor non-white communities where access to simple topical antifungals is not available.

Chronic illness is one which can be generally regarded as not being 'cured', but which is ameliorated symptomatically or physiologically. The intensity of symptoms associated with chronic illness does not correlate with the intensity of physiological disturbance and is subject to learning symptom tolerance.

The reporting of symptoms is also highly dependent on culture. Individual mental state significantly intrudes on the presence and intensity of symptoms. The best example of this is the effect of anxiety on gut smooth muscle associated pain (colic); anxiety increases the level of noradrenalin secreted from the adrenals. Noradrenalin stimulates contraction of gut smooth muscle and thereby increases pain (but relaxes airway smooth muscle). Thus the environment in which people are interviewed, the way in which they are interviewed, and even the local news may impinge on the reporting of symptoms and their severity.

Many symptoms, particularly pain, are subject to a learning effect (tolerance) — thus a person who has experienced a lot of pain generally is more tolerant of minor painful interventions than will be someone with little pain experience, their level of anxiety about the intervention will also differ.

Recall biases

Recall bias is the tendency to better recall events that are highly emotionally linked, either positively or negatively. Those of you who have suffered motion sickness will be well aware of the ability to recall past episodes of seasickness and the fear of travelling over waves that results. I can recall gagging on a particular synthetic apricot flavoured yoghurt which recalled the chewable antibiotics I was recurrently given as a child (mostly uselessly) for viral infections.

When subjects are asked to recall if they have 'had a headache in the last two weeks' they are more likely to remember if they infrequently have headaches, or if the headache was particularly unpleasant, or produced an adverse social effect. When conducting cross sectional prevalence studies (like the ABS health survey) this effect does not matter, but it is highly important if it is used when using a sensorily pleasant ritual for the treatment group, but not the control group.

Fluctuation in symptom severity

The intensity of symptoms of chronic illness varies over time. This may be physiological, such as with increased joint stiffness, or increased pain with local oedema at sites of inflammation accumulating with recumbency, or it may be due to diversion of introspection due to normal social activities (note increased distress from pain at night in a dark room).

Symptom intensity may be reduced by increasing sensory stimulation. Thus, exposing people to loud noise was used by dentists for extractions before anaesthesia, grading symptoms in with background diversion (music etc).

Progressive improvement

An illness has three possible paths, recovery, fluctuation, deterioration. The classic deterioration is seen with overwhelming infection, and also with untreatable malignancy; fluctuation is dealt with above. Short term illness is generally infectious, traumatic or psychosocial. There will be a definable time of onset, described as the clinical course. If the entity is new, progress will be partly predictable from physiology — mostly, people get better. Getting better means a loss of symptoms and signs. Any intervention can therefore be expected to historically show an improvement, if the illness under examination is self-limited.

For a population of 100 000, daily disease prevalence 2%, duration 10 days (ie, on any day 2000 people will have the disease and an average duration of 10 days means that 95% of people have symptoms for 10 days)

From this it can be seen that for any sample of people with a self-limited illness symptom prevalence will fall to background prevalence within the average duration irrespective of any intervention.

Variable outcomes as a result of different stages diagnosis

In the simple example above, 100% recovery from the self limited illness was assumed, and equality of

progression was also assumed. Reality is that for any sample of people with an illness there will be a notional range of severity. People with more severe illness will take longer to recover, and are more likely to present earlier in their illness due to more symptoms, or greater intensity of their symptoms. This means that the model above will follow a slightly different curve but still be asymptotic to the prevalence.

Variable outcomes due to different physiological states at time of diagnosis

This is similar to the point given above. It reflects the necessity for comparison of age, other disease, etc, that would impair the ability to recover from any illness, even when truly random sampling is used.

Observation effect

This is also known as intervention bias. It appears in the management literature as *the Hawthorn effect*. A US electric company was experimenting with how the level of lighting affected productivity. They selected a sample of workers and measured their productivity (the group knew they were being assessed). They then progressively lowered the lighting and found, paradoxically, a rise in productivity until the level of lighting was so low that the workers could not see to write. In this circumstance the workers were concerned that management was watching them and might terminate their employment.

In health interventions, the effect produces better compliance with therapy. Thus, more frequent observation and contact will produce a greater effect. This becomes important in studies where 'standard treatment' is used as a control. Frequency of contact needs to be the same with both intervention and control groups.

Social recognition of illness

I have, in past articles, emphasised the difference between an illness (a self perceived perturbation in physiological homeostasis) and

disease (an externally applied label based on predefined criteria, using symptoms, signs and investigations). The choice of terminology in this title is quite intentional.

It is all very well feeling too sick to undertake your normal social responsibilities, but without being labelled as such by a socially recognised 'expert' you are simply a shirker feigning illness. This particularly applies to problems where there is no physical sign observable to the untrained eye and where social attitude has been biased by venality. The best example I can think of for this is back pain. Back pain is a complex set of problems ranging from simple muscle strain, to major nerve and muscle disorders. It is a disorder in which there is considerable secondary gain which may be financial.

Which of the following would currently gain the most social recognition?

a. I bent over the other day and got this terrible pain in my back. I went to see the chiropractor who had a feel of my back and said it was out and he needed to put it back in. He rubbed it a bit and twisted my back around until it clicked. It felt OK for half an hour or so, and he said to go back every couple of days until it gets better. It only cost \$60.00. He said there was a severe problem and if I did not get treated I would end up in a wheelchair.

b. I bent over the other day and got this terrible pain in my back. I went to see the doctor who asked me a whole lot of questions, tapped me on the back, and fiddled with my legs and reflexes. She said it was only a muscle injury and it would settle down in a couple of weeks and that I should use hot packs when there was spasm, maintain my normal activity as far as possible, and only take pain killers at night. It still hurts and is not much better after a week. It cost me \$20 and she did not even send me for any tests.

Alleviation of anxiety

For those untrained in medicine (or even in the speciality where the problem exists), a set of symptoms

may be worrying, simple reassurance may reduce that anxiety. The better trained and more experienced the health practitioner, the more likely they are to collect more evidence pertaining to symptoms (in the form of history, physical signs, and investigations) and then investigate further if there is a possible important illness to exclude. The less trained and less skilled are more likely to act on one symptom, to demand the pathognomonic test, and to reassure inappropriately.

Generally, the lower is the understanding of causes of symptoms and physiology, the greater is the anxiety, and the greater the acceptance of anatomically and physiologically impossible explanations.

Ritual and magic

Medicine was associated with religion before the scientific era, as there were no effective nonsurgical treatments. Alleviation of symptoms required suggestibility. The involvement of ritual is important in many alternatives to medicine (acupuncture, reflexology, therapeutic touch, chromotherapy, aromatherapy, music therapy etc) — all rely upon suggestibility, which is linked to susceptibility to hypnosis and possibly religious training. Some activities in science-based medical care also have a ritual effect — X-ray imaging is a prime example. Ritual involved in providing and intervention, or in simply assessing responses, may impinge on the sense of wellbeing expressed by subjects and controls.

Belief and faith

Interventions with a high degree of ritual present difficulties in evaluation. The sample group may or may not believe in the intervention, so finding a suitable comparison may be difficult but not impossible. A suitable placebo for acupuncture has been developed (it produces the same changes on fMRI) — but has not been widely used. It certainly was not used in the 'studies' of acupuncture, published over the past two years in the *BMJ*, which

are widely used for marketing acupuncture by the medical profession. No studies have published comparisons of subjects belief in acupuncture as a treatment and most subjects have been recruited by practitioners offering the treatment.

This is a form of sample selection bias, but it is dependent upon belief in the treatment. If you have a sample of people who believe in acupuncture, divided into control and intervention groups, one group receives acupuncture, the other does not receive acupuncture, there will clearly be a difference perceived by the patients — one having their faith satisfied, the other denied.

Any valid study of an intervention requires random sampling, comparison of control and intervention groups, and a control that is indistinguishable from the intervention. The absence of these negates any structural correctness in the trial.

Regression to the mean

This is a statistical phenomenon that complicates risk factor intervention studies. Take a random sample of people and measure a physiological attribute that has been linked to risk of disease (cholesterol is a good example). There will be a range of values for cholesterol within that sample, there will be a mean, and the frequency of cholesterol measured will follow a bell type curve around that mean. Now, by definition, the risk is posed by an elevated cholesterol, and for the purpose of this example we will say more than one standard deviation from the mean is associated with increased risk.

From our sample of 10 000 people, take a subgroup of 16% with a cholesterol above one standard deviation from the mean. Within this group there will be some who have a physiological reason for the elevation of the cholesterol (lipoprotein lipase deficiency, insulin resistance), and others who are there by chance — on the particular day their cholesterol was higher than usual — and/or the machine reading the cholesterol read high for that par-

ticular reading (measurement bias), and/or there was some other random event in play. The frequency distribution will, however, follow the cut-off tail of the random population curve.

Let us now resample all this same group, with no intervention. What will happen to the average cholesterol for the group? What sort of frequency curve will it follow?

The cholesterol readings will now follow a near normal distribution when graphed using the same subgroup. The average cholesterol for the subgroup will remain higher than the whole population average, but the average for the subgroup will be lower than it was when previously measured. This is purely a statistical artefact caused by resampling and retesting — yet it has appeared in medical literature as indicative of a therapeutic benefit.

Sampling size

I am sure the Skeptical mathematicians reading this will be hopeful of a long dissertation on type 1 and type 2 errors, but I won't, for the sake of the long suffering reader who has ploughed this far. Let us simply assert that the smaller the sample size taken from any population, the less is the chance that the measures applied to that sample will approximate the population average.

This means that to rely upon a small therapeutic effect, a large sample must be drawn randomly from the population under test. This is why many thousands of people with coronary occlusion had to be randomly allocated to placebo and thrombolytic, in the large multicentre trials that revolutionised the management of myocardial infarction. Meta analysis tries to correct for this by amalgamating studies of similar design and to obviate the need for huge multicentre trials.

Sampling bias

This is a common bias in clinical studies, introduced because of the difficulty of randomly sampling from

the affected populations. It may be quite subtle. A good example would be to sample the Masai people, measure their height, and claim that all dark skinned Africans were of the same height distribution.

There have been many serious studies which have succumbed to this effect. A few years ago an Australian study claimed circumcision protected against gonorrhoea and syphilis. The sample was based on people attending the Sexually Transmitted diseases clinic in a capital city, and used the reported population incidence of disease as a measure. Not only is the population incidence highly under-reported, but the population attending the STD clinic was skewed with a greater proportion of international sailors and other visitors.

The argument ran as follows:

There are X people attending the STD clinic per annum;

Y/X of these are circumcised;

There are P/T cases of STD reported per annum in the population;

The population prevalence of circumcision is R/T (where T is the total population).

Now the expected proportion of people attending the STD clinic who were circumcised is $R * X / T$. Y/X is greater than this, therefore fewer people who are circumcised are contracting STD). That X was not a subset of T escaped the authors.

For those readers who have struggled with this article I sympathise. Add to this the burden of keeping abreast of the technical advances in medicine and you can well understand why so few medical practitioners are rigorous in applying evidence based practice and are unduly influenced by the marketing of pharmaceuticals and placebos in our society.

So, fellow Skeptics, we have the tools for rational delivery of health care. What is lacking is the capacity to apply them, and this will require a fundamental change in education which gives people the capacity to analyse, rather than learn by rote

Samson the Role Model?

Just the thing for the young and impressionable

The story of Samson and Delilah has been told to millions of Sunday School children. Samson has great strength that has been given to him by the Lord, so it is presumed he is one of the good guys.

Based, I suppose, on the same logic, a US-based toy company, One2believe, has produced a series of action dolls based on biblical characters. One of them is Samson. The idea is to encourage children to take an interest in the Bible and, presumably, to give them some role models. The following is what appears in the One2believe website for Samson.

Samson Spirit Warrior

Item# MOF40106

\$24.99

Description

Samson was one of the strongest men who ever lived. He was used by God to destroy his enemies and do some other pretty amazing things! He caught over three hundred foxes by himself; he killed a lion with his bare-hands; he killed 30 men in one night without any weapons; and he even used the jawbone of a donkey to single-handedly defeat one thousand men!

