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## EUREKA

PRIZE WINNER



# the Skeptic

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All correspondence to:  
Australian Skeptics Inc  
PO Box 268  
Roseville NSW 2069 Australia  
Tel: (02) 9417 2071  
Fax: (02) 9417 7930  
e-mail:  
skeptics@kasm.com.au

web pages:  
*Australian Skeptics*  
www.skeptics.com.au  
*No Answers in Genesis*  
www.onthenet.com.au/~stear/  
index.htm

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Editor: Barry Williams  
Contributing Eds: Tim Mendham  
Steve Roberts

Editorial consultants:  
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Dr Richard Gordon (medicine)  
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Prof Ian Plimer (geology)  
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Dr Alex Ritchie (palaeontology)  
Dr Steve Roberts (chemistry)  
Mr Roland Seidel (mathematics)

Branch correspondents:  
ACT: Neil Woodger  
Darwin: Simon Potter  
Gold Coast: John Stear  
Hunter: Michael Creech  
Qld: Michael Vnuk  
SA: Allan Lang  
Tas: Fred Thornett  
Vic: Steve Colebrook  
WA: John Happs



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## Skeptics around Australia

**New South Wales:**  
Australian Skeptics Inc  
PO Box 268  
Roseville NSW 2069  
Tel: (02) 9417 2071  
Fax: (02) 9417 7930  
skeptics@kasm.com.au

**Hunter Skeptics:**  
PO Box 166  
Waratah NSW 2298  
Tel: (02) 4968 9666  
Fax: (02) 4952 6442

**ACT**  
Canberra Skeptics:  
PO Box 555  
Civic Square ACT 2608

**Victoria**  
Australian Skeptics (Vic) Inc:  
GPO Box 5166AA  
Melbourne VIC 3001  
Tel: (03) 9391 9101  
Fax: (03) 9391 9101  
contact@skeptics.com.au  
http://www.skeptics.com.au

**Queensland**  
Australian Skeptics (Qld):  
PO Box 6454  
Fairfield Gardens QLD 4103  
Tel: (07) 3255 0499  
qskeptic@uq.net.au

**Gold Coast Skeptics:**  
PO Box 8348  
GCMC Bundall QLD 4217  
Tel: (07) 5527 9884  
Fax: (07) 5577 4784  
winckle@onthenet.com.au

**South Australia**  
Skeptics SA:  
PO Box 377  
Rundle Mall SA 5000  
Tel: (08) 8272 5881  
Fax: (08) 8272 5881  
lakes@senet.com.au

**Western Australia**  
WA Skeptics:  
PO Box 899  
Morley WA 6062  
Tel: (08) 9448 8458  
kitkat@technologist.com

**Tasmania**  
Australian Skeptics in Tasmania Inc:  
PO Box 582  
North Hobart TAS 7000.  
Tel: (03) 6234 1458  
thornett@netspace.net.au

**Northern Territory**  
Darwin Skeptics:  
PO Box 809  
Sanderson NT 0812  
Tel: (08) 8932 7552  
Fax: (08) 8932 7553  
dwnskeptic@taunet.net.au

## Editorial

# Scientific illiteracy a threat

Barry Williams

Recently it was intriguing to hear Douglas Adams, author of *The Hitchhikers' Guide to the Galaxy* among other entertaining books, make a very cogent point during his address to the National Press Club luncheon.

Answering a question about the continuation of disharmony between the "two cultures", he suggested that in the 19th century, when the novel was born as a literary form, it had been the place to confront new ideas about all the sorts of things that were changing the world. However, he went on, in the 20th century, as science has given us much deeper insights into the natural world than had been available hitherto and which, through technology, has changed the world immeasurably, things are very different. Those who are educated in the humanities, including most modern novelists, generally lack any understanding of even the simplest and most fundamental of scientific principles. He instanced the common position of literary figures in his native Britain of not only admitting to knowing nothing about science, but of actually boasting about that lack. How, he asked, can we think of these as fully educated people?

It's a good question. Since novelist and physicist, C P Snow, first proposed the notion of the Two Cultures (the sciences and the humanities) in a lecture in 1959 and spoke of the growth of mutual incomprehension between them, there have been attempts to encourage those working in engineering and the sciences to become more aware of the literary and cultural milieu in which they operate. This is undeniably a good idea, but there appears to have been no such enthusiasm to encourage those in the humanities to come to grips with what science means, how it tells us about our natural environment and why it helps to explain much of what makes our present culture the way it is.

That is a serious and potentially dangerous state of affairs. It contributes to a great deal of what concerns Skeptics about the readiness of the public to accept, uncritically, claims and propaganda that are promoted as having some scientific validity.

It caused me to wonder what it is that makes a good Skeptic. One of the things that has surprised (and delighted) me since I began editing *the Skeptic*, has been the breadth of the interests of our subscribers and contributors. I was not surprised to read that they were interested in science, that was to be expected; what did excite me was that the range of interests mentioned by many of our subscribers included literature, history, music, philosophy, sport, art - in fact the whole range of human experience. It is not so much the often impressive depth of what you know that excites me, it is the breadth of your range of interests.

As Mr Adams said, no one should be considered to be educated unless they have some understanding of science, and I would add to that, a healthily sceptical attitude.

It is not essential, nor should we expect, that everyone becomes skilled in geology, chemistry, anatomy and theoretical physics. However, a basic understanding of all sciences would serve as intellectual insulation against the seductive, but ultimately empty, claims of New Agery, creation 'science', 'complementary' medicine or the postmodernist notions that "all ideas have equal value".

These movements pose a threat to the intellectual health of our society, and the best antidote is a broad understanding of science, a wide range of interests and a healthy dose of scepticism.

That is what we strive to provide in *the Skeptic*, and, with your help, that is what we will always continue to do.



# Around the traps

## Bunyip

G'day!

With all the talk about preambles around the place, we decided we couldn't afford to be seen without one in this column. That's it above. If the government would like to borrow it for their purposes, we won't mind.

\* \* \*

We were delighted to see longtime subscriber, Prof Brynn Hibbert from the Chemistry Dept, UNSW, appearing on *Quantum* recently. He was demonstrating his newly developed "electronic nose", which is designed to duplicate (and eventually surpass) the ability of the human, and other animal, olfactory senses in detecting and identifying a huge range of odours.

As would be expected from a *Skeptic* subscriber, Brynn demonstrated the capabilities of the device to Geoffrey Burchfield from *Quantum* by sampling a glass of wine.

However, we respectfully suggest that the good prof has only done half the job. Identifying wine by odour is the easy part - the hard part will be to get the instrument to produce its reports in terms acceptable to the dedicated oenophile "... a pleasant nose redolent of toasted Vegemite and saddle soap, with a trace of trinitrotoluene on the afterburner...", etc. We advise Brynn to invite a post modernist colleague from a humanities department to assist him in the programming.

\* \* \*

Apropos the above, we issue a challenge to Prof Hibbert, and to renowned oenologist, and Skeptics SA stalwart, Brian Miller, to test the respective capabilities of biology and technology in a nose-to-nose (sorry) confrontation at the World Skeptics Convention in Sydney in November 2000. Are you game?

\* \* \*

A couple of persistent health myths have received recent critical scrutiny overseas. We thought the following stories from the 'net would interest our Skeptical readers.

\* \* \*

A recently released Canadian epidemiological study, published in the May 1 issue of the *American Journal of Epidemiology*, agrees with a monu-

mental US study released two years ago, that there is no linkage between the incidence of childhood leukaemia and exposure to environmental electromagnetic fields.

The massive study, covering five Canadian provinces, matched 400 children under 14, diagnosed with leukaemia, with 400 controls. Exposure assessments included 48 hour personal EMF monitoring, as well as measurements in the children's residences and 24 hour bedroom measurement. A research team, headed by Mary L. McBride of the British Columbia Cancer Agency in Canada, found that children with leukaemia and those without it had similar EMF exposures. Wiring configuration was not associated with the disease, nor was the estimate of a mother's EMF exposure in the year before her child was born. The conclusion was that exposure to magnetic fields was not related to the risk of leukaemia.

This appears to be a story that refuses to die, regardless of the evidence amassed against it.