The secret to Samson's strength was his hair! God had blessed him with this incredible gift, but it was all based on one condition: he could not cut his hair. So, Samson did all that he could to protect his secret.

One day, Samson's enemies discovered his secret and they cut his hair. Samson's strength left and his enemies captured him. But Samson prayed that God would let him use his strength one last time. God answered his prayer and Samson performed one of the greatest feats of strength ever! (Judges 13-16)

Children can make this story come to life with one of our amazing Spirit Warriors, Samson! This action figure comes with everything you need to help your child learn about this fascinating Tale of Glory. Item includes a colorful "Samson, The Strongest Man to Ever Live" mini-storybook and a 13" Samson action-figure (with outfit). For ages 3+.

Story Book Included .¹

One2Believe is a toy making company whose CEO, David Socha, lives in California "with his Proverbs 31 wife".

In a BBC news item about the figures we are told:

David Socha, founder of One2believe, the company which makes the dolls, is confident the demand is there for "God-honouring" toys which reflect Christian teachings and morality.²

Role model

But is Samson a suitable role model? The following is how I, a freethinker, interpret the story of Samson from Judges 13 to 16 in the *Old Testament*.

Samson's parents had been unable to have any children. One



Peter Hogan, VP of the Victorian committee, and a retired teacher, joined the Skeptics shortly after Samson destroyed the temple.

day an Angel of the Lord came and told them they could have a son. He would have super human strength as long as he didn't shave his head.

Less well known than the story of Samson and Delilah is a revealing story involving Samson's first wife. She is from another tribe, the Philistines, so there is animosity between Samson and the rest of her tribe.

Samson has killed a lion and a swarm of bees have made a hive in the skull. Samson poses a riddle based on this event to 30 of his wife's friends and bets them they can't solve it. His riddle is "Out of the eater came forth meat, and out of the strong came forth sweetness".³

If Samson loses the bet he has to supply all his wife's friends with clothes. His wife wheedles the answer out of Samson and tells her friends. They claim to have won the bet so Samson has to pay up. Now I guess we have to give him credit for honouring his bet but his method is hardly a good example for children.

This is how the Bible tells it:

*And the Spirit of the LORD came upon him, and he went down to Ashkelon, and slew thirty men of them, and took their spoil, and gave change of garments unto them which expounded the riddle. And his anger was kindled, and he went up to his father's house.*⁴

And there are Christians who want to use Samson as a role model for children!

In *Judges* 15 there is a weird story about Samson killing a thousand men for no good reason. However it would take too much space to tell it here. It's interesting reading.

Samson and Delilah

The story of Samson and Delilah also has a dubious moral message. After his first wife is killed Samson is smitten by Delilah and takes her for his wife. But she is also from the Philistines. The leaders of the Philistines really have it in for Samson because he has killed many of their people and destroyed their crops. They want to capture him but need to find a way of subduing his great strength.

They bribe Delilah to find out the secret of his strength. She asks him, and he tells her he will have the strength of a normal man if he is bound with seven pliant green willow branches. She tells the leaders, who give her the branches, and she ties him up. Her friends try to capture Samson but he easily gets away.

Twice more Delilah asks him for his secret, and he deceives her. She tells the Philistines and helps them try to capture him, but he escapes.

Delilah implores Samson. "I am your wife. If you loved me you would not lie to me. Tell me the secret of your strength."

Now you would think that any bloke with a few brain cells would realise that his wife was helping her friends to do him in, and would say something like "Hang on my dear, if you were a loving wife you wouldn't be helping your friends attack me." But Samson is apparently pretty dumb, so he tells her the real secret to controlling his strength — cut off his hair.

And off she goes to tell her friends who, with Delilah's help, do just that. Having captured him the Philistine leaders blind Samson and put him in prison.

One day Samson is taken to a temple so that the Philistines can have a bit of fun with him while they thank their God for ridding them of this thug. He's pretty angry at what the Philistines have done to him. He wants revenge and he sees an opportunity. He reckons that if he can bring down the temple he'll feel better so he asks his God to give him back his strength for one last effort.

Now the temple is full of thousands of Philistines, including women and children. So you would think that God, who Christians say is all knowing and compassionate, would say something like, "Wait a minute big fellow. There are thousands of innocent people in the temple who haven't done anything to you. It's a bit over the top to kill them all. How about finding a more targeted way of getting revenge?" (God is OK with revenge.)

But God gives Samson back his strength and he pulls down the columns holding up the temple. As the Bible tells it:

*And Samson said, Let me die with the Philistines. And he bowed himself with all his might; and the house fell upon the lords, and upon all the people that were therein. So the dead which he slew at his death were more than they which he slew in his life.*⁵

And this murderous, dumb thug, aided by an uncaring God, is being promoted as a role model for children!

Indoctrination

Of course, as a person who doesn't see any good reason to believe in a God, and who does not accept that the Bible is divinely inspired and literally true, I'm considered by Christian fundamentalists to be without any morality, a claim I find highly offensive. But if they can hold up Samson as a role model to children, I think they are the ones who have a twisted sense of morality.

This is an example of the dangers of the religious indoctrination of children. Education should be about encouraging children to think and ask questions. But when children question these rather silly Bible stories they are often discouraged and fobbed off.

Of course this is not just a failing of Christian fundamentalists. Islamic fundamentalists are far worse.

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The Real Deal on Dealey

Perennial conspiracy nailed for the moment

***Reclaiming History: The Assassination of President John F. Kennedy*, Vincent Bugliosi, W.W. Norton 2007, 1612pp + xlvi + CD. ISBN 978-0393045253**

Vincent Bugliosi's blockbuster examination of President Kennedy's assassination is, like Dr Who's Tardis, much larger inside than out. (No mean feat for a book four inches thick and weighing five pounds!) But the 1650 printed pages are augmented by a CD containing two files. One has 100 pages of references: Bugliosi's book is hugely referenced and this alone makes it invaluable as a historical resource. The other has almost a thousand pages of endnotes: some of these contain minor points, others run to 20 pages or more of detailed discussion of key parts of the debate: the acoustic evidence, the medical evidence, and so on. Fortunately, both paper and electronic pages are covered by a thorough and useful index, so even the casual reader should not get lost. (Though they will need strong wrists!)

More importantly, the book contains Bugliosi himself. He comes to this case as an experienced prosecutor — his successful prosecution of the Manson Family murders was the subject of his book *Helter Skelter* — and he was hired by Britain's London Weekend TV in 1986 to be the prosecuting counsel in their mock trial of Lee Harvey

Oswald. (Bugliosi got Oswald convicted!) The TV show involved many of the witnesses who would have testified had Oswald lived to go to trial, as well as a judge and jury from Texas. Plainly the experience affected Bugliosi, since he has spent two decades working his way through all of the evidence, not only the official work of the Warren Commission, House Committee, *et al*, but also the enormous flood of secondary literature — books, articles, films, etc — that have emerged in the four decades since Kennedy's death. (And somehow in that period he has found time to write books on OJ Simpson, Monicagate!)

What makes Bugliosi special is partly his prosecutorial expertise: he writes as someone who knows how evidence is handled and what counts as good evidence, and a good witness, in court. This, combined with a critical attention to detail and the logic of real life, enables him to cut a swathe through a good deal of nonsense, sorting the material and applying sensible courtroom standards. And he usually does this with good humour, though Bugliosi's sarcasm does get rather wearing at times.

Matters of fact

The book falls into two unequal halves. The first is entitled *Matters of Fact — What Happened*, an



Jerry Goodenough teaches philosophy, critical thinking & humanities for the University of East Anglia and The Open University in England. He has a philosophical interest in conspiracy theories and has been a student of the JFK assassination for so long, that he now cultivates his own grassy knoll.

attempt to lay out as clearly as possible the events of the weekend of Kennedy's assassination. Within this half of the book are embedded two other books: there is a 300-page chapter 'Four Days in November', an immensely detailed and heavily documented narrative of events from Kennedy's arrival in Dallas to Oswald's funeral three days later.

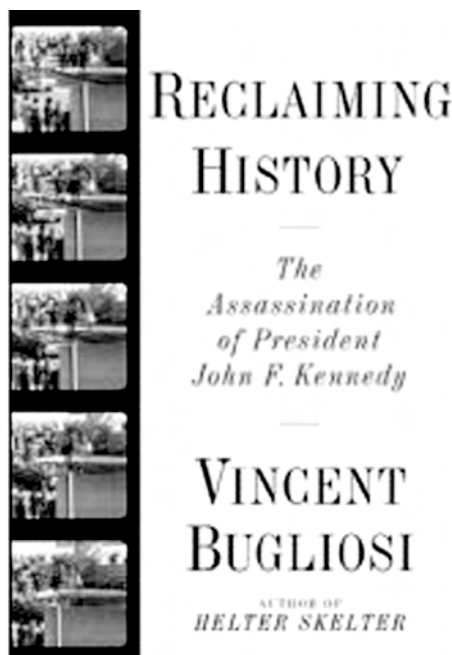
Then there is a 275-page chapter narrating the life of Lee Harvey Oswald up until the day of the assassination. (This covers a good deal of the ground familiar to readers of Priscilla Macmillan Johnson's 1978 *Marina and Lee* or Norman Mailer's 1995 *Oswald's Tale*, though there is some new material and a good deal of explanation.) Around these two chapters is a collection of shorter chapters examining the ballistics evidence, Abraham Zapruder's film of the assassination, the Warren Commission and other investigations into the assassination, Oswald's possession of the murder weapon, his movements on the day of the assassination, and so on.

There is, then, a mass of material, sometimes repetitive but always closely referenced to primary sources, to the forensic evidence and witness testimony accumulated by the Warren Commission and other investigators: in other words, to the evidence that would have been produced had Oswald gone to trial. Why so much of this material? One might be tempted to think of this bloated mass as just some kind of testimony to Bugliosi's obsession, to the insistence on accumulating as much data as possible.

Conspiracy delusions

But this would be a mistake: Bugliosi has a strategy that requires this material. The sheer weight of the evidence for Oswald's guilt accumulated in the first part of the book is brought to bear in the second, *Delusions of Conspiracy: What Did Not Happen*, where Bugliosi tackles the JFK conspiracy movement. He claimed at the outset that this would be the first anti-

conspiracy book about the JFK case. (Other books, Jim Moore's underrated *Conspiracy of One* and Gerald Posner's more famous but contentious *Case Closed*, have argued for Oswald's guilt but at the expense of spending little time addressing the conspiracy theories in detail.) In this section Bugliosi narrates the growth of the conspiracy movement from the first suspicious articles published before the Warren Report was released through the great growth in literature post-Watergate to Oliver



Stone's movie *JFK* and beyond. (A chapter is devoted to a small selection of the many errors, omissions and distortions in Stone's wretched film. As Bugliosi says, listing all of these would take another book!)

Other chapters consider one by one the various organisations that have been proposed as possible conspirators: the CIA, Cubans both pro and anti-Castro, the Mafia, the FBI, the KGB, the Secret Service, Lyndon Johnson, American right-wingers and so on. In a delicious little chapter that illustrates how much disagreement there remains among conspiracy theorists after four whole decades of research, Bugliosi just lists the 44 organisations, 214 conspirators and 82

gunmen that have been named by theorists.

In this second part of the book, Bugliosi's strategy bears fruit. In the first place, he is able to show that these conspiracy theories are not only often logically unsound but rest on dubious evidence that can easily be discredited, misunderstandings, and so on. In each case we are shown how the organisation in question really had no motive for Kennedy's death and gained nothing by it. (Bugliosi is especially good on organised crime, where his professional expertise comes into its own.) In the second place, he is able to show how such theories eventually run aground on the great mass of evidence indicating Oswald's solitary guilt. We can see this if we look at two of the most recent conspiratorial theories presently doing the rounds.

Deconspiring the conspiracies

A recent British-made television documentary entitled *JFK - The Cuban Connection* asserts that Oswald alone shot Kennedy, but that he was hired to do so by members of the Cuban intelligence services. (And the presumption is that Castro was behind this, possibly with the aid and approval of the KGB.) Certain aged Cubans tell their story to the camera. But it is a story that Bugliosi has already dissected, exposing its many implausibilities. Would an intelligence agent really meet Oswald on a public street in full view of any passer-by in order to pay him a large sum of money to kill the US president? And what possible motive could Castro have for such a killing? Would the Johnson administration have been any better disposed towards Cuba? (Castro himself said this to investigators of the House Committee in 1978, making the very sound point that he had nothing to gain by procuring Kennedy's death and an enormous amount, the very independence of Cuba, to lose.) US policy towards Cuba remained the same after Kennedy's death as it was before, and as it is to this day.

The programme-makers don't try at all to deal with the mass of evidence for Oswald's nature as solitary assassin. They skate over the whole problem of the assassination itself in one line of commentary, either a bare-faced lie or an astonishing piece of ignorance depending upon how charitable you feel. For they assert that Oswald went back to Dallas from his alleged meeting with Cuban agents in Mexico City and immediately sought out a job overlooking the presidential motorcade route in order to get on with assassinating Kennedy. But the first part of Bugliosi's book has demonstrated beyond all reasonable doubt that Oswald obtained his job at the Texas School Book Depository through a sequence of purely contingent events, and at a time when no presidential motorcade had been planned!

So there goes that theory. Let's try another one, the subject of at least two recent books. (See, eg, James Fetzer's edited collection *Assassination Science*.) Here the proposition is that the home movie of the assassination taken by Dallas garment-manufacturer Abraham Zapruder was, once it was in the hands of the authorities on the evening of the killing, taken to some secret laboratory and doctored in order to show a sequence of events within the presidential limousine consistent with Oswald's having fired all of the shots, concealing evidence of shots from elsewhere. (Long-time students of the case like myself are fascinated by this suggestion, given that for more than two decades the Zapruder film was taken by conspiracy-theorists to be one of the most solid pieces of evidence *against* Oswald having fired all the shots!)

One may try to deal with this allegation by technical analysis. Are the phenomena, that the conspiracy-theorists claim to see in this short and often blurred sequence of movie-frames, really there? Were there techniques available in 1963 to fake the film in the way alleged? (Are there such techniques today?) But Bugliosi sinks the whole ludicrous

mess by the simple application of common sense. If Oswald wasn't the only assassin, what possible motive could the alleged conspirators have had to seize Zapruder's film and make it look as though Oswald alone did it? For how could they possibly know on the evening of the assassination that none of the other tens of thousands of inhabitants of Dallas and environs hadn't brought along a movie camera when they came to see the president drive by? If anyone had, then there would be film of the assassination, film that contradicted the version that the conspirators wished to be made public, in the hands of some Texan citizen somewhere, who would no doubt rapidly give it to some newspaper or television organisation.

In fact, there were at least eight other movie cameras and a couple of dozen still cameras in Dealey Plaza that day. And the pictures produced are all consistent with Oswald as lone assassin. It turns out that Zapruder's film gives far and away the best picture of events in the presidential limousine as the shots were fired. But putative conspirators couldn't have known that this would be the case. (In fact, it very nearly wasn't: Zapruder came to work without his movie-camera, and was chided by one of his employees to go home and get it before the president arrived.) As a matter of pure logic, the conspirators could have had no reason to manipulate Zapruder's film unless they could know for sure that there were no other films of the assassination in existence, or that every other film that was in existence could be obtained and manipulated too. So there goes Fetzer's hypothesis.

A monument of scholarship

And so the book goes on, dissolving and demolishing one conspiratorial theory after another with the application of logic, experience and the enormous quantity of evidence for Oswald's guilt. It is a monument of scholarship. No serious student of the Kennedy assassination or modern American history should fail


to read it. Even the more general skeptic can learn much from perusing it, from seeing critical thinking and prosecutorial experience in action. (And the skeptic must prepare to be surprised: for instance, Bugliosi mounts an interesting defence of the reliability of eye-witness testimony, the sort of testimony that in other cases skeptics have been all too willing to dismiss or downgrade.)

Will the book do any good? It may not do anything to change a situation where polls indicate enormous majorities of citizens, in the US and elsewhere, believe in a conspiracy. And, to judge by some of the reviews it has received on Amazon and other web-sites, it won't change the beliefs of dedicated conspiracy-theorists, for the true believer won't be moved, even by a mountain of evidence like this.

Bugliosi recognises this, towards the end of the book relating a joke where all the conspiracy buffs are "lined up in front of God at the end of time asking him 'Tell us, God, who really killed President Kennedy?'" When God replies, 'Listen, I'm just going to tell you one time and one time only, and then I want you to forget about this matter – Lee Harvey Oswald killed Kennedy and he acted alone', the buffs, in terrible angst, nudge each other nervously and say 'This is a lot bigger than we thought!'

But the rest of us have no excuse now this book is available. Bugliosi has used skepticism and critical intelligence to clean away decades of nonsense, leaving us with the real story of that terrible weekend, real life with all its accidents, coincidences, awkwardnesses. History reclaimed indeed.

Editor's Note:

Students of conspiracy theory are invited to look at the readers' reviews of this book on the Amazon site and note the difference in tone and literacy between those who give favourable and unfavourable reviews. It is quite instructive. 

What is Happening to Our ABC?

Despite winning the most non-sought-after award — the Skeptics Bent Spoon for 2007, our ABC is at it again — this time with possibly the most nonsensical documentary ever put to air.

I refer to the pseudo-documentary entitled *Experiences*, shown on Thursday Jan 3, wherein a case for the truth of alien abduction stories is supposedly made. This is to say that the purpose of the presentation was to seek and present evidence of the actuality of alien abduction by interviewing putative abductees, children included. Several children from the same school where (it was alleged) a flying saucer (cut to drawings out of the *Boys' Own Annual* circa 1958) hovered over the school playground, were interviewed, and were obviously distressed by the experience. Not by the attempted abductions, but by the interviewing procedure itself, accompanied as it was by TV cameras, lights, and the presence of members of the teaching staff who clearly knew they were onto a good thing. That the children had been primed was, to me, obvious. How



Peter Williams


many six or seven year olds do you know who commonly use words such as 'hovering'; 'aliens'; 'evil'; or even 'white eye pupils' to describe their experiences? Two of the little girls were trembling and close to tears, due, I believe, to the relentless questioning rather than anything else, and also, I suspect, to the paucity of their preparation. To add insult to injury, the footage had obviously been heavily edited.

The essential point made in favour of these several stories being true, was that many of them shared the same experiential description; drawings of ET-like heads and eyes, and thin elongated bodies although, by remarkable coincidence (considering the vastness of the known universe and the incalculably large number of logically possible developmental permutations), having a general bodily configuration similar to our own. Predictably, no examples of non-typical stories were presented.

The usual vague and tedious descriptions of paralysis, home invasions, feelings of fear, lights, tunnels, floating and looking down etc, were very much in evidence and were obviously (to me at least) more the outpourings of disturbed and highly suggestible individuals ranging from liars through the mildly neurotic to full blown psychotics rather than rational descriptions of actual events. In fact, out-of-body experiences are fairly well understood as being a (generally momentary) brain dysfunction or, in the case of very young children, a result of not yet fully formed neurological connections.

Possibly the most bizarre aspect of this sorry spectacle was the fact that the whole thing was presented and monitored by professional academics, albeit of the psychiatric (or even theatrical) persuasion, and therefore mad by definition. To expect a dispassionate review of available evidence by a psychologist or a psychiatrist (I am vague as to the difference although I believe that the psychiatrist can order incarceration and is therefore best avoided) is a bit like asking an alcoholic to do a stocktake of the liquor cabinet and expecting an accurate assessment — you know that you are going to come up short.

The fundamental flaw in this program is, like so many others, the assumption that anything we do not immediately understand is necessarily the result of 'other world' or 'alien' intervention. The assumed corollary is of course that we know everything there is to know about the world around us.

Some people may well believe that they have been abducted by aliens — some also believe that they are Napoleon. Both groups, I believe, are wrong. Further, there is nothing in this boring catalogue of staged anecdotal nonsense, complete with sepulchral voice overs uttering the usual clichés (could we be at the dawn of a new age?) that provides the slightest basis for believing otherwise. The ABC stands condemned for spending public money on this sort of rubbish, and well deserves censure for doing so. 

Of Goats and Quacks

Virility enhancement; not so good for randy old goats

Charlatan: America's Most Dangerous Huckster, the Man Who Pursued Him, and the Age of Flimflam, Pope Brock; Crown Publishers 2008.

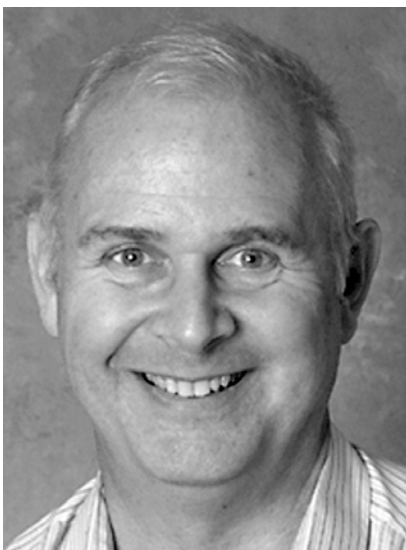
Everybody knows Viagra now a days, and what it treats. Eighty years ago, everyone knew of the “goat gland” treatment, which not only treated what Viagra treats, but also brought a general rejuvenation to men, eliminated flab, advanced previously receding hairlines, and provided other miraculous cures. Provided cures, that is, to the gullible. The goat gland treatment never worked, despite its fame, and unlike the talismans that men have used for millennia to restore vigor, it had serious, sometimes lethal side effects. That little drawback did not impair the career of Doctor (perhaps that should be “Doctor”) John R. Brinkley, one of the most famous of names in America in the 1930s. His astonishing rise and fall story is told with wry good humor in *Charlatan*. Brinkley is gone, and Brock does not harp on lessons we might learn from his enterprise, but it is clear that although we don't do goat glands anymore, the golden age for medical hucksterism has never entered its twilight.

“Snake Oil” came from the 1893 Chicago World's Fair act in which a stage cowboy would strangle rattlesnakes and extract their liquids.

People bought snake oil, and Brinkley came of age during the grand patent medicine era where anyone could dream up a cure from (usually) more home-spun materials and make a fortune if the advertising was good.

Brinkley himself was a farm boy who fiddled with “electric medicine” and injecting colored water into the buttocks of patients, which got him jailed in South Carolina in 1913 for practicing without a license. Once sprung, he headed to Chicago. He got his medical education from Bennett Eclectic Medical College, the sort of institution the American Medical Association loathed because it relied chiefly on herbal remedies. In 1908 when he entered the school, AMA-approved schools gave medical degrees, but so did schools of chiropractic, homeopathy, osteopathy, and others, and in most states, each branch of medicine had its own licensing board, and all were lax and corrupt. Brinkley even quit his Eclectic school before graduating, but in 1915 he paid \$150 for a degree from the Eclectic Medical University of Kansas City, and he was in business.

A newspaper ad informed him that Milford, Kansas, needed a doctor, and he signed up, barely making a living in the little town. And then a farmer named Bill Stittsworth came to the clinic, complaining that he had no pep, and



Rob Hardy, who practices psychiatry in Mississippi (the state, not the river), is a regular reviewer for the *Skeptic*.

looking out the window, mused that he wished he had the testicles of a billy-goat, though he expressed the thought in a more rustic fashion. This was the spark that was the making of Brinkley, although the story of that spark was unclear. Brinkley said the farmer pleaded to have installed within him the testicles of a goat, and the farmer's family later contended that Brinkley pleaded for the procedure and paid the farmer to let him try it. Stittsworth was so happy with the results that other locals started coming in for the procedure, and Mrs Stittsworth asked to have goat ovaries implanted. The citizenry of Milford thought the doctor was onto something, because the little town benefited from the influx of patients.

Brinkley was a pioneer in radio. He developed the program *Medical Question Box*. Listeners would send in letters, Brinkley would diagnose each case on the air and suggest treatment, invariably special Brinkley formulas available from pharmacists who were in on the scam and kicked a dollar back to him for each jar they sold. Radio was new at the time, and no one really knew anything about radio advertising, with most of the start-up stations refusing to take ads. When the ancestor of the Federal Communications Commission went after him, Brinkley transferred his broadcasts to a high power transmitter across the border in Mexico.