\* \* \*

A study presented to the International Conference on Integrative Medicine in Seattle, last April, claimed that echinacea, the world's top selling herbal supplement, taken by millions to ward off colds and flu, has a side effect - it increases the incidence of colds and flu. Previous studies had merely indicated that echinacea was not effective.

\* \* \*

Column 8 (SMH) on April 14 reported an intriguing entry in the Newcastle *White Pages*. Seems that someone in that fair city advertises themselves as Hunter *Sceptic* Tank Services. Could it be that Colin Keay and his mates in the Hunter Skeptics have become tired of dealing with metaphorical ordure and have started dealing with the real stuff?

\* \* \*

Speaking of waste products, we have noticed the comical *Creation Ex Nihilo* being offered for sale by some newsagents. To show that newsagents are alert to the quality of what they sell, everywhere we saw it it had been accurately positioned among *Nexus*, *Exposure*, *New Dawn* and all the other conspiracy and new age dross assaulting the reading public.

Reader, Glenn Brady of Belmont VIC wonders: apropos the saying "It's the best thing since sliced bread", what was the benchmark before the invention of sliced bread?

\* \* \*

Only in the USA Dept.

Bernardo Arroyo, a minor drug dealer in California, was offered a deal by police that would have resulted in a two-year prison sentence for his involvement with a conspiracy to distribute methamphetamine.

Arroyo rejected the deal after a psychic assured him that he would never spend a day behind bars, and also, for \$8,000, offered to put a curse on the drug agents who investigated the case. Arroyo didn't want to spend the money, so he refused, waived his right to a jury trial and placed his fate in the hands of the judge. He now faces at least 10 years in prison.

\* \* \*

The "If you can't beat 'em, join 'em" department is now open.

It seems you can't turn on the TV these days without coming across some cook hurtling around English lanes on a motor bike, galloping up a Scottish glen, or stomping through the more picturesque parts of Italy (and that's only on the ABC).

Lest it be said that Bunyip is not a dedicated follower of fashion, we will run occasional celebrity recipes in the column. The first comes from our very own esteemed baronet, Sir Jim R Wal-laby:

### *Haricotes flambe en chien*

- Empty contents of can of baked beans into saucepan on high heat.
- Place two slices of bread in toaster.
- Run to answer telephone.
- Explain to caller that noises heard in the night are probably not aliens bent on abduction and sexual experimentation.
- Deny one is part of worldwide conspiracy to conceal the Truth.
- Reiterate denial in monosyllabic terms.
- Dispute at length.
- Return to smoke-filled kitchen.
- Extinguish blaze
- Give charred remains to dog.
- Go out to lunch.



## 1999 Eureka Prize winners announced

The winners of the 1999 Australian Museum Eureka Prizes were announced on May 4 at a ceremony at the Australian Museum in Sydney. The Master of Ceremonies was ABCTV *Quantum* host, Adam Spencer.

Finalists flew in from around the globe to be present at what has now become Australia's pre-eminent national science and environment awards. A record 11 Prizes, worth \$100,000, were awarded on the night to individuals and organisations for outstanding achievements in Australian scientific and environmental research, and for the communication of science and technology to the wider community.

Among those on hand to present the Prizes were Senator the Hon Robert Hill, Federal Minister for the Environment and Heritage, the Hon Bob Debus MP, NSW Minister for the Environment, Dr Brian Gaensler, 1999 Young Australian of the Year, and Australian Skeptics patron, Phillip Adams.

Speaking before the awards were announced, Australian Museum Director, Professor Mike Archer (himself a recipient of the 1990 Inaugural Eureka Prize for the Promotion of Science, and Australian Skeptic of the Year for 1998-99) commented: "The Australian Museum is extremely proud to be the administrator of these prestigious national science and environment awards. The growing reputation and success of the Australian Museum Eureka Prizes was clearly demonstrated by the overall level of excellence in the entries. It was extremely difficult to select the winners in each category."



A rose between...

Melissa Finucane holding her trophy, flanked by NSW Skeptics president Richard Gordon and *Skeptic* editor, Barry Williams

### The Australian Skeptics Eureka Prize for Critical Thinking:

**Dr Melissa Finucane**, University of Western Australia & Decision Research, Oregon, USA, for her research into public perceptions of the risks of environmental and health hazards, and why these perceptions - in particular of a negative relationship between a hazard's risks and benefits - differ from conclusions made by scientists.

Melissa's report on the research that led to her winning the Eureka award follows this story.

**Other Australian Museum Eureka Prize Winners were:**

**The University Of Sydney Eureka Schools Prize for Biological Sciences:**

**Year 11 and 12 students**, Newton Moore Senior High School, Bunbury, WA, for research and development of the 'Rehabilitation of School Wetlands' website which reports on the students' research and actions to rehabilitate wetlands on their school boundary.

**The University Of New South Wales Eureka Prize for Scientific Research:**

**Dr Ove Hoegh-Guldberg**, Associate Professor, School of Biological Sciences, University of Sydney for research into the physiological basis of coral bleaching, which has contributed significantly to the understanding of coral bleaching by showing that this is caused by the effects of small increases in ocean temperature on the algal symbionts of reef building corals.

### The Graphic World Eureka Science Book Prize:

**Jennifer Cooke**, *Cannibals, Cows and the CJD Catastrophe*, Random House Australia, for a comprehensive and superbly researched book about a creeping epidemic that has claimed the lives of thousands around the world. It is a disease that comes in many guises - known as Kuru among the Highlanders of Papua New Guinea, Creutzfeldt-Jakob disease in western hospitals, and Mad Cow disease in newspaper headlines.

### **POL Eureka Prize For Environmental Research:**

**Dr David Lindenmayer**, Associate Professor at the ANU Centre for Resource and Environmental Studies and Department of Geography; and **Professor Hugh Possingham**, Chair of Environmental Science, Department of Applied Science and Molecular Ecology, University of Adelaide, for their outstanding and ground-breaking collaborative work on population modelling for the conservation of Australia's forest fauna, as characterised in the development of a conservation plan for Leadbeater's possum - one of Australia's most controversial forest species.

### **The Allen Strom Eureka Prize For Environmental Education Programs:**

**Airwatch**, developed by **Jennie Anderton**, Western Australian Dept of Environmental Protection, for the development of Airwatch, a schools-based, air quality monitoring program designed to allow high school students to develop, through participative learning theory, an understanding of local and global air quality issues, to enable them to make positive behavioural choices contributing to the environmental outcome of cleaner air.

### **The Environment Australia Peter Hunt Eureka Prize for Environmental Journalism:**

**Michael Troy**, ABC TV News, for the development, as Environment Reporter for ABC TV News, of a collection of television news and current affairs reports dealing specifically with environmental issues, including rising salinity, the forestry debate, coral bleaching, the Jabiluka uranium mine, Landcare projects, global warming and biodiversity.

### **The Michael Daley Eureka Prize for Promotion of Science:**

**Vince Ford**, Research School of Astronomy and Astrophysics, Mount Stromlo Observatory, for his outstanding contribution to the promotion of the science of astronomy in Australia for over 34 years, and his tireless dedication and commitment, outstanding science communication skills and the generosity with which he has made his contribution.



### **The Michael Daley Eureka Prize for Science, Technology and Engineering Radio Journalism:**

**Ian Townsend**, *DNA Detectives*, ABC Regional Radio, 17 July 1998, for a program which seeks to explain the impact of new "DNA fingerprinting" technology, and its role in reopening and solving long standing criminal cases.

### **The Michael Daley Eureka Prize for Science, Technology and Engineering Television Journalism:**

**Richard Smith**, *Rumble in the Jungle*, broadcast on ABC TV, 5 May 1998, for a documentary following a field trip by a group of Brazilian scientists into the Amazon jungle in search of a long lost meteor impact crater.

### **The Michael Daley Eureka Prize for Science, Technology and Engineering Print Journalism:**

**Emma Connors**, "They're Young. They've got IT", published in *The Australian Financial Review Magazine*, May 1998, for an article which looks at the generation of young IT workers who have grown up with computers, and consequently have different working perspectives from previous generations.