His influence was not just on glands or medical treatments; he broadcast country music, and because of its range, station XER made country and hillbilly music even more popular than the Grand Ole Opry broadcasts. Not only did the broadcasts affect the musical careers of young listeners Waylon Jennings and Chet Atkins, the "Original Carter Family" broadcast on the station; the young Johnny Cash first heard his future bride June Carter there.

Brinkley became a right-wing demagogue on the radio, ranting against communism and at least

initially giving tacit approval to Nazism, and giving Sunday sermons comparing the torments that Jesus suffered from the Philistines to those he himself suffered from the AMA. He became a populist candidate for governor of Kansas in 1930, three days after being stripped of his medical license. He entered the race late, and so could only be a write-in candidate. He would have won if the Kansas Supreme Court had not ruled beforehand that anyone voting for him had to write his name in a specific way; writing only his last name, for instance, disqualified the ballot. He was a hugely popular figure, sometimes even against the



better judgement of his patients. "I knowed he was bilking me," said one, "but I liked him anyway."

Transplanting testicles of a different species into humans seems insane now, but Brinkley could claim thousands of cures. He was less ready to claim responsibility for those who became ill or died from his treatments. He drove himself into a collision with the AMA when he started advertising, which was forbidden to any AMA member (and he originally was one).

His nemesis at the AMA was Dr Morris Fishbein, the editor of the *Journal of the AMA*, a platform from which he became a quack-buster, with special concentration on ending Brinkley's career. Brock describes Fishbein as "a modern Mr Pickwick, if that gentleman had trained in medicine and marinated in the borscht belt for some years." He was

a pal to H. L. Mencken, Sinclair Lewis, and Carl Sandburg, so it isn't really his fault that as the hero of this story, he isn't as interesting as Brinkley the villain. Fishbein was accused of merely upholding AMA's line of promoting the activities of only AMA-approved doctors and their AMA-approved techniques, but he genuinely cared about the people who had been hurt by Brinkley's surgeries or mail-order scams. It took a long time, more than two decades, during which Fishbein tracked Brinkley's activities from Kansas to Texas to Arkansas. It was only when Brinkley became irritated enough by Fishbein's articles about him in the *Journal of the AMA* to sue him for libel that Brinkley precipitated his own downfall.

As Brock describes him, Brinkley was a resourceful villain who, until the end, stayed one step ahead of his enemies and made millions, owning three yachts and countless cars. Brock gives evidence that Brinkley was not deluding himself, but knew he was making gain from defrauding his clients. His ability at self promotion and in fooling others is often funny, and often this is a hilarious book describ-

ing Brinkley's folly and that of his patients. Reading about the body count, however, or about the patients whose lives were ruined as the money rolled into Brinkley's accounts, is not funny.

It may be that medical con artists nowadays aren't doing surgery, but television and internet advertisement is still touting pills and gadgets for "male enhancement", as well as weight reduction, breast augmentation, magnetic healing, and many more. Each cure claims scads of satisfied customers; one of the great lessons of Brock's entertaining book is that such attestations are completely meaningless. Another great lesson is that a sucker is born every minute, and so is a charlatan ready to take his money. It's not a new lesson, or a profound one, but it is revealed here in a duel of personalities that is compelling reading. 🐐

Where there's Tragedy, there's Trade

**Playing on the vulnerable
for profit**

John Edward sure knows how to exploit famous tragedies and dead people for his own gain. A few weeks after the September 11 attacks in the USA, Edward announced he would be doing a show where he would contact the victims. The show was scheduled to air during the American ratings period. Fortunately there was a backlash and the public flooded Edward's network with complaints, prompting the show to be cancelled (sometimes, even in television, good taste wins over ratings.)

Now, just before his tour of Australia, he's gathered a ton of free publicity by exploiting the memory of a famous Australian and trading on the grief of Steve Irwin's wife. Newspapers and television reports were filled with the news that John Edward would be appearing at Australia Zoo, where he would make contact with Steve Irwin.

I went to the show on January 5 with Jayson Cooke, the founder of the Griffith University Society for Skeptics and Free Thinkers. In short, I went into the show very skeptical, and left, not only convinced he is a con, but less impressed with his cold reading skills than I was before. I had to see him live to appreciate just how bad he really is.

The show was part of a promotion called *Summer Down Under* which, over several weeks, will featured other acts such as Tripod and John

Williamson. It does seem more than bizarre to present a guy who apparently talks with dead people, as part of holiday entertainment at a theme park, but I digress.

The show was held at Australia Zoo's "Crocoseum". These must have been unusual performing circumstances for John Edward. His regular live show is done in theatres and lasts three hours, as opposed to the hour and half this show lasted. He is normally able to use theatrical tricks to create a mood. He takes the audience through guided meditation, uses mood lighting and primes the audience for the cold reading section of the show, so they are in just the right trance-like state.

He had none of these tricks at his disposal at Australia Zoo. It was outside, boiling hot, and the sun was in everyone's eyes. He was on a raised stage at the far side of the stadium; so far away from the audience, it would have been hard for him to have even seen the people he was talking to. Afterwards, one of the show organizers told us he was expecting a 'train wreck', and was very surprised it worked out at all. John Edward played the crowd under these difficult performing circumstances surprisingly well.

Cold (or lukewarm) reading

Edward came out and asked who would be interested in a reading. Not surprisingly, most people put a hand up. He then did his usual spiel



Peter Booth is a postgraduate student in journalism at Griffith University

of how the talking with the dead process works, ie, “I may be off on the name, I will not be off on the initial” etc. Then came some of the worst cold reading I have ever seen.

At one point, he looked out into a section of the audience and told us there was a Barnabus present, “Not a common name” as John helpfully pointed out, in case anyone hadn’t realised how amazing that was. I was a little taken aback by this, until Jayson pointed out our names were on the ticket stubs. So not quite a miracle.

He then played the numbers game, as he looked over a section of about 200 people and proclaimed there was someone there with a birthday that day — and there was! He then somewhat diminished this already unimpressive trick by proceeding to give that person a truly awful cold reading, getting a negative response for almost every single statement.

This prompted John to give a lengthy excuse for why it wasn’t working, an explanation that lasted almost as long as the reading. He then pulled out the “it’ll dawn on you who I’m talking about as soon as you leave” card, a technique he would use several times that day. He proceeded to give a few more equally shaky readings.

He also allowed the crowd to ask him some questions about why he is so amazing. Some of the most common things you will hear psychics say are “I’m a skeptic” and “I think people should be skeptical because there are a lot of frauds out there”, but they’re not one of them!

John Edward followed this path in spectacular fashion. When asked how he found out about his psychic powers he had a beautifully devised back-story ready to go, explaining how, as a kid, a psychic came to his house and gave readings, but he didn’t buy into any of it. He then audaciously gave a very basic description of some cold reading techniques, such as vague statements, for how he thought the psychic was doing it, the implication being, “Hey I was sceptical myself

once too”! (he did not, however, use the words “cold reading”, perhaps because then people could go home and Google it).

According to Edward this disbelief lasted for a long time before finally the psychic convinced him with information she couldn’t possibly have known, before then revealing to him he had a special gift and he would influence millions of people with it. He then decided to inflict this psychic gift on the world.

No contact

At the end of show, Terri Irwin came out and thanked John for coming, awarding him with a special plaque. She then answered the question everyone was thinking, which was, why no contact with Steve? She explained that Steve was everywhere in the park. Then Terri pointed out John had flown into Australia for one day just to do that show and solicited a round of applause for his benevolence (The Crocoseum seats 5000 people and he nearly sold the place out at \$90 a ticket, so his good deed did not get entirely unrewarded).

I went into the this show ready to be on the ball, to listen as closely as I could to pick up the subtle little linguistic tricks he would use to appear amazing. As it turned out, I didn’t have to pay too much attention, as just about everything he said got a negative response. He had a long run of misses reading after reading. I didn’t even have to turn to hot reading as an explanation. Not only could it all be explained with cold reading, but there was practically nothing to explain. It was almost all completely wrong. I thought the most famous psychic in the world would be cleverer than that. Apparently not. He was worse than the parodies!

So John Edward’s strong points — he is a great speaker, a captivating storyteller and can come up with funny lines. At least on that day, though he appeared to be a terrible cold reader.

So why can John Edward look so good on TV? Well, why do a lot of

people look good on TV? — editing. It was clear, having seen this live show, just how much he relies on editing in his TV show. Since we don’t know what has gone on behind the scenes, there are some things that can be hard to explain watching his TV show.

Wanting to believe

After his live show I was shocked when we talked to a few of the audience members and they told us they were impressed and amazed by what they had seen — and they were convinced he really was psychic! Granted we only talked to a small group of people, and if we looked further we may have found some negative reviews, but I just couldn’t believe those people were describing the same show. To me it was completely unconvincing and laughable.

It became apparent that the people at his live shows are there for a reason. They are already convinced and amazed and looking for contact with relatives themselves (and who are willing to lay down over 100 bucks!). As Barry Williams told me, people don’t go and see John Edward because they couldn’t get a ticket to the cricket!

Since they are already convinced, he can get away with anything. If you see David Copperfield live, you know he’s using tricks and you’re looking for them. So he has to be good. John Edward has an audience full of believers who aren’t looking for tricks. Who aren’t aware of cold reading and aren’t counting the number of questions he asks and how many times he is wrong. They desperately want what he’s doing to be real. So he is able to get away with murder.

Watching his show as a believer must be very different from watching it skeptically. In retrospect, watching this show as a believer must be the ultimate theatre of the mind. I was complaining about how boring the show was, but as Jayson pointed out to me, imagine watching

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Faith?

It Doesn't Add Up

Some new approaches to old questions

Irreligion: A Mathematician Explains Why the Arguments for God Just Don't Add Up, John Allen Paulos; Hill & Wang, 2008, New York.

For centuries, people who believe in the different gods that people have adopted have insisted that there are good logical reasons to believe in their particular gods. Logic and science can do nothing to disconfirm the existence of these gods, but at the same time, if an attempt at a logical proof of a god's existence is presented, then the proof can be logically examined to see if it holds water. John Allen Paulos has looked at the proofs and finds them leaky.

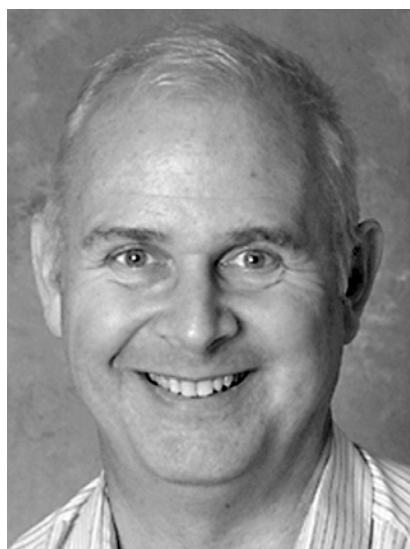
Paulos is a mathematician who has previously told us how a mathematician plays the stock market or how a mathematician reads the newspaper. Now, in *Irreligion*, he goes for the big game. His book shows the results of his examination of the question that is the first sentence in his book: "Are there any logical reasons to believe in God?" His book is a review of the ways that religious people have demonstrated to their own satisfaction (but not to his) that the existence of God can be logically derived. He has written before on this sort of theme, but his book is an attempt to deal directly with the "inherent illogic to all of the arguments." Jonathan Swift said, "It is useless to attempt

to reason a man out of a thing he was never reasoned into", and Paulos acknowledges this: "I have little problem with those who acknowledge the absence of good arguments for God, but simply maintain a nebulous but steadfast belief in 'something more'".

I don't know of any believers who came to their belief via logical demonstrations. The way most people get their religious beliefs is by being brought up with them; sometimes people do change from one belief to another, or from belief to non-belief and vice versa, but such changes are rare, especially when compared to the incidences of people who are raised in a belief and simply keep to it (however nominally) all their lives.

While plenty of believers I have talked to will say that faith, or grace, or divine inspiration has made their trust in God firm, none have told me that the trust comes from a logical proof. It would seem that if there were a watertight proof of God's existence, all philosophers and logicians would have come around to being theists by now, but it is obvious that this isn't the case.

Nonetheless, it seems that some believers, especially those who want others to believe, like to dabble in attempts at logical proofs instead of just leaving things at the ineffable level of subjective comfort and unshakeable faith. The other thing the purported proofs examined here



Rob Hardy, who practices psychiatry in Mississippi (the state, not the river), is a regular reviewer for the *Skeptic*.

fail to do, which must be unsatisfactory for those who try to use them, is that they cannot demonstrate the applicability of any particular religious system.

Even the proofs that purport to show that there is a God cannot show that the God is necessarily Yahweh, Allah, Vishnu, or the Flying Spaghetti Monster. If you were to accept the existence of some sort of god because of a logical demonstration, that logical demonstration can't point you to the right church, mosque, synagogue, or saloon.

Plenty of the arguments for God's existence here are well known; in fact, they are classics, and have been the subject of discussion and refutation for centuries. They may fortify the faith of those who already believe (although Paulos shows that they are untrustworthy fortifications), but again, already believing is the key. Right off the bat is the First Cause argument, presented in Paulos's summary:


1. Everything has a cause, or perhaps many causes.
2. Nothing is its own cause.
3. Causal chains can't go on forever.
4. So there has to be a first cause.
5. That first cause is God, who therefore exists.

It all seems convincing at first sight, and believers who wish to use this sort of thinking as evidence for their beliefs would be wise not to give it a second look. Paulos explains that a big problem is #1 above, which assumes too much. An alternative #1 is, "Either everything has a cause, or there's something that doesn't," and there isn't any way of getting around the truth of that. If everything has a cause, then God does, too, as does his cause and so on forever; and if there is something that doesn't have a cause, there is no reason that this something has to be elevated into the supernatural, for the physical world itself might be the thing that does not have a cause, and that's an end of the chain.

There is a closely related "proof" which is the Argument from Design: everything is so complex but beautifully designed in nature, it cannot be random or accident, so it must be the handiwork of a creator. The demonstration against this argument is similar: If the beautiful complexity had to be the work of a designer, then that designer has to be even more complex. What is explained, Paulos asks, "... by attributing the entity's unlikely complexity to an even more complex

and even more unlikely source? This creationist Ponzi scheme quickly leads to metaphysical bankruptcy."

And so Paulos goes on, through this brisk little book which takes on one supposed proof after another: the Anthropic Principle, the Ontological Argument, Pascal's Wager, and more. Each of the chapters, most less than ten pages long, dispatches each would-be proof. Paulos has used more logic and less mathematics here; there are no equations in the book, for instance, although there are dips into pure mathematics when discussing such things as probabilities for Pascal's Wager. There is a good deal of humor and wonderfully clear writing.

Nonbelievers are probably already familiar with the arguments for and against God's existence, but some of Paulos's counterarguments are novel and all are expressed in a pithy and easily memorable form. Believers ought to enjoy puzzling out the challenges here, and should have a renewed appreciation for the importance of faith, however lacking logical confirmation, as the foundation of their beliefs. 

... Tragedy from p 49

the show really believing he was talking with the dead, picturing in your mind spirits walking among the crowd and the stadium, just like in the movies.


This must be the kind of picture he was conjuring in people's heads, and that would be one of the most fascinating pieces of theatre there could be. However this theatre comes at a massive cost; namely that you're going down a dangerous road of allowing yourself to become completely taken in and at the

mercy of charlatans and having your genuine memories of your deceased relatives gone forever, replaced by the made-up imaginings of a cynical performance artist.

Finally, if you are unaware of it, here is the disclaimer that pops up for 3.3 seconds at the end of John Edward's television show:

The producer has relied heavily on the contributions of John Edward and other third parties in the creation of this program, which has been produced for entertainment purposes only. Materials

and opinions presented in this program by John Edward and other third parties, including statements, predictions, documents, photos, and video footage come solely from the respective third party sources and are not the views, opinions, and the responsibility of the producer and, are not meant or intended to be a form of advice, instruction, suggestion, counsel or factual statement in any way whatsoever.

Make of that what you will. 

Circumcision: a Reply to Professor Brian Morris

Controversy continues in
this debate



David Vernon is an award-winning freelance writer. Based in Canberra he writes about science, parenting, health and history. In late 2007 he released his fourth book, *With Women*. He is currently working on a book of Australian historical mysteries.

Website: web.mac.com/david.vernon

Email: dvbooks@mac.com

Who would have thought that an article about the presence or absence of a small piece of skin would cause such a fuss? Who would have thought it would have driven a Professor of Molecular Medical Science, Brian Morris, to attack me so vigorously (“Circumcision Facts Trump Anti-circ Fiction” (*the Skeptic*, 27:4) or, to use a sporting analogy, attack the man and not the ball? Who would have thought I would ever use a sporting analogy in any article I write? This just goes to show how a discussion of circumcision can drive a man to terribly intemperate language, or worse, to sporting analogies.

Analysing the attack

I will consider some of the points Professor Morris makes later in this article, but firstly I would like to analyse the way he decides to attack my article entitled “Circumcision Myths” (27:3). It is a good lesson in how to avoid arguing clearly. Professor Morris sets the tone for his rejoinder in his first sentence by calling my article “unscholarly poppycock”.

While I appreciate his witty pun, the retreat to abuse in the first sentence seems to indicate his desire to attack on an emotive, rather than on a rational, basis. This is confirmed in his next sentence where he states “Vernon, a freelance writer and former public servant with

degrees in political science, economics and law, is hardly well placed to write on circumcision.”

Whoa! Professor Morris appears to have decided to denigrate several classes of people in one sentence. Let’s look at this argument in a little bit of detail. He obtained information about my qualifications from the Internet, as it was not published in *the Skeptic*. Whilst I am not sure where on the ‘net he found it, I am certain that my biography would have also noted that I have a Master of Science from Griffith University. However, Professor Morris seems to have thought that my science qualifications weren’t worth mentioning. Was this a deliberate oversight? Perhaps he doesn’t like Griffith University?

But let’s pretend for a moment that I don’t have any science qualifications. Does that absence of a science qualification mean that graduates with qualifications in politics, economics and law are incapable of reading and understanding research? Modern liberal arts degrees teach students how to think. Lawyers spend their time listening to opposing points of view and reaching a conclusion, so I think his attack is a little specious.

What about Professor Morris’ attack on public servants? Are they incapable of rational thought? Leaving aside stereotypes, I think the answer is fairly obvious. My role

as a public servant was to analyse data and make recommendations to the Commonwealth Minister for the Environment about what actions the Government should take on environmental problems. This is not unskilled work. The irony in Professor Morris' attack on public servants is that he himself is a public servant. His salary is paid from the public purse.

In the next sentence he states that I am either "gullible or a representative of the anti-circumcision movement". This is a fallacious dichotomy. Why must I be one or the other? Or either of them for that matter? Professor Morris must be aware of my long term involvement in the Australian Skeptics (I was a foundation member of the Canberra Skeptics) and the material I have written for *the Skeptic* over the years. So I'm not gullible. But the second point, that if I am not gullible then I must be an anti-circumcision activist, does not immediately follow the negation of the first point. I think any logic teacher could point this out. He then follows this faulty reasoning with what he must consider his clinching point, ('clinching' because Professor Morris chose to use an exclamation mark), that "Not surprisingly he confesses to being uncircumcised!"

For the record, I am neither gullible nor a "representative of the anti-circumcision movement." Until I commenced researching my article, I had never visited a pro- or anti-circumcision website in my life. My knowledge of circumcision up to the time of writing the article had been the mild position that cutting the tip off a baby's penis was wrong. Somebody asked me what my views were and I thought that I should have a better basis for understanding the practice of circumcision than just a mild notion — so I did some research and wrote an article. Am I circumcised? No, I am not. I admitted this in my article as I believe that one should state clearly where one's biases might lie when writing. I

suspect, but cannot be certain, that I might have different views if I was circumcised. This alerts me to the fact that I may have some bias as a writer. I note that Professor Morris does not make his personal physical status public. However, I do congratulate him in at least admitting that he runs a pro-circumcision website entitled "www.circinfo.net." At least he is making clear his bias.

Professor Morris takes great care to link me with "anti-circ activists" through the rest of his article. For example, "The anti-circs also say, as Vernon parrots, that circumcision is a violation of human rights. This is rubbish." I could ask how Professor Morris, a man without any legal qualifications, could say this? But I won't because this would be churlish. As Professor Morris well knows, the legal notion of human rights is a human construct, and just because the law in a country says something, doesn't mean that it is correct. Laws are capable of being changed. Many people believe that children have a right to bodily integrity, not just we apparent "anti-circ activists!"

Yes, Sir Humphrey

Reading Professor Morris' article reminds me so much of the wonderful bureaucratic satire *Yes Minister* by Jonathan Lynn and Antony Jay. In the episode entitled *The Greasy Pole* (how's that title for a coincidence?) the Permanent Head, Sir Humphrey Appleby, explains to the Minister how to discredit research that the Government doesn't like. Sir Humphrey explains that it is a four stage process, with stage four being "Discredit the Man who Produced the Report." Professor Morris dabbles in stage four in a paragraph close to the end of his article. As this is such a magnificent illustration of the Sir Humphrey technique, I will quote it in full:

One well-known anti-circ activist, Paul Fleiss, MD, from Los Angeles, is a felon convicted of money laundering for a prostitution racket. Although foreskin fetishism and paedophilia are the mo-

tivating factors for some of the anti-circs, certain others are naïve 'dogooders' of the 'politically-correct' latte set, whilst certain subgroups in the gay community desire the foreskin for a sexual practise known as 'docking'. Their vigorous opposition to circumcision helps ensure a continuous supply of foreskinned males in the community for this source of sexual pleasure for them. Thus we find there is a use for the foreskin! Parents take note!

As Professor Morris has made clear that I must be an "anti-circ activist" then I am also clearly a felon who dabbles in prostitution. This will come as a surprise to my Mum. Perhaps I'm into foreskin fetishism and paedophilia. This will come as a surprise to my wife and also be somewhat surprising to me too. Or am I a latte drinking PC dogooder? That actually is probably the closest description of me so far. "Nothing wrong with a good latte", is my view. Or am I a closet 'docker'? This is a new one to me. According to the Urban Dictionary it is placing the foreskin over another man's penis. Interesting, but not my cup of latte. Professor Morris' argument, particularly his warning to parents, smacks of homophobia.

Sir Humphrey Appleby would be proud of Professor Morris. But to this apparently irrational ex-public servant, his decision to attack me, rather than the issues, is all rather pathetic.

The issues

So what about the issues? Has Professor Morris destroyed my arguments with his apparently extensively referenced research? After scraping away the emotive language it appears to me that Professor Morris' argument can be summed up thus:

If a man chooses to be promiscuous, practise unsafe sex, and fail to be hygienic in his behaviour, then circumcision conveys some protection to him and his partner.

The scientific evidence may point to this but is not a message that I will be telling my boys.

For those readers who are interested in following this debate further there is an anti-circumcision website that has examined Professor Morris' claims in depth. This can be accessed at:

www.circumstitutions.com/Morris.html

Professor Morris finishes his article with this statement:

Therefore to conclude, David Vernon's article is utter twaddle. Circumcision is now mandated by the massive body of epidemiological and biological evidence. In fact, the poorly researched, highly biased and nonsensical article by Vernon, metaphorically speaking takes us backwards in time to the 11th Century (the Dark Ages) and should be disregarded for the tripe that it is.


In conclusion, I'd expect a Professor from the University of Sydney to argue the points and not attack the messenger. But then again, little bits of skin seem to excite some people.

I will complete this article with a couple of recent quotes from men who are, according to Professor Morris, apparently as backward as I am.

Circumcision is an abuse of human rights and should be outlawed until the person is old enough to decide for themselves."

Mr Paul Mason, Tasmanian Commissioner for Children, *ABC News*, 13 August 2007.

There were quite a lot of folk myths around the advantages of circumcision. They've almost all been debunked. There are some minimal advantages in some circumstances, particularly in some infectious diseases, but they're overwhelmingly balanced by disadvantages in other areas.

Professor E. Haydn Walters, President Tasmanian AMA & Head of Medicine, UTAS, *ABC News*, 9 Dec 2007. 

More Doubts

David Brookman **Salamander bay NSW**

I read with growing alarm the correspondence generated by the opinions of David Vernon on circumcision, and particularly the misleading comments by Brian Morris. Being a molecular scientist in a school of medicine does not make one an expert on all things medical, and to suggest that circumcision protects men against sexually transmitted diseases, *while there is an active campaign to reduce STD transmission through the use of condoms*, must be regarded as grossly irresponsible.