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## **Skeptics to continue Eureka sponsorship**

1999 marks the Australian Museum Eureka Prizes most successful year, with a prize pool totalling \$100,000. The Eureka Prizes were launched in 1990 to reward outstanding achievements in Australian science and science communication, and are administered by the Australian Museum. Since their inception, the Australian Museum Eureka Prizes have been highly successful in raising public awareness of the vitality, originality and high international standard of Australian science and environmental research.

Australian Skeptics has been the sponsor of the Eureka Prize for Critical Thinking since 1996. Our three winners to date have all been carrying out research in the field of human psychology. Although this was not an intentional part of our thinking when

we instituted the prize, it should come as no surprise to anyone that "critical investigations of popular acceptance of beliefs that owe little or nothing to the rigours of the scientific method" (as our Prize is designated), would attract people engaged in psychological research.

A very important component of all the different paranormal and pseudoscientific areas investigated by Australian Skeptics arises as a result of human perceptions and misperceptions. While it is rarely too difficult for Skeptics to point out factual, logical or interpretational errors in many of the paranormal or pseudoscientific claims that are widely accepted, we have not been on such firm ground in explaining *why* people are so ready to believe in things for which there is little supporting evidence.

It is this field in which our winners to date have been conducting their research. As a result of their work, Skeptics in Australia, and throughout the world, will have access to information that will assist us in gaining a clearer understanding of the "why" side of this perplexing question.

We are pleased to announce that Australian Skeptics has agreed to continue sponsoring the Australian Museum Eureka Prizes for a further three years.

We would also like to express our gratitude and admiration to Mike Archer and his staff at the Australian Museum, and particularly to Roger Muller who oversees the Eureka process, for the professionalism they continue to display in managing Australia's premier science awards. It cannot be an easy job.



# Public perceptions of risk

Melissa L. Finucane

Public perceptions of risk sometimes seem to owe little or nothing to the rigours of scientific method, resulting in much conflict with the scientists responsible for assessing and managing risk. Some hazards for which scientists estimate negligible risk, such as nuclear power plants, evoke outrage in lay people. For other hazards, such as radon gas, lay people seem to underestimate the risk and behave too complacently.

Of particular interest to me is that the public reliably perceives a negative relationship between a hazard's risks and benefits, despite there being no relationship or, if anything, a positive relationship between many hazards' risks and benefits in the external environment. Given the abundant information available to the public these days, I am investigating how they arrive at judgments of risk and benefit that differ from the conclusions made by scientists.

## Background

Technically, risk and benefit are distinct concepts. The nature of the gains attained from pursuit of a hazardous activity or technology is qualitatively different from the nature of the risks. For instance, the benefit gained from using roller blades (eg, entertaining pastime) is different from the risk (eg, injury from a car collision). Driving to work, eating beef, and using a cellular phone are other examples of activities with distinct benefits and risks.

Though distinct, risks and benefits generally tend to be positively correlated in the external environment. Whereas activities that bring great benefits may be high or low in risk, activities that are low in benefit are unlikely to be high in risk (if they were, they would be proscribed), suggesting a positive correlation between risk and benefit (see Figure 1a). In addition, economic data addressing the question "How safe is safe enough?" suggests that the level and acceptability of risk is positively related to the benefits.<sup>1</sup>

Although risk and benefit may be positively correlated in the environment and in economic analyses, numerous studies have shown them to be negatively related in people's minds (see Figure 1b). The greater the perceived benefit of many hazards, the

lower the perceived risk, and vice versa.<sup>2</sup> Smoking, alcoholic beverages, and food additives tend to be seen as very high in risk and relatively low in benefit, while vaccines, antibiotics, and x-rays tend to be seen as very high in benefit and relatively low in risk.

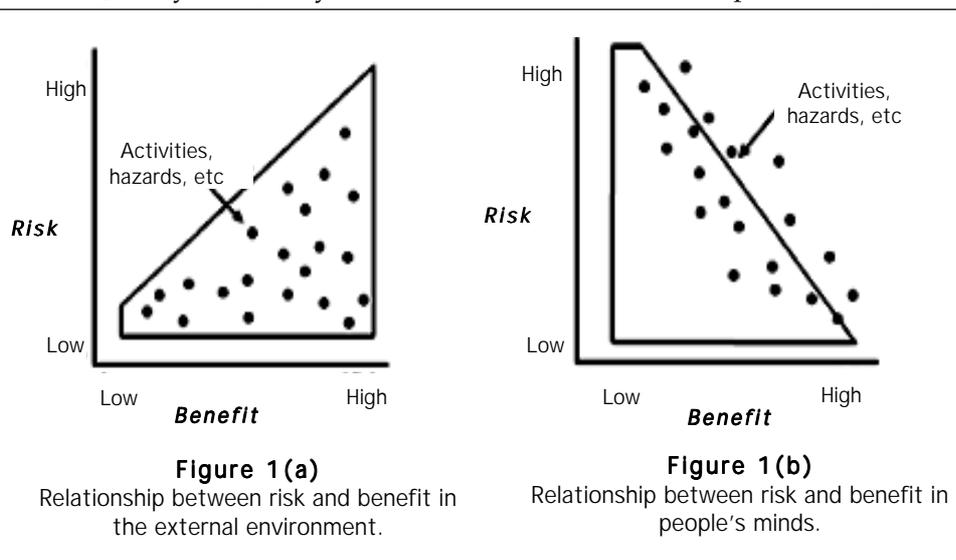
According to many scientists, lay people's beliefs about risks and benefits are irrational. That is, risk perceptions that deviate from estimates of fatality rates or other "objective" indices are thought to arise from a lack of understanding of complex scientific and technical information.<sup>3</sup> Some risk regulators believe that arming people with more information should reduce their scientific illiteracy and improve their judgments. That is, risk perceptions would be more "accurate" if people were provided with more complete information about product or technology attributes. Others believe that if people just listened to the facts, they would reach the same conclusions as experts.<sup>4</sup> Despite extensive efforts to educate the public about risks and risk assessment, however, their estimations of risk tend to remain systematically biased. Compared with experts' estimates, the public reliably overestimates some risks and underestimates others. As a result, the public is often dismissed as irrational, ineducable, and capricious.

Empirical research, however, suggests that differing beliefs about risk may not in fact reflect differences in rationality or education.<sup>5</sup> For instance, reliable risk perception differences can be found among scientists, whom, we can assume, all understand appropriate technical information. That is, individuals may have the same technical understanding of risk and knowledge of risk assessment procedures, but still differ in their risk perceptions.

So if it's not rationality or expertise that's lacking, what leads people to believe risk and benefit are negatively correlated?

The objective of recent research that my colleagues and I conducted was to investigate the possibility that risk and benefit are in-

versely related in people's minds, because an affective feeling is referred to when the risk or benefit of specific hazards is judged. Hints that *affect* (emotion) may be playing a role were revealed when Alhakami and Slovic



**Figure 1(a)**  
Relationship between risk and benefit in the external environment.

**Figure 1(b)**  
Relationship between risk and benefit in people's minds.

observed that the relationship between perceived risk and perceived benefit was linked to an individual's general affective evaluation of a hazard.<sup>6</sup> If an activity was "liked", people tended to judge its risks as low and its benefits as high. If the activity was "disliked", the judgments were opposite – high risk and low benefit. Perhaps affect comes prior to, and directs, judgments of risk and benefit.

Despite the evidence in support of the role of affect in judgment, an analytic (cognitive) interpretation of Alhakami and Slovic's results cannot be excluded completely. Their experimental design could not rule out the possibility that risk and benefit judgments are correlated negatively because individuals approach the judgment tasks analytically, producing a "net riskiness" or "net benefit" judgment, rather than independent judgments of risk and benefit. That is, individuals may be making judgments (regardless of whether the rating scale focuses only on risk or on benefit) by deliberating on what the net difference between risk and benefit is for any particular item. Our latest research has attempted to rule out the possibility of an analytic explanation for the inverse risk/benefit relationship using two different methodologies.