The evidence upon which Prof Morris makes his claims is somewhat dubious.

In a Cochrane review by Siegfried et al, the authors reached the following conclusion: We identified no completed randomised controlled trials. Three randomised controlled trials are currently underway or commencing shortly. We found 35 observational studies: 16 conducted in the general population and 19 in high-risk populations. It seems unlikely that potential confounding factors were completely accounted for in any of the included studies. In particular, important risk factors, such as religion and sexual practices, were not adequately accounted for in many of the included studies.¹

In other words there was sample selection bias in all the studies, which prevent any life and death decisions being based on the publications.

The authors' conclusions:

We found insufficient evidence to support an interventional effect of male circumcision on HIV acquisition in heterosexual men. The results from existing observational studies show a strong epidemiological association between male circumcision and prevention of HIV, especially among high-risk groups. However, observational studies are inherently limited by confounding which is unlikely to be fully adjusted for. In the light of forthcoming results from RCTs, the value of IPD analysis of the included studies is doubtful. The results of these trials will need to be carefully considered before circumcision is implemented as a public health intervention for prevention of sexually transmitted HIV.

The claims for circumcision 'protecting' men from other STDs is also based on erroneous studies — meta-analyses by Van Howe provide some more recent evidence of the absence of preventive association:

An unbiased comparison of herpes serology between randomly selected NZ males has shown no difference in risk between circumcised and uncircumcised males.^{2,3,4}

Readers of *the Skeptic* must be aware that writers are expressing an opinion, there may be a profound belief in ritual male genital mutilation, or a profound rejection of the process. This will clearly bias the 'evidence' sought and presented. The current evidence suggests that the only health benefit obtained is prevention of chronic balanitis.

Using lists of references is a common obfuscatory technique in the medical publication world — it is

Continued p 56 ...

Sharia and Human Rights in Nigeria

A distressing case of the law being used to promote religious beliefs

On October 9, 2007, a court in Kaduna, Northern Nigeria, heard a case brought against Shehu Sani, a well-known human rights activist, social critic and author. Mr Sani, a practising Muslim, was sued by a group called Concerned Sharia Forum over a play, *Phantom Crescent*, he wrote exposing the abuses and double standards by those implementing Sharia law in 12 states in Northern Nigeria.

Northern Nigeria is predominantly Muslim, but has a sizeable Christian population, including people originally from the South, who now reside there. The court has ordered Mr Sani to cancel a planned performance of the play and to stop printing and distributing copies of it.

This court case has a lot of implications for human rights, democracy and civilization in Nigeria. It is the first time such a case has been brought against a Muslim who is critical of this anachronistic legal system, since Sharia was imposed on Islamic majority states some years ago. The case comes at a time when Islamic fundamentalism is on the rise in Nigeria, and around the world, with Sharia as one of its most deadly and oppressive weapons.

Allegory of the Cave replayed

Shehu Sani said he wanted to use the play to enlighten the local population on how Sharia is being used to oppress them. Practically speaking, this is a tall order, which is likely get him into trouble with

the Islamic theocrats and jihadists who do not tolerate any form of 'enlightenment' that is critical of Islam.

Educationally, the Islamic majority states are the most backward in Nigeria. This is because the only form of education most people are exposed to is Qur'anic recitation and indoctrination, making them impervious to critical thinking, especially in matters concerning Islamic creeds and traditions. Qur'anic indoctrination has imprisoned and corrupted the minds and conscience of the local Islamic population, making them easy targets for manipulation and exploitation by jihadists and theocrats.

Unfortunately, most Muslims in Northern Nigeria are in the dark as to how Islam has been used to oppress, exploit and tyrannize their lives. A few of them, who have realized the unjust nature of the system, are too afraid to speak out against it. Hence, the task of enlightenment in Northern Nigeria is a dangerous undertaking, because most Muslims cannot reason outside the Qur'an and Islam. They take Islamic darkness as light, and violently oppose any form of enlightenment outside Islam, opposed to, or critical of, Islam.

Muslims in Northern Nigeria are living in an Islamic cave, manned, managed and guarded by the armies of Allah. And, as in Plato's *Allegory of the Cave*, Shehu Sani is like one who was once in the cave, who went



Leo Igwe, the courageous head of the Nigerian Skeptics, is a regular Skeptic correspondent.

outside, saw the light, and came back to enlighten his people. This case, brought against him by Sharia proponents, is like a resistance staged against him and his enlightenment agenda, by lieutenants guarding the cave of ignorance and fanaticism in Northern Nigeria.

Human rights abuses

One of the ways Islamic fundamentalists have demonstrated their moral backwardness, is through gross human rights violations. Islam is inherently opposed to human dignity and equality, gender equity and justice. According to Mr Sani, the play dramatizes the human rights violations perpetrated against women and poor people by the Hisbah—a bunch of jihadists masquerading as Sharia police or enforcers, and funded by state money.

Human rights abuses did not start with Hisbah. It has been there since the introduction of Islam to Nigeria, particularly since the jihad of Sheikh Uthman Dan Fodio. His 1804 jihad sanctified militant Islam that is spread and propagated by human rights violations — killing, maiming, torture, oppression of women, children and poor people.

Since independence, tens of thousands of Nigerians have lost their lives to religious blood-letting. In March this year, a Christian School teacher from Southern Nigeria was lynched by Muslim pupils, for allegedly desecrating the Qur'an. Last month, jihadists attacked and killed at least nine Christians and burnt several churches in Kano, a Sharia implementing state and an Islamic stronghold.

In 2000, Sharia riots across Nigeria claimed thousands of lives. Indeed, the blood of “unbelievers”, the oppression of the poor, the exploitation of the weak and ignorant, the discrimination against women, the persecution of sexual minorities and the abuse of children, have watered the tree of Islam in Northern Nigeria.

Today, Sharia has become a potent tool in the hands of Islamic

jihadists for human rights violation, oppression and exploitation in the name of Allah. Sharia has become a weapon for Islamic inquisition in Nigeria.

There are no women among the Sharia court judges. Sharia does not recognize the rights of all individuals to freedom of thought, conscience and religion. It has no place for equal rights of all human beings, regardless of religion or belief. Sharia accords second-class status to non-Muslims.

Some Sharia states in Nigeria have carried out amputations, and have flogged convicted offenders, including Christians. Some years ago, international outcry saved the lives of Safiatu Hussein and Amina Lawal, who were sentenced to death by stoning for adultery. But many people convicted under Sharia law, to be stoned or undergo amputation, are still languishing in jails across Northern Nigeria.

Landmark case

This case brought against Shehu Sani is going to be a landmark case. It will determine the direction Sharia states want to go — whether they want to come into the 21st Century, or remain in the Dark Age with their moral and legal anachronisms.

This trial is going to serve as a litmus test of Nigeria's commitment to human rights and civilized values. It is going to provide an opportunity for the Sharia states to tell the world if they want to embrace Enlightenment, a secular and open society, or remain in the cave of darkness, ignorance, hypocrisy, hatred, violence, oppression, exploitation, and human rights abuses.

In this case, it is not just Shehu Sani that is on trial, the Sharia states are on trial. The Nigerian constitution is on trial. The Nigerian democracy is on trial. Nigeria's obligations as a state party to the African Charter on Human and People's Rights are on trial. Nigeria's commitment to the international human rights conventions is on trial. Human rights are on trial.

... Circumcision Doubts from p 54

not difficult to check the references, but it does take time. For those who do not wish to be subjected to an unfenestrated balaclava I recommend *The User's Guides to the Medical Literature*⁵ and *Evidence Based Medicine*⁶. Of course a quick guide is the amount of personal invective, irrelevant points (such as personal circumcision status) and similar items lacking in relevant factual content used by the author.

I do not know of any physiological mechanism that would reduce the penetration of any infective organism in the circumcised penile skin — other than callus formation, but there are no studies on difference in masturbatory activity between the circumcised and uncircumcised — the advocates of the process once also claimed a reduction of this activity in the circumcised.

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Weird's the Word

Some brief notes taken at a fascinating symposium

Weird History Colloquium, Wollongong University, Friday February 1, 2008.

After seeing an article in the *Sydney Morning Herald* about a free symposium on 'Weird History' I booked a place, took a day off work and the train ride down to Wollongong. It seems that Wollongong University has chosen to differentiate itself from the other, closer to Sydney, universities by being 'Innovative'. A courageous move at any time!

Weird Times and Weird History

The first presentation was by Professor **Greg Melleuish**, from the School of History and Politics in the Faculty of Arts, who explained the nature of what was meant by Weird History. "Weird history flourishes where evidence is limited and the scope for elaboration considerable."

He explained that one reason for this Free Symposium was that he and his colleagues were interested in teaching an academically rigorous course in Weird History, as there is so much of it about at the moment — *Da Vinci Code*, *1421* etc, being promoted without much sign of any critical evaluation. Definitely a theme of interest to all Skeptics.

1421: Voyages in a parallel Universe

Captain Philip Rivers presented this topic. A Malaysian academic, with maritime and navigational

expertise, he discussed in great detail the many yawning improbabilities required for the *1421* premise. This is that massive fleet(s) of enormous Ming Dynasty Chinese junks, crewed by tens of thousands of individuals, managed to perform voyages of long duration and great speed to just about everywhere on the face of the planet. As Capt. Rivers noted, these voyages all supposedly happened against prevailing winds and currents, and without being noticed until the present.

Captain Rivers has met the *1421* author, Gavin Menzies. It seems that, when faced with the discovery of another improbability that would serve to prohibit the passage of his adventurous Ming Dynasty fleets, he seeks inspirational advice from no less a person than the Blessed Virgin Mary. This after being fortified with bacon sandwiches (and presumably washed down with 'lashings of ginger ale?').

Did the Mongols Invade Russia?

Konstantine Sheiko and **Stephen Brown** gave a presentation on this intriguing question. This was partly about the very significant gaps in records about Russian history, and partly about the rise of Anatoly Fomenko.

Fomenko, a Russian mathematician, has proposed a 'New Chronology' of world history, which radically shortens the period in which re-



Garry Dalrymple is a long time Skeptic and science fiction fan who organises regular SF conventions.

corded history happened, everything of note happening since 800CE.

Among his more controversial contentions is that Genghis Khan was probably a Russian prince who hired Mongol warriors to fight his battles. Oh, and also that the first outsiders to visit the American continents were probably Cossacks.

A veritable one man powerhouse of revisionist history, Fomenko finds himself in tune with, and in service to, the current Russian nationalist political sentiments.

Two Hundred Years of Secret Visitors

Denis Gojak, a consulting archaeologist, spoke on *Two Hundred Years of Secret Visitors: the history of a pseudo-archaeological concept*. The talk was in two parts:

There is real evidence — artefacts — that can be interpreted as being ‘proof’ of either European visits to Australia predating Cook or the Dutch, or of pre-Cook era artefacts being carried to Australia.

There are also a great many natural formations (eg, ‘pyramids’ in Queensland), plus incorrectly dated and/or fraudulent ‘discoveries’ that imply that Australia’s pre-1770s history was crowded with a full cast of civilized visitors (Egyptians, Phoenicians, *et al*).

In the 1800s and 1900s, many sought to see evidence of a ‘greater’ Australian past, or sought some sort of morality play effect, with the fate of ‘degenerate’ and ‘soon to be passing from History’ Australian

Aboriginal to be a warning to ‘we British’, that what we too had achieved, could in time be lost without the strict observation of ‘values’.

The end of the line for this line of reasoning has not been permanent, as ‘Independent researchers’ have discovered, resurrected or reinterpreted evidence, as a part of conspiracy theory, ie, only those outside the academic system (A Conspiracy) can be trusted to tell you the truth about stuff, their conclusions more valid than ‘mere’ experts.

Conspiracies in Australian History

This was the title of **Glenn Mitchell**’s talk. His extensive (Internet) research (the night before) uncovered heaps of conspiracies attached to authentic themes. These included theories about Ned Kelly, the various disasters of *HMAS Melbourne*, the disappearance of PM Harold Holt and the dismissal of the Whitlam Government — and the connections between them.

From these he was able to show many of the elements common to conspiracies in general and, in particular, to demonstrate that with remarkably little real world research, most of these conspiracies can be seen to be made of very flimsy construction based on false foundations.

Walking to China

In this talk *Walking to China: Convict Escape Mythology in*


Colonial Australia, **David Levell** gave a level-headed treatment of what was the original ‘Irish Problem’ in the early days of the penal settlement of Sydney.

Among most convicts it was commonly believed that China (and possibly Timor and New Guinea) and a warm welcome was but a few days walk away from the Sydney settlement. The first Governors made much effort, through expeditions, to demonstrate that this was not the case. Some expeditions returned with reports of having met Aborigines who claimed that there were indeed white men living further away.

These may have been garbled accounts of Timor or Batavia, passed down Aboriginal trade routes, or just natives cautiously agreeing to the leading questions put by the strangers.

In spite of the persistent defection and dejected return of convicts, this myth might have inadvertently served to keep the peace in Sydney, as Irish (political) convicts might have delayed attempts at serious uprisings, while the phantom of ‘escape to China’ still had currency.

Note

Denis Gojak will be the guest speaker at the May 17 NSW Skeptics Dinner Meeting — see www.skeptics.com.au for further details. We hope to prevail on him (and other presenters) to allow us to publish papers on their particular topics in the near future. 

Moving?

Please don't forget to advise us of your new address.

Letters

Depression in animals

David Brookman

Salamander Bay NSW

Gary Goldberg has suggested that I am erroneous in claiming that it is not possible to observe depression in animals (27:4 *Letters*). It is possible to observe psychomotor retardation in animals that the venal and innocent anthropomorphically ascribe to depression — but this has multiple causes.

The criteria for diagnosis of depression are very dependent upon verbal communication and as yet I am unaware of any capacity for verbal communication from non-primates.

If we examine the clinical features of depression as codified in the *DSM IV* it becomes fairly obvious that animals do not suffer from depression;

(Five or more of the following)
Depressed mood for most of the day;
Subjective report (sad and empty); *
Observation made by others (crying etc);*
(Child/ adolescent) irrational irritability;*
Reduced pleasure and interest;
Observed (absence of laughing, smiling);*
Hypophagia with weight loss (or in 5% polyphagia);
Insomnia or parasomnia daily;
Early morning waking with rumination;*
Inability to go to sleep with rumination and agitation;*
Psychomotor retardation or agitation nearly every day;

Frequent waking (with anxiety);

Fatigue, or loss of energy every day (not fatiguability but the absence of motivation for undertaking any activity);*

Feelings of worthlessness, or excessive or inappropriate guilt nearly every day;*

Diminished ability to think or concentrate nearly every day; *

Recurrent thoughts of death, recurrent suicidal ideation without a plan, suicide Attempt or a specific plan for suicide;*

AND

Anhedonia or depression of mood.*

AND

The symptoms cause significant impairment in normal social functioning.*

AND

The symptoms are not due to bereavement, drug use and do not meet the criteria for a mixed disorder.

(* Those items marked with an asterisk are not observable in animals because animals do not have the ability to communicate symptoms.)

Depression is a serious and fatal illness. It is not simply feeling sad even though common use of the word often mislabels sadness as depression.

I undertook a quick search for suicide by animals — there are no cases which are not hearsay reports, and this would seem to eliminate this disease from the veterinarian bailiwick. However, I expect that much of the \$US20bn wasted on animals in the USA is income for the manufacturers of antidepressants, venal animal pseudotherapists and the like, and my railing against the trivialisation of this serious disease will have little effect.

Then and now

Paul Barclay

Cammeray NSW

Whether as Kevin Rogers (27:4 *Letters*) asserts, Galileo and the founding members of the Royal Society were Christians, some important points need to be made to qualify his opinion.

Galileo was only too keenly aware of the fate of Giordano Bruno and his own friend Paolo Sarpi. Also, he needed Rome's approval to publish his discoveries. So, whatever his inmost thoughts may have been, he would have wanted to maintain a façade of conventional religious belief.

The men who founded the Royal Society lived through one of the most turbulent eras for religious belief. At various times, within one life time it was necessary to subscribe to Anglican, Puritan and Catholic belief systems. One mistimed conversion could put life at risk. At the very least you would be denied a career in government, the bureaucracy, the universities, the courts and other professions. No wonder they kept their heads down and concentrated on their natural philosophy. In those days a single false step could have proved to be a *faux pas*. Isaac Newton himself had to conceal over a long life-span his disbelief in the Holy Trinity, for which he could find no biblical justification, despite decades of scriptural study.

Now, having said all that, let me come to the most important point. I submit that none of these men would have been believers had they been born 300 years later. The level of scientific knowledge in the 17th Century was so primitive by modern standards, that it was still possible for intelligent men to be devout. Let me list just a few of the most obvious differences between their epoch and ours.

Astronomy: At that time there was no knowledge of the extent of the universe. The belief that a wise creator had produced billions of galaxies, each containing billions of stars all moving at unimaginable velocities over inconceivable distances just in order to provide a home for mankind strikes us today as a trifle wasteful. Not to complicate the issue I won't mention black holes and dark matter.

Time: The respective ages of the universe, the solar system and planet Earth have been pretty accurately established, and are measured in billions of years. Humanity is a very recent arrival.

Again, one is left wondering if there could have been a cogent plan by some supernatural intelligence resulting in extravagance of this magnitude.

Evolution: The explanation of natural selection by Darwin and Wallace was triumphantly vindicated a hundred years later by the discovery of DNA and a treasure trove of fossils. The concept of a separate special creation for homo sapiens surely has become indefensible.

Medicine: Microbes, bacteria and viruses were unknown 300 years ago. Pain and disease were diagnosed (if that is the right word) as being God's punishment for sin, being possessed by demons, witches' evil spells, or whatever. Today, we know a great deal about the prosaic causes of illness. An increasing number of treatments and cures are reducing the amount of suffering. We no longer postulate divine or diabolical influences for our ailments.

Continental Drift: We now know a great deal about the continuous movement of landmasses and how they occur. Hardly consistent one would suggest with the idea of a one-off creative act. Nor do Ice Ages or mass extinctions seem to accord with a divinely planned creation.

The scientists mentioned in Kevin Rogers' letter, had they been born more recently, would have been unlikely to maintain their belief in any kind of Creator-God in the face of such evidence.

Furthermore, at the risk of offending many, I would like to point out that the total amount of scientific knowledge possessed by Moses, Jesus, Paul, Buddha, Mohammed etc, is woefully short of what any moderately educated high school student has at his fingertips. This is not to decry their important contributions to morality and ethics, which were and are of continuing importance.

So, to conclude, I say to Kevin Rogers that while Roger Bacon, Copernicus, Kepler and countless others were devout believers in their own times, it seems unlikely that they would have maintained their faith in today's very different world. They were born too early. For 21st Century scientists there is no such excuse.

Aquinas was right

**John Warren
Annandale NSW**

Thomas Aquinas was one of the foremost philosophers of the Catholic religion. He was very wordy, as attested by a local bookshop which lists his *Summa Theologiae* in a paperback edition of 61 volumes.

At one stage in his deliberations he said:

With respect to what belongs to God in himself, let us first lay the necessary

foundation for the whole enterprise by considering how God can be shown to exist, for unless this is established, there is nothing else to consider. (My emphasis, JFW).

That quote is on page 245 of the Penguin edition of the *Selected Writings of Thomas Aquinas*.

That statement seems to be logically and commonsensically true. If one can't prove that a thing, anything, exists, then it is not of much use to pontificate on its characteristics. So, true to his word, Aquinas set out to prove that God existed with five proofs.

Richard Dawkins, in his book *The God Delusion*, has called these proofs vacuous, as indeed they are, because they amount to no more than repeating that something must have started it all, and calling that something God. Then, having given it a name, it was a very small step in the history of human thought to convert something into someone and give it human characteristics writ large: potency becomes omnipotence, consciousness becomes omniscience and so on.

Aquinas' basic problem was that it is not possible to prove anything with words alone. If one finds a bench with a stopped clock on it and a little gear wheel lying alongside it, one might speculate or hypothesise that the wheel is the missing cause of the clock's failure but, until one opens the clock and re-inserts the wheel to get the clock going, nothing is proved. Words are just symbols of images in the mind. One can shuffle those images; and must do it as a guide to recognising links and formulating theories as a guide to experiment, but proofs can only come when those mental ideas are tested through interaction with the real, physical, world. It has always been the fundamental problem of philosophy to distinguish between what goes on in the non-material world of the mind and what goes on outside it.

Aquinas wrote in the thirteenth century. If people, then and now, had taken his admonition that it was a

waste of effort to discuss something which could not be proved to exist; and have recognised that his and his followers “proofs” proved nothing, what endless time and paper would have been saved? The great minds (and there were many) would have been more rewarded in solving the problems we face here on Earth.

Epiphany

Brian Hewson
Wauchope NSW

Okay, I'm convinced. After more than 50 years of atheism and considerable interest in such matters, and despite all evidence to the contrary, Kevin Rogers and Bill Moriarty (27:4 *Letters*) have convinced me. As the delightful Dr Krissy Wilson explains so well — I have the same limitless capacity for self-deception as they have.

So, there is a god — and maybe it's the Christian one. Now, I just need to be convinced that the god is not cruel, (witness any part of the animal hierarchy, tsunamis and earthquakes, etc) lazy (think of the things that you or I, with omnipotence, could have fixed in the last few thousand years), stupid (even I could design a better weather system or at least fix it as and when it goes chaotic!) and vain (2000 years of 'Songs of Praise' — really!).

Mr Moriarty assures us (though he doesn't say what the evidence is) that the big G takes day-to-day interest. Pity that it is so callous and indifferent. Mr Rogers assures us that at least it's not arbitrary (so that takes care of miracles!).

Anyway such matters are far too complex for a mere mortal — I'll just believe it. However, it would be appreciated if Mr Rogers can set us straight on a few simple logical problems. If our glorious Editor is kind to me we might have room for

one of them. On the matter of prayer, which Mr Rogers raised himself, please read the following conversation:

Christian: *Yes, God is omniscient — and that does include knowledge of the future, else He could not predict the outcome of His actions.*

Me: *Therefore God knows today when, for example, the drought will end?*

Christian: *Of course!*

Me: *So, when John Howard and other wise folk tell us to pray for rain — for the drought to end — it is a waste of time because the end is already set. If it weren't, and we prayed and God bothered to respond by ending the drought earlier, wouldn't it mean He was wrong today and hence not omniscient?*

Please, Messrs Rogers and Moriarty (I think we can forget Mr Brash, if his logic allows him to lose a chess game in 11 moves. But, maybe his vicar?), correct my reasoning preferably without reference to the Bible — your own withering logic will be enough.

Keep to the issues

Glenn M Brady
Leopold VIC

Having just read the *Forum* and *Letters* pages in the Summer 2007 (27:4) issue of *the Skeptic*, I fear I may have to apply for a spot in an Australian version of the BBC TV show *Grumpy Old Men*.

It may be the weather (40C today), my approaching half century (I won't raise my bat to the crowd and TV cameras) or the position of the stars in Uranus (or however that stuff works). More likely is that I've just about had it up to my eyeballs with the level of debate displayed in those pages this issue.

Brian Morris, in criticism of David Vernon's article opposing

circumcision, accuses groups he describes as “The anti-circs” of being “...more like a religious cult...”, and one individual as being, “...a felon convicted of money laundering for a prostitution racket...” Does that have anything to do with circumcision?

He describes opponents of circumcision as being motivated by “... foreskin fetishism and paedophilia...” and somehow belonging to “... subgroups in the gay community...” (Really? A community? Where? And do they have a community hall and road signs? “You are now leaving Gayville, population 1,000”).

His actual arguments, given earlier in the article, appear to be well considered, backed by accessible data and are well argued. But in my own opinion, his descent into irrelevant, untestable vitriol and pointless name calling only leads me to mistrust all that has preceded it.

Seriously. As an interested and gifted amateur, I can boast ownership of one penis. Just the one, so I can't make any valid comparative contribution to the discussion for and against circumcision, but the ownership does not prevent me from recognising an article where spurious argument is thrown around in place of considered opinion and/or factual data. Maybe, if I had a second penis (one in the alternate state to my own), I could test some of the hypotheses. Though, according to the old slur, “He must have two penises, you can't be that crazy playing with just one”.