### Recent studies

Evidence supporting the affect hypothesis was obtained in two experimental studies conducted recently.<sup>7</sup>

In the first study, participants were asked to judge the risk and benefit of 23 hazards under conditions of *time pressure* ( $n = 28$ ), or *no time pressure* ( $n = 26$ ). As expected, risk and benefit judgments of the hazards were found to be more strongly negatively correlated under time pressure (mean  $r = -0.37$ ) than no time pressure (mean  $r = -0.12$ ) for most items. Under time-pressure, 13 correlations were significantly negative, while only two items showed a significant negative correlation under no time pressure. That is, the confounding between perceived risk and perceived benefit seemed to be stronger when the opportunity for logical deliberation was restricted, and reliance on affective reactions to hazards presumably was increased.

In the second study ( $n=219$ ), we found that experimentally manipulating the salience of one affective dimension of information about hazards affected ratings on the non-manipulated dimension. That is, giving people high benefit (risk) information led to decreased risk (benefit) ratings, and giving people low benefit (risk) information led to increased risk (benefit) ratings. The latter results (ie, from the low benefit/risk information manipulation) were contrary to the pattern of ratings expected if people used a strategy such as the availability heuristic (which would predict little systematic effect on the non-manipulated dimension). Importantly, the second study showed that the inverse relationship between perceived risk and perceived benefit found in the first study is *causally* determined.

Despite using different methodologies, the first and second studies suggest that risk and benefit are linked somehow in people's perceptions, consequently influencing their judgments. Based on recent work emphasizing the crucial role of images marked by positive and negative feelings in judgment,<sup>8</sup> and the fundamental influence of affect as motivator of behaviour,<sup>9</sup> it is plausible that perceived risk and perceived benefit are linked via some sort of affective commonality. A parsimonious explanation is that the positive and negative feelings attached to the images people associate with

hazards are available and influential when risk and benefit are judged. That is, representations of objects and events in people's minds are tagged to varying degrees with affect, and the pool of affective tags is referred to for quick evaluations. In this way judgments of risk and benefit are guided and linked by affect. We call this mental short-cut the "affect heuristic" because it is like a rule of thumb that improves judgmental efficiency by deriving both risk and benefit evaluations from a common source – affective reactions to the stimulus item.

### Implications

By demonstrating that affect plays a crucial role in judgment, we can understand why public beliefs about risk seem to have little relationship to the traditional science of risk assessment. This outcome has great theoretical and practical importance.

Our results suggest a fruitful direction for the development of more accurate theories of human judgment. It is important not only to be able to describe how people differ in the way they make judgments (and hence end up with different beliefs), but also to be able to predict judgments more accurately. Our focus on affect as a central component of human judgments about risks and benefits is something not considered by researchers to date. Traditionally, the main focus of descriptive decision research has been cognitive, rather than affective. When principles of utility maximization appeared to be descriptively inadequate, cognitive information-processing models were developed based on concepts such as bounded rationality and satisficing. The field of judgment and decision making research has given little attention until very recently to the importance of affect, and the field of risk analysis has given affect no attention at all.

The practical benefits flow from the theoretical advances. Better predictive capacity of theories will help us to anticipate when conflicts about risk might arise. Currently there are tremendous economic and social costs associated with risk management processes dominated heavily by technical perspectives. Indeed, addressing risk controversies with technical solutions may be responsible for escalating conflict.

### Future directions

Several directions look enticing for future research. One is to investigate the extent to which scientists demonstrate an affective judgment process, particularly when making judgments outside their area of primary expertise. I expect that using the affect heuristic to simplify complex judgment information is in fact an adaptive and useful strategy in many situations, and is relied on by everyone to a greater or lesser extent, depending on the context.

A second direction is to investigate the role of affect in beliefs about the stockmarket that seem to suggest little understanding of rational economic principles. For example, perhaps some people are more prone than others to investing in high-performing stocks (despite their likelihood of regressing towards the mean), due to an affectively-based judgment that high benefit means low risk. Thirdly, I intend to explore more direct methods for measuring the underlying affective mechanisms by which judgments are made, as well as the interplay between affect and analysis in the development of beliefs.

Continued on p16 ...

# Meteorology - science or aeromancy?

Dick Whitaker and Steve Symonds

## Introduction

When humans first began to communicate, one of the topics of conversation was, very probably, the weather. Certainly agriculture and exploration created a dependence on the weather that continues today - put any group of farmers or sailors together and they will be discussing the weather within minutes.

Because of this dependency, many rules of thumb were devised using natural signs to try to predict what would happen in the short and long term. Some of these are still taught to our children today. "Red sky at night shepherd's/sailor's delight, red sky in the morning shepherd's/sailor's warning" is probably the best known. A ring around the moon predicts rain in 24 hours. Groundhogs in the United States can predict the seasons, while on the other side of the Atlantic, what happens on particular saint's days can give an indication of the weather in the next few months. St Swithin is a favourite here.

The great difficulty in weather forecasting was that while the farmer knew what the weather was in his/her locality, there was no way of telling what was happening elsewhere. There was also no understanding of atmospheric processes or circulation.

## The rise of technology

The invention of the telegraph in 1838 allowed the instant transmission of information so that weather forecasters, such as Rear-Admiral Robert Fitzroy\* in England, could get a picture of what was happening over a large area. Fitzroy began his forecasts in the 1850s. Across the Atlantic, Matthew Maury, a lieutenant in the US Navy, was injured while ashore and, after studying during his long recuperation, became the superintendent at the Navy's Depot of Charts and Instruments. Here the logs and charts of every voyage by every US Navy ship were stored. Maury started plotting the information on the weather contained in those logs and built up the first picture of the atmospheric circulation. From these crude beginnings, scientific weather forecasting has developed.

Maury did not get involved with forecasting the weather until much later in his career; he mainly studied climatology. Fitzroy, on the other hand, was particularly concerned about issuing warnings of storms to shipping and, in the early 1860s, started issuing forecasts, some which were published in *The Times*. It is said that Queen Victoria asked for a personal forecast on occasion. Sadly, Fitzroy's forecasts were not very accurate and *The Times* became quite scathing: "Last week Nature seems to have taken special pleasure in confounding the conjectures of science" (April 1862). Fitzroy cut his throat in 1865. Few forecasters have followed his example, but the criticism by the media is always there if the forecast is wrong, or, more importantly, if they think the forecast is wrong.

\* The same Robert Fitzroy who, earlier in his career, had been captain of *HMS Beagle*, on which Charles Darwin made his historical voyage.

Frontal theory was developed by the Norwegians in 1917. Weather radar appeared in WWII. The first live satellite transmission of a picture of the cloud over the Earth was in 1961. Today supercomputers, using numerical models of the atmosphere, produce charts for days ahead with a high level of accuracy.

With all the technology available today, weather forecasting is still an inexact science. Most forecasts are substantially correct but a few are still wrong. Some weather events can develop very quickly and extreme events are very difficult, if not impossible, to forecast. Meteorologists, however, are learning all the time and exchanging information - as happens in any scientific discipline.

## Who is a meteorologist?

The minimum academic requirement for a meteorologist is a Bachelor of Science degree with majors in Maths and Physics. There is, however, no law to stop anyone calling themselves a meteorologist or issuing weather forecasts. They would not get a job working for a recognised weather service, but there is nothing to stop anyone setting themselves up as a forecaster if they can convince enough people to believe what they say.

Television weather presenters are, for the most part, journalists with no qualifications in meteorology at all. They are talking heads who read the forecast from the autocue. The forecast is written by the Bureau of Meteorology, but this does not stop the public from assuming that presenters have some knowledge of, or input into the forecasting process. These people are often assumed to be experts.

## Doing something about the weather

Humanity has always harboured a wish to not only predict the weather, but to modify it to suit the immediate needs of society. From the earliest times, prayer was regarded as the only way to change the weather, and appeals were made to the various weather gods, sometimes involving human sacrifice, to adjust the prevailing weather to more desirable conditions. Sometimes the gods appeared uninterested in responding and this was regarded as proof that the society in question was in divine disfavour. However, occasionally the gods did appear to take a hand, with the hapless Kublai Khan a case in point.

In 1274, and again in 1281, Kublai Khan had two attempts at launching naval attacks against Japan. On both occasions his fleets were smashed by typhoons, and the Japanese people believed that this was a result of their God, responding to prayer, sending a Divine Wind - or *Kami-Kaze* - to rout the enemy and protect their country.

As the centuries rolled by, attempts at weather modification continued, with the emphasis moving away from prayer to more physical methodology, such as firing canon or volleys of arrows at approaching thunderstorms. Again the results were inconclusive.

Hail cannon are still sold around the world. The idea

is that you fire the cannon into the thunderstorm to break up hail stones - the cannon supposedly creates a shock wave that disintegrates the hail. This idea has been around for a long time. It started on the battlefield, where a British meteorologist, R Abercrombie developed the theory while he was in the army that gunfire influenced rainfall. Artist and sculptor Benvenuto Cellini claimed in the sixteenth century to have stopped rain and hail by firing artillery pieces.

At the turn of the century, Clement Wragge, the Queensland Government Meteorologist, used a number of hail cannon to try to break a drought. One of these Steiger-Vortex guns is still on display in a park in Charleville where the experiment took place. As with all good rainmaking experiments, Wragge waited until there were clouds around before conducting the experiment. Even so, as he admitted, the project was a failure. He left Queensland soon after this. (In later life, Wragge developed ideas for long range weather forecasting, and took as a pupil the 16 year old Inigo Jones. Jones was hailed for many years as a great long range forecaster, but a comparison of his predictions with subsequent events shows he would have had greater success just sticking to climatology.)

The trouble with hail cannon is that hail is a rare event at any particular place. One could blast the cannon at every storm and never get hail, thus showing the cannon's effectiveness, but if there was no hail in the thunderstorm to start with, it shows nothing of the sort. It is impossible to prove a negative - you cannot prove that the cannon do not work. On the other hand, if you consider that an ordinary thunderstorm has the energy equivalent to about fifty Hiroshima bombs, firing a small cannon into it is unlikely to have any effect at all. Be that as it may, hail cannon are still popular and many farmers have invested in them.

Changing the climate through agricultural activity was also widely believed possible, up until the last century, as expressed through the old saying "Rain Follows the Plough". An example of this is the strange story of "Goyders Line".

George Goyder, the South Australian Surveyor General, conducted a survey of his state in 1865, and, as a result, drew a line on the map which became known as Goyder's Line. He claimed that, north of this line, general agriculture would not be feasible because of insufficient rainfall. The Government ignored his advice and allowed farming to begin well to the north of this line.

For the first few years after the farming allotments were granted unseasonably good rains led to bumper wheat crops from the "Golden North". Goyder's critics said that he had forgotten the old adage, "Rain follows the plough". With this supposed form of weather modification, ground is broken by ploughing and moisture is liberated into the air, resulting in increased rainfall. However, after a few years, the rainfall pattern returned to "normal" and most of the wheat farmers were forced off their land, leaving behind derelict homesteads and machinery for all to see to this very day. Clearly, rain does not follow the plough. Possibly, the reverse is true - a study in the wheat belt of Western Australia shows a slight reduction in rainfall following land clearance.

### **Making rain**

Some half a century after Goyder's Line was drawn, and following a severe local drought in 1915 across San Diego, USA, self proclaimed rainmaker Charles

Hatfield undertook to produce rain for the then fabulous fee of \$10,000. His efforts were followed by devastating floods, and many lawsuits were filed against him. This strange event was later to be the subject of the Burt Lancaster film *The Rainmaker*.

In 1947, Project Cirrus was begun, which attempted to weaken hurricanes before they reached the American coastline, utilising cloud seeding from high flying aircraft. In the first attempt a seeded hurricane abruptly changed course and caused widespread damage to parts of Georgia, and, as with Charles Hatfield, extensive litigation followed.

With these last two examples it is unlikely that the human intervention had any effect whatsoever in the outcome. However using this as a legal defence is difficult, because it means the participants do not really believe in what they are doing. If a weather modification system goes wrong, the perpetrator basically has the choice of being labelled an incompetent or a charlatan, and neither of these is legally desirable.

Cloud seeding experiments by the CSIRO in the 1960s proved inconclusive, and yet many people still believe that cloud seeding is the answer to Australia's rainfall deficiencies. Cloud seeding experiments were carried out over areas which had a reasonably high rainfall to start with. You cannot seed clouds that are not there, so experiments over desert areas would prove fruitless.

Perhaps the most famous weather modification proposal in Australia was the Bradfield Scheme. This still gets trotted out at election time by various interest groups, particularly in Queensland.

Bradfield, the Chief Engineer of the Sydney Harbour Bridge project, came across a paper by meteorologist Edwin Quayle, published in 1921, titled *Possibilities of Modifying Climate by Human Agency*. Bradfield published his scheme based on Quayle's proposals in the magazine *Walkabout* in 1941. The Bradfield scheme proposed damming all the major inland rivers - the Diamantina, Georgina, Finke, Flinders, Clarke, and Coopers Creek, and some of the north Queensland coastal rivers, to create vast inland lakes. The evaporation from the lakes was supposed to enhance rainfall in eastern Australia. With widespread interest and debate by the public and in the press, the Director of Meteorology, H N Warren, set up a panel which included Quayle, to investigate the scheme. They concluded that there was little evidence to support the claim of possible enhanced rainfall from the dams. All that would be produced was enhanced water storage. Quayle was probably wrong and the investigation correct but it is all in the past now. Environmental concerns would prevent such a scheme even being considered today.

Australia is "a land of droughts and flooding rains". This is because of its geography. Every drought is accompanied by stories of desperate farmers, starving sheep and cattle and failed crops. It is a time ripe for the rainmakers.

Rainmaking has taken many forms over the years. Dances, sacrifices to the gods and prayers have all been used. Do prayers for rain work? Every drought has broken eventually so one might say they do. If the rainmaker has some knowledge of meteorology and times his/her activity to coincide with a meteorological situation that should produce rain, the rainmaker could claim some success. This is not a very scientific way of assessing the efficacy of rainmaking, but is there

a rainmaking activity that can be assessed objectively? Remarkably, there is.

The Sydney Gay and Lesbian Mardi Gras started in June 1978. It was held in June for three years before being switched to late February/early March to take advantage of the warmer weather. A group of concerned Christians has prayed for rain to wash out the Mardi Gras for at least the last eighteen years. In that time it has rained on the parade twice, it has rained shortly after the parade ended twice and there have been two or three occasions when it rained during the day but was fine for the parade itself. The objective of the prayers, though, was to rain on the parade. Twice in eighteen years this has happened. February and March are two of the wetter months in Sydney with an average of thirteen raindays each. It rains on slightly more than one day in three. In eighteen years, you would expect rain, on average, on six or seven Mardi Gras days - and this is precisely what has happened. Praying for rain does not seem to work, or perhaps the prayers are not being answered.

However some weather modification efforts have definitely been useful.

### Some successes

During World War II, a major problem for allied airmen emerged after returning to England from overnight bombing missions across Europe. Sometimes much of southern England would be covered in fog and the returning aircraft, low on fuel, had nowhere to go, resulting in several mass disasters.

Bomber Command instituted the FIDO program (Fog Investigation and Dispersal Operations), which prevented fog from forming over airfields by installing numerous petrol burners about their periphery. Although enormously expensive, FIDO was accredited with allowing some 2500 aircraft to land in foggy conditions, and undoubtedly saved the lives of many allied airmen.

In today's world, orchardists use similar techniques to prevent frost forming in their orchards on winter nights. Frost formation can be disastrous at certain stages in the fruits' development, and on very cold winter nights orchardists will light fires, turn on large electric fans, and even hire helicopters to fly all night across the area in an effort to keep the air circulating so that frost will not form. Although expensive, this weather modification system is successful and saves far more than the cost of running the equipment.

The story of weather modification has been a *pot pourri* of fervour, fallacy, fiction and fact, and as such, has mirrored the progress of a large number, perhaps the majority, of human endeavours and enterprises.

### Order from chaos

It is human nature to try to find patterns in chaos. Certain arrangements of stars in the sky suggest figures, so constellations are born and named. Many times there have been attempts to find cycles in weather, with rainfall being the most studied. There is talk of 30 year cycles, or 90 year cycles. Suggestions that "it always rains on the full moon" are still made. The regular sunspot cycles have also been used to attempt to forecast weather cycles.

Kew Gardens in London has the longest rainfall record in the world, with measured rainfall going back to 1697. Four hundred years of records would, you would think, show any 30 or 90 year rainfall cycle. What

is absolutely clear from the record is that no such cycles exist. Rainfall is not cyclical - there are wet years and dry years, wet periods and dry periods, but a dry year is just as likely to follow a wet year as a wet year.

Of course there are seasonal cycles in rainfall, and marked dry and wet periods in eastern Australia can be correlated with the El Niño/Southern Oscillation (ENSO) cycle to a certain extent. The ENSO cycle is, however, over two to seven years which is not very precise.

Early weather forecasting was inaccurate, but it has improved markedly over the years. There are many people, however, who perpetuate the myth that the Bureau of Meteorology always gets the forecast wrong, and many of these people have their own rules of thumb for forecasting the weather.

There have been studies which show that some human conditions are related to weather events. Births, and deaths from heart attack, can be triggered by a fall in atmospheric pressure, usually preceding a front. High humidities, heat waves, cold weather and strong winds can trigger a number of medical conditions. Heat waves kill people, windy days make children restless, cold weather can affect arthritis sufferers and so on. It is a short step from having a condition triggered by a weather event to using the condition to forecast a weather event. "The children always get fractious when it is windy, therefore if they are fractious, the wind must be coming". It is illogical, but many people swear by it.

One fallacy, given a great deal of publicity, is that cloud in the Bay of Bengal produces cloud off the Western Australian coast, which leads to the northwest cloudbands that bring the winter rain to much of the wheatbelt. During the southern hemisphere winter, cloud in the Bay of Bengal is of great interest to the people of India, Bangladesh, Burma and Sri Lanka, but of no interest at all to the people of Australia. The cloud does not cross the equator, no matter what it looks like on a satellite photo. Facts are of no interest to the Bay of Bengal adherents. Maury's early description of the global circulation, and every study since then has passed them by.

"It always rains on the full moon" is usually modified to "well, within three days either side". There is a grain of truth in this, but it has nothing to do with the moon. Most places in agricultural districts, rather than grazing districts, get at least four raindays a month on average. Saying it always rains in the week surrounding the full moon would be a not unreasonable bet. Other lunar forecasts include "It never rains when the crescent moon forms a cup. You have to wait until it tips to let the rain out" and "The moon increases in size from the new moon to the full moon so the full moon sucks the water into the air". These are strongly held beliefs in 1999.

The behaviour of ants, black cockatoos, cows, spiders and various other animal species are said to predict the weather. Kookaburras laughing in the morning herald rain in some areas, drought in others, and nothing at all in other areas, but if they call in the evening, that's another matter.

It may well be that some of these animal forecasters are accurate, but until a proper study is done, it is all supposition. A TV weather presenter in the 1960s used to give the Bureau's forecast and then add what he

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# Why people complain about a fully rebateable

Admittedly, it is a lengthy title but it quite neatly sums up the perfectly explicable phenomenon that this article will discuss. This article will proceed through six parts. First, I will relate the events that inspired the title, and have a brief look at some evidence on the effectiveness of natural and medical influenza protection. I will then digress into discussing some of the psychological processes that cause people to believe in the efficacy of ineffective health practices, and discuss why naturopathy is such an appealing alternative health practice to the general public. I will then return to the topic at hand; exactly why would someone be happy to hand over \$60 to a naturopath yet feel inclined to complain about a \$25 doctors fee that they can fully recoup through Medicare? An identical scenario to that which I seek to explain in this article is that people complain about the cost of clinically trialed drugs with evidence for their effectiveness, yet are willing to spend \$50-\$70 on untrialed "natural" cellulite treatments. Finally, I will draw some conclusion from this scenario and from the other issues presented.

## The inspiration for this article

In keeping with the practice of doctor-patient confidentiality I can reveal the names of neither the doctor nor the patient involved in the conversation related to me, suffice to say that I have no reason to doubt that the two statements which inspired this article are genuine. Someone I know who has a friendly relationship with her GP, got onto the topic of naturopathy in a conversation during her last visit. Knowing, as a Skeptic, that I treat the claims of alternative health practitioners with caution, she decided that I might be interested in what her doctor had to say.

The first incident her doctor related was of a patient with a serious health problem who had sought treatment from a naturopath. The doctor was concerned about the efficacy of the treatment regime recommended by the naturopath, in fact she thought it might be counterproductive, not just ineffective. To challenge the naturopath's recommendations, as any doctor may do with a colleague, the GP telephoned the naturopath to inquire whether the naturopath knew of the potential consequences of his suggested treatment. The naturopath's reply was something along the lines of "How can you challenge my professional judgment? I've had three months training!" The second part of that reply could be considered comical if the circumstances and consequences were not serious.

The doctor's second statement to her patient inspired this article. This statement was that "people don't seem to mind paying \$60 to see a naturopath, but the same people will complain about my \$25 fee that they can get a full rebate on." In case you think this anecdote is a one-off case, it is worth noting the 1996 report by a University of Adelaide professor,

**\$25 doctor's bill but don't mind**

**paying \$60 to see a naturopath**

**Guy Curtis**

showing that Australians spend more than twice as much, annually, on alternative medicines than they spend on traditional medical drugs (Fitzhenry, 1999). From a

psychological perspective, this seems to be a very plausible state of affairs, based on some pretty simple principles. There is a body of peer-reviewed, scientific psychological research that I will touch on that could help explain this phenomenon which seems quite bizarre on first hearing. Before I get to that, it would be unfair to look on the choice of a naturopath over a doctor with caution without some basis apart from

price (eg, effectiveness) for that caution.

## Natural vs Medical: A quick comparison of influenza prevention efficacy

I will begin this quick comparison of effectiveness with a price comparison between "natural" and "medical" influenza prevention. The natural prevention is what was recommended by a guest on Bert Newton's TV show, and I assume this is what other naturopaths would recommend if you consulted them.

**Natural:** One naturopath appointment (\$60), three bottles of echinacea (the extract of a flowering plant) with vitamin C for the winter (\$90) (total cost \$150).

**Medical:** One doctor's appointment (bulk billed, no charge), one influenza vaccination (\$15, or \$3.60 for Medicare card holders) (total cost \$15).

The question this price comparison raises is: Is the natural prevention 10 times better, having cost 10 times as much?

To answer this question, let's look at the best and most recent scientific evidence on the efficacy of echinacea and influenza vaccines. The evidence I will outline is one study on each treatment, with double-blind and placebo-control conditions (I will explain these simply for the non-scientists).

**Double-blind** is where neither the experimenter nor the participant knows what preparation the participant receives at the time of treatment, which takes away any bias that knowing what you are taking will cause.

**Placebo-control** is where one group is given harmless sugar pills instead of the treatment under investigation, so that you can be sure that the results are because of the treatment and not because people have been swallowing small round things at regular intervals.

First, Melchart, Walther, Linde, Brandmaier, and Lersch (1998) investigated echinacea as a preventative for influenza. The average number of days before the first upper-respiratory-tract infections were 66 for one echinacea group, 69 for another echinacea group, and

65 for the placebo-control group. Despite the slightly longer average time without a cold or flu for the echinacea groups, when normal measurement error is allowed for, these groups were not significantly different. Melchart *et al* concluded that "in this study a prophylactic effect of the investigated echinacea extracts could not be shown." (p. 541)<sup>1</sup>.

Wilde *et al* (1999) examined the effectiveness of two influenza vaccines against a placebo-control group. They found that the total number of days participants reported having cold symptoms were 28.7 per 100 participants for the vaccinated groups and 40.6 per 100 participants in the control group. Moreover, days absent from work were 9.9 per 100 vaccinated participants and 21.1 per 100 control participants. Of the 179 untreated-control participants, 24 contracted flu during the period of the study, compared with just 3 of the 180 vaccinated participants. Given the effects for days sick, days off work, and number of participants who got sick Wilde *et al* concluded that "influenza vaccine is effective in preventing infection by influenza A and B" (p 908). Getting back to the price comparison the product that is 10 times more expensive appears to be ineffective, while the cheaper alternative appears to be quite effective.

I have just reviewed a small amount of good evidence that suggests one particular preventative measure is effective and another is ineffective. Although the evidence I have reviewed is undoubtedly good evidence, I would not be willing to say that it is conclusive proof of the (in)effectiveness of either prevention. Repetition of findings is important to science, and I have only briefly reviewed one study of each treatment, thus, I invite anyone to point to other good evidence for or against the efficacy of these preventative measures. Peer-reviewed reports of well-designed research almost always constitutes good evidence to answer whatever question is being asked. However, in daily life people often form beliefs about the effectiveness of treatments based on bad evidence. It might be interesting for readers to know some of the psychological principles that cause people to believe that ineffective health practices are, in fact, effective.

### **Belief in the efficacy of ineffective health practices**

So why do people believe in the efficacy of ineffective health practices? A primary reason for people believing ineffective health practices cure problems is spontaneous/natural recovery. Sufferers of about 50% of ailments that come to the attention of medical practitioners recover without intervention (Nolan, 1974). Viruses that cause colds are a perfect example. Doctors can treat the symptoms of colds, but as we all know the man or woman who finds a cure for the common cold will end up very rich indeed.

People like to attribute causes to events (Myers, 1993). As such, when a cold goes away people look for an event that may have caused this to happen. Thus, if someone puts banana skins on their feet when they have a cold and the cold goes away (as it would have in any event) then the person may well attribute the cause of the cold's disappearance to the "banana skin on the feet" cure. And, of course, the single event (putting banana skins on one's feet) is more memorable than something someone does everyday that may well have been far more beneficial for the condition, such as getting a good night's sleep. It is easier to attribute a cause to a more memorable event, after all if

an event is memorable it is "cognitively accessible." This is complemented by a corresponding failure to use information (eg, the good night's sleep) because a more effortful memory search is required to identify the less salient events (Gilbert & Malone, 1995). Basically, what this boils down to is the fallacy that what precedes an event is its cause or *post hoc ergo propter hoc* (Gilovich, 1991). Whether the treatment someone receives is banana skins on the feet, "energised" water, electromagnetic pulsators, crystals, vitamins, herbs and / or spices, matters not. If spontaneous recovery follows the "cure", as it would quite often, then people who believed these things may work enough to have tried them in the first place, one would think, would be quite likely to attribute the cure to the ineffective health practice that they tried.

Spontaneous recovery from illness is, in some respects, a classic example of the regression to the mean phenomenon (Gilovich, 1991). Regression is the tendency that exists in all aspects of everyday life for unusual events to move back toward some baseline level, this being the mean or average. We usually expect to see regression, often without this being an explicit assumption. For example, when Mark Taylor scored 334 not out, no one expected the performance to be repeated or bettered in his next innings, we expected more like his usual average (or mean) of 43.49, and if Steve Waugh makes a duck we expect he'll do better next time<sup>2</sup>. Regression can be seen in the fact that share prices go up and down, that our weight often fluctuates a few kilos around some individual "norm", and in that people who are usually healthy return to health after minor illness. In fact, regression is such a well-documented phenomenon that in scientific experiments you always have to allow for it as a possible cause of any effect that you observe (Huck, Cormier, & Bounds, 1974).

It is regression to the mean and faulty logic that caused America's sports stars to think that appearing on the cover of *Sports Illustrated* was a curse (Gilovich, 1991). Picture this scenario: having put in unusually good performances, an athlete from some sport makes the cover of the premier sports magazine in the country, their performance declines back toward their usual level (as it would, given that we know things regress to the mean). What memorable event in the sports person's mind precedes, or marks, the end of their good performances? You guessed it, making the cover of *Sports Illustrated*. This same situation happens with recovery from minor ailments and the events or treatments to which people attribute curative properties.

### **Why naturopathy?**

Through the mechanisms of spontaneous recovery (through regression to the mean) and faulty reasoning about the cause of events, there are good reasons why people believe in the efficacy of ineffective treatments. So, why is naturopathy in particular such an appealing alternative health practice, given that people are capable of believing that any ineffective health practice is effective? Why don't people prefer eating cake every time they are sick rather than seeing naturopaths?

A good answer seems to be paired associate learning, and another logical fallacy that "like goes with like". Just like Pavlov's dogs, one stimulus can be used to elicit the response normally made to another. As consumers we are daily bombarded with the association of nature and naturalness with healthiness, be it in advertising for sugar or shampoo. It is not a bad associa-

tion for people to learn, considering that fresh food usually contains more nutritional value than processed food (eg, Hill, 1997). However, the association can be stretched so that anything that is seen as natural is also thought to be healthy. Thus, we have commercials for sugar telling us that it is “a natural part of life”, and for butter with a mother telling her child that it is natural but “you’d better ask your father about margarine, he’s the chemist.”

We learn from these advertisements that sugar and butter are natural, and thus healthy, while other companies extol the health virtues of their low-sugar/low-fat products. Does anyone pick the contradiction here? The “like goes with like” connection is often true, it is a way we can learn about and understand the environment that saves us thinking too much. Often healthy and natural is a correct “like with like” connection, but then again brown snakes and redback spiders are natural too, and I would consider them a health hazard.

A paired association of things neutral with things good or healthy is standard advertising fair. That is why so much is paid to celebrities to endorse products. Advertisers know that if you like the celebrity and you see the celebrity with a product often enough you will come to like the product (Cialdini, 1984). Simple isn’t it?

Anyway, people are conditioned to believe that natural is healthy, despite some of the contradictions such as that with butter and sugar. Naturopathy has the natural advantage, pardon the pun, of being associated with naturalness, and as a result healthiness.

It is likely that the popularity of naturopathy in Australia has been enhanced by the best-seller performance of *The Liver Cleansing Diet*. This book is based on the advice its author received from naturopaths when she was a medical student (Proietto 1998). According to Joe Proietto (1998), *The Liver Cleansing Diet* contains claims about the liver’s effect on the body and dietary effects on liver functioning that are unsupported or untested in the relevant scientific literature. The author of *The Liver Cleansing Diet*, Dr Cabot has, to the layperson, the authority of holding a medical qualification, and thus the credibility that comes with that authority. People find others in authority more credible and persuasive than non-experts (Cialdini, 1995; Milgram, 1974). If people see a medical authority figure giving credence to naturopathy they are likely to see naturopathy as more credible than they would have previously.

I have identified some of the psychological principles associated with the popularity of naturopathy as an alternative treatment in Australia; namely paired-association and, to some extent perhaps, authority influence. Having outlined these points I will now move on to what you have been waiting for, the answer to the question in this article’s title.

### **Why do people happily pay more than twice as much for a naturopath than for a doctor and complain about the doctor’s prices!?!**

At the simplest level the phenomenon of people complaining about rebateable doctor’s bills and happily paying more expensive naturopathy bills is another example of paired associate learning. A well-learned association that we use almost every time we shop is that between price and quality (Cialdini, 1984). Just like the association between naturalness and healthiness,

the association between price and quality is usually a helpful rule to guide our actions. A new car, with a warranty, at \$30,000 is a superior product to a 20-year-old used car at \$1000. The more expensive car will likely be more safe, reliable, and comfortable than the cheaper one. Cialdini relates an incident where this association unintentionally worked in favour of a shopkeeper. The shopkeeper’s assistant misread a note asking for some slow-moving items of jewellery to be marked down by 50%, and marked them up by 50%. The items of jewellery, now the most expensive in the shop, were perceived by the next bus load of tourists to be the best quality (purely on the basis of price) and were all sold.

Most readers will now have realised that the price-quality association works against the medical product that the government subsidises because of its comparative quality. Comparing a doctor’s fee and a naturopath’s fee is not something people often do; otherwise the situation may be reversed. When seen side-by-side a simple contrast effect makes the naturopath seem relatively expensive and the doctor relatively cheap. To clarify this, humans’ judgments and perceptions are influenced by what they have just been exposed to: if the room seems dark it might be because you were just out in the sun or if the \$499 video recorder seems cheap it might be because you just bought a \$1499 television (Schiffman, 1990; Cialdini, 1995). These perceptions are relative to what they are contrasted with. Therefore, putting the doctor’s and naturopath’s bills together gives the doctor a relative advantage. Usually, however, doctors and naturopaths do not share the same rooms. People only attend either a naturopath or a doctor not both together or consecutively. Therefore, the bills people receive in isolation are not instantly and easily comparable. As I said, a contrast effect works best when you have just been exposed to the item to which a contrast is drawn. Given the price-quality association and the absence of a contrast with a doctor’s fee, someone being charged \$60 for a visit to a naturopath is likely to think (even if only implicitly) “if it costs this much it must be worthwhile”.

Another psychological process driving this phenomenon is cognitive dissonance. Cognitive dissonance refers to the psychological discomfort people feel when their attitudes do not match their behaviours (Festinger, 1957). When someone’s behaviour is different (dissonant) from their attitudes, they often adjust their attitudes to match their behaviour (rather than behaving congruently with their existing attitudes) (Myers, 1993). Moreover, of course, if you behave congruently with an attitude that you hold it reinforces that attitude. Having handed over a reasonable sum, someone is more likely to believe that what they paid for is valuable, and form a positive attitude to it, than if the sum was smaller. This, again, is because price is associated with quality.

A simpler reason why the more someone pays the more positive their attitude to what they paid for, is that they look silly to others if it isn’t. Forgetting that the person will intrinsically feel uncomfortable about not feeling positive toward what they paid for, others will view them as strange if they hold a negative attitude to what they paid for, unless some good reason is given (Shiffman & Kanuk, 1987). If you pay \$1 for an astrology chart you can safely say “I don’t believe it, it’s a bit of fun”, and you won’t look too silly. If you say the same thing having paid \$1000 for an astrology chart you will look like an idiot, and someone is sure to raise

that old "fool and their money..." saying. Therein, perhaps, lies the psychological basis for my friend's doctor's observation. People look silly if they complain about the quality and effectiveness of something they freely paid a reasonable amount for, they don't when they complain about something relatively cheap.

### The moral of this story

All the psychological processes that I have discussed in this article come from fields of normal, not abnormal, psychology. All of these processes are adaptive to the environment, they have survival value. Imagine a world where authority figures did not hold more than average influence, or where the roar that you hear doesn't get mentally associated with a lion heading in your direction. Imagine if our attitudes were completely inflexible, and we had mental breakdowns and untold anguish every time the situation we find ourselves in leads us to behave differently than our existing attitudes permit. Imagine if we steadfastly refused to look at the event that preceded another as a possible cause for the second event.

The moral of this story is that in some situations the normal, everyday, adaptive psychological processes that make life easier and aid in our survival do not serve us perfectly. In fact, given the right set of conditions they can lead a perfectly normal person to complain bitterly about a fully rebateable \$25 doctor's bill, yet feel untroubled by the \$60 bill that they receive from their naturopath.

### Footnotes

1. The authors believe that Echinacea may have a 10%-20% preventative effect when the results of this study are combined with their previous two studies. This still appears relatively ineffective compared to the vaccine as a preventative measure.
2. Blatant references to cricket are intended to make the point that regression is a common phenomenon, but, more importantly, are aimed at currying favour with the Editor.

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### ...Weather from p12

thought would happen based on the behaviour of his bees. Apparently, he had some success.

Meteorologists are the first to admit that meteorology is an inexact science. Despite years of training and the latest technology, the occasional forecast is wrong. Not as many are wrong, however, as people think. Misfortune is always someone else's fault so if it rains on your wedding or party or parade, the Bureau of Meteorology is at fault. It does not matter what the forecast said, you got wet - they are to blame. It is also because of the inexactness of the science that people with no qualifications whatsoever in the field can set themselves up as experts - and they will find a ready audience willing to pay for their advice.

The film *Twister* has a lot to answer for. It spawned a generation of storm trackers and people who became overnight experts on the basis of having seen a tornado. Many of these storm chasers have taken remarkable photographs of thunderstorms. When Tropical Cyclone "Vance" crossed the WA coast, a TV cameraman strapped himself to a tree to record the storm. He might have got some excellent images but was it worth the risk? Thunderstorms and Tropical Cyclones are dangerous and those contemplating chasing them should remember that.

Aeromancy is divination from looking at signs in the sky. Just as astronomy has moved on from its base in astrology, so scientific weather forecasting has moved on from its aeromantic base. Even so, while there are people willing to trust that a particular group of stars at the time of their birth has something to do with their personality, there are those who will take more notice of ants building their nests than all the satellites and supercomputers in the world.

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# The “uncertainty” of orthodox medicine

Peter Arnold

I am stimulated to join the “quackery debate” and would like to pass on some practical lessons I have learned in a lifetime of orthodox general practice.

## Orthodox medicine is essentially about probabilities

Whether or not the diagnosis is more likely than not to be X, the management most likely to succeed is Y, and the adverse effects most likely to occur are Z. However, with statistics being so intellectually challenging a discipline, few patients or doctors have a realistic understanding, for instance, of the practical significance of the difference between a risk of 1:1,000 or 1:10,000.

When a cardiac surgeon tells his patient, after bypass surgery, that he has a 70% chance of surviving ten years, what is he really saying? Not that he is likely to live seven years. Rather, of every 100 patients who had the operation ten years ago, 70 are alive and 30 are not; but the surgeon doesn't know into which group that patient belongs.

## Common things occur commonly

Almost all episodes of illness (and even many accidents) will resolve, in time, in the patient's favour. Each of us will, however, eventually run up against our mortal illness or accident. That, by definition, will occur once. By contrast, we endure hundreds of episodes of illness which abate without serious consequences.

## *Primum non nocere* (First, do no harm)

This is, in many ways, a corollary of the previous lesson. If, in most cases, patients get better, recognise this and assist, but don't harm in the process.

## Exclude the nasties

The most important accomplishment for an episode of illness is for the GP to exclude unpleasant or dangerous illness. The infant does not have epiglottitis, the baby meningitis, the child leukaemia, the boy a twisted testicle, the young woman an ectopic pregnancy, the young man cancer of the testicle, the mature woman cancer of the cervix or breast, the middle-aged man or woman a coronary, the older woman cancer of the ovary, the older man cancer of the bowel. This list illustrates what should go through a GP's mind when a patient presents with a new episode.

Once those things are excluded, whether on the patient's history, by examination, or by further testing, then whatever it is will probably get better, with or without assistance. If it doesn't improve within a reasonable time, the doctor needs to look for less common possibilities.

They may find an uncommon disease, such as hyperparathyroidism, or a rare disease, such as multiple sclerosis. But uncommon and rare diseases can seldom, and should seldom, be diagnosed at first consultation.

Many people attending a GP have no physical illness. Because it is socially and legally acceptable to “see the doctor” (witness the standing of sickness certificates!), between a third and three-quarters of people attending a GP have no organic illness. Rather, they have a psychological, social or work-related problem to which they

can give the appearance of something medical: backache, headache, tiredness, insomnia etc (so-called ‘somatisation’). A competent GP recognises this, helps the patient identify the real problem, and talks through an appropriate approach, which may not be medical.

## Every human being is different from all others

A moment's thought about fingerprints and genes should prove the point. Whether due to nature (genes) or nurture (our individual physical, social and emotional environment), we are unique. However, sharing some 95 per cent of genes, we are as likely as the next person to be affected by an infection, poison, wound or cancer. But that tiny per cent by which we differ might, extremely rarely, mean that we do not get measles when the rest of the school is afflicted, we don't get ‘flu when the other office staff go down, we survive a cancer which kills almost everyone else who suffers it, we don't get lung cancer when we smoke 20 a day for 20 years. But this rare fortune is not generalisable to our fellows. It is our individual fate.

## Medical practitioners are only too well aware of the ‘uncertainty’ of our day-to-day work

Perhaps there is a place for a medical ‘uncertainty principle’. While medicine is, indeed, ‘evidence-based’, that evidence is, in most cases, statistical. It must be applied, with caution