All of the other letter writers in the *Forum* managed to avoid the faults I find in Dr Morris's article, and argue their own views with decorum.

John Gibbs, in a letter under the headline “Climate Debate”, also resorts to the old and very tired argument that a theory to which he does not subscribe “...is not science but religion, a dogma unsupported by evidence...”.

He finishes his letter with “And finally the last refuge — a tug at the heartstrings...”* but then goes on to

Letters

use the very same language to trump the miscreant heartstrings tugger.

And finally (are you still there? Almost finished. And the temperature has decreased by a few degrees, so I promise this is my last and smallest gripe).

If a letter writer is going to use a cliché, a homily, simile or such, can we please at least get it right. The saying is not, “The proof is in the pudding”, it is, “The proof of the pudding is in the eating”, ie, one tests how good the pudding is by eating it.

In summary, could we please leave out the *ad-hominem* arguments, the untestable assertions and schoolboy debating techniques, the garbled homilies and poor puns and jokes... (Oh dear, I’ve just shot myself in the foot) and please raise the level of debate above that which might be found in AiG? (I think I may be hoist by my own petard).

* *Last refuge of who or what? If I may ask.*

Induction

Brendon James Brewer

Guildford NSW

I have enjoyed the back and forth on inductive reasoning that has been taking place in *the Skeptic*. Although I don’t think Christianity has anything useful to add to any discussion of induction, I also think Dan Carmody’s article, “Can a Scientist Rely on Induction?” (27:4 p. 40) is somewhat misguided.

Presumably, when Dan was writing his article, he wasn’t too worried about the possibility of the speed of light changing (and therefore the strength of any inductors in his computer circuits). I assume he also didn’t take seriously the possibility that once submitted, his article would magically turn into one about zucchinis. Of course, he validly used inductive reasoning to

conclude this, just as we all do all the time in our daily lives, and in science as well. We couldn’t survive without it.

I agree with Dan that the axiom of consistency (the assumption that the future will resemble the past) is unnecessary for science. Science is quite capable of dealing with scenarios where the future is markedly different with the past. However, there is a different “axiom of consistency” that is required: consistency of the principles of reasoning in the presence of uncertainty. When this is assumed, a theory of logic can be made which essentially tells us what we already know — that inductive reasoning is valid to some extent, but not guaranteed to be correct. On this point, I highly recommend the groundbreaking book by physicist Ed Jaynes (*Probability Theory: The Logic of Science*).

Karl Popper’s well-known ideas about falsification are important but not complete. If the only status a theory can have is “falsified” or “not falsified”, what is the point of knowing that a theory is not falsified? Can we rely on its predictions or not? What about the infinity of theories that make different predictions but are also not falsified? Obviously, there is a continuum of plausibility between “certainly false” and “certainly true”, and that is where the vast majority of reasoning takes place. Deduction is rarely possible except in mathematics.

I will leave the last word to the physicist, statistician and philosopher Harold Jeffreys, whom Jaynes quotes:

A common argument for induction is that induction has always worked in the past and therefore may be expected to hold in the future. It has been objected that this is itself an inductive argument and cannot be used in support of induction. What is hardly ever mentioned is that induction has often failed in the past and that progress in science is very largely the consequence of direct attention to instances where the inductive method has led to incorrect predictions.

More induction

Matthew Birmingham

North Nowra NSW

Just a few comments on Dan Carmody’s article “Can a Scientist Rely on Induction?” in the last issue (27:4). First let me state that I’m not entirely certain that Carmody wasn’t writing tongue-in-cheek, but as he gave no clear indication that this was the case, I will assume he was serious. (If I’m mistaken, then — ‘Ha Ha, you got me’.)

Carmody, in arguing his case that knowledge of the past does not provide a rational basis for predicting the future, states “we simply do not know what the speed of light will be tomorrow until we measure it tomorrow ... we cannot have knowledge of the future”.

His claim that we cannot have knowledge of the future can only be based on observation that, in the past, we have not been able to have knowledge of the future, and since he is arguing that past observation can not be rationally used to predict the future, the claim cannot be used consistently in support of his case. (Of course, in Carmody’s defence, it could be that consistency was only valid last week.)

Towards the end of his article, he acts as though he is going to give us a demonstration of how science can proceed without induction, but I must have blinked because I missed it.

Any schoolchild knows the impossibility of ‘proving’ the validity of induction, but it is one hell of a dubious leap from that to the claim that induction is ‘based wholly on faith’.

To top off the silliness, Carmody then states, “No true scientist — Christian or otherwise — can honestly generalise from any number of particular instances to a prediction or rule. The very nature of inductive reasoning turns their

bets about the future into sheer guesswork”.

If that were so, then the number of ‘true’ scientists in the world would fall to about zero,

Religious problem

Charlie Carter

Alice Springs NT

I fail to see the point of the article by Dr Buch (“Religion Remains a Problem”, 27:4 p. 20). Perhaps because I found it difficult to understand. Lots of big words used in long complicated sentences. Not to mention the confusing typos, eg, ‘conversations’ where I presume ‘conversions’ was meant.

The main thrust of Dawkins and others is ‘there is absolutely no evidence from which to postulate the existence of a god’, a position arrived at from the perspective of reason and science.

Why then use the language and structures of ‘theology’ to discuss the issue? The only reason I can see is to try and convince us that the writers own field is superior to reason and science. I can see no evidence for god, and very little point in ‘theology’, it being the study of something that does not exist.

A small world

Richard Buchhorn

West End QLD

It’s a small world. I recently received an email from Enyeribe Onuoha, who features in the last section of Leo Igwe’s article in the last issue of *the Skeptic* (27:4 p.38), recalling our first meeting at resi-

dential college in Rome 46 years ago. We became close friends, and have kept in touch, spasmodically for some decades, but consistently over the last couple. This has been made easier by emails, which he only gets to access now and then when he gets to a neighbouring town.

For a context for the question of witchcraft described by Leo, and the way the accusations have been fuelled by Christian ministers who profit from the administrations of exorcisms, readers might go to an article by Tracy McVeigh in the *Guardian Weekly* of 21/12/07: observer.guardian.co.uk/world/story/0,,2224553,00.html

Lest anyone be misled by Leo’s mention of Enyeribe’s Palace, I have a photo of it — simple, one floor, c. 7 x 4 m. Umchiweze isn’t a city, but an area of 5 km², (northern part of Mbaize, Imo State), population c. 5000, four villages, dirt roads, erratic power supply, no phones, subsistence farming, with excess numbers having to move to the towns and cities. It faces all the issues confronting rural communities, especially in the Third World.

His family came from there, but with siblings living in cities and overseas, they nominated him as Eze — sort of Mayor — when he was pensioned off after a 25 year Lectureship at Technical College at Enugu, and separated from his wife. After he was appointed, as a characteristic example of his commitment, he compiled a 100 page booklet on the history of the area, and the problems the community faced. Among these, he included the Catholic Church which, along with an illustrated recommendation of vasectomies as a population control method, led one of his senior brothers to try and stop him taking office. However, after a lengthy battle he prevailed, and was crowned a year ago, with pomp, ceremony and attire befitting royalty or a Bishop.

In appreciation for the support I have offered him over the years, I was invited to be there, with my wife, to receive a Chieftaincy from his hands. This would have entitled

me to the title of “Oboziobodo”, and my wife to the title of “Lolo”. While grateful, we declined: but continue to get his letters, vivid reminders of the existence of a Third World, which would be off the radar for many people living in a country like Australia.

Zelda Bailey, of the Qld Humanist Society, met him at a Humanist Conference in Paris a few years ago.

Climate change

Robert O’Connor

Gorokan NSW

I made the error of confining myself to the ‘Web Wrangler’ word count limit of 250. This made a detailed discussion of John Gibbs’ claims (27:4 p.64) difficult.

I should have reviewed the available evidence (observed length of letter and forum submissions) and crafted my reply accordingly. *Mea maxima culpa*.

Are humans responsible for global warming?

The 4th IPCC Summary noted that:

1. *There has been a recent - the last two-three centuries - dramatic increase in greenhouse gas levels as confirmed by ice core measurements and other observations over a 650,000 year period.*

2. *Temperature measurements since 1850 suggest a recent increased warming trend. Other satellite and ocean temperature measurements confirm this; palaeoclimatic evidence is also discussed which suggest that the last half of the 20th century was the warmest in at least 500 years. The last decade has been the warmest in the last 1300.*

eg, www.ncdc.noaa.gov/paleo/recons.html

John is not prepared to make the inference that human activity has

caused (1) which has caused (2). A truly skeptical position, but alternative explanations are lacking, or don't work quickly enough to explain the observational data (eg, Milankovitch cycles).

There appear to be no other reasonable explanations if we assume that greenhouse gases have an effect on climate, regardless of where they come from.

... *the Summary does not claim any evidence of a direct causal connection between carbon emissions and global warming.*

It does, in the references to the chapters in the full report at the end of almost every paragraph. Should the summary list the hundreds of papers that were reviewed to produce the report? Does every finding in the field need to be described in detail in the summary?

The Editor warned me that I would be accused of being in the pay of Big Oil...

No *ad hominem* from here.

John, the funding of the Fraser Institute is a matter of public record. It is a right-wing think tank. A quick Google search [eg, 'fraser institute funding'] confirms this. If you downloaded their report, you could have checked.

Tobacco funding example:
bat.library.ucsf.edu/tid/lbc53a99

Exxon funding example:
www.exxonmobil.com/Corporate/files/corporate/giving_report.pdf

Libertarian ideology in North America seems to be based around ideals of minimal regulation and government and that the market can solve everything.

Drug legalisation doesn't bear on the climate issue. On the latter topic they have a right-wing position.

I was guilty of shooting the messenger. Even if the Fraser Institute didn't stand to gain by discrediting climate science, that doesn't mean that they can't do objective analyses, right?

The Fraser Institute's 'Independent Summary' appeared soon after the IPCC document. An annotated version with comments from working climatologists is available here:

www.realclimate.org/index.php/archives/2007/02/fraser-institute-fires-off-a-damp-squib/#more-398

Ignoring any potential 'partisan bias' from the RealClimate reviewers, the Fraser document makes many basic scientific errors and refers to alternate explanations (increased solar output, cosmic rays, etc) which are not substantiated by observational data (solar output/UV flux) or were controversial (cosmic rays) at the time the report was prepared.

Cosmic ray activity hasn't been large enough to explain recent climate in the absence of other factors.

www.realclimate.org/?p=42
www.realclimate.org/?p=359

That's it? If you're not representing the prevailing orthodoxy you must be wrong?

No, but the probability of error increases with the maturity of the field and the eccentricity of your position.

We disagree about the maturity of climate science, and the eccentricity of the 'dissenters'.

I entitled my article on greenhouse theory — which also makes no new predictions and does not admit to any critical tests — 'Not Even Science'.

The IPCC emission scenarios and the predicted changes to average temperatures, rising sea levels, etc, are not 'new predictions'? What would you regard as a 'new prediction'? How accurate would you like them to be? What would you regard as a 'critical test'? Geoengineering? Voluntary global emissions reductions or increases? A computer model which replicates the last 12,000 years of climate?

On the IPCC and probabilities, John has an apparently valid gripe with, "Where on earth do they get these figures from?"

www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-uncertaintyguidancenote.pdf


It strikes me as an unfortunate choice of language to couch the report findings in. However, scientists generally present their data

with all the error bars and talk about probabilities. Controversies within a field are generally openly discussed and resolved.

People used to more rigidly defined areas of doubt and uncertainty have exploited this apparent rhetorical weakness and freedom of discourse to express some interesting positions; hence the anti-evolution, anti-vaccination, and anti-fluoridation movements.

I agree that the media increasingly 'manufactures' and sells the resultant 'controversy' to sell papers and ad time on the radio and telly.

This is a good reason to go back to the primary literature with complex topics, which is an easy thing to do in the era of the search engine and the Internet. Read academic papers. Talk to/email salient experts. Try to cultivate an informed opinion.

However, the observational evidence shows that something is happening to climate that hasn't happened for millennia. Perhaps I take the precautionary principle too closely to heart. 

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(or as close thereto as is humanly possible)

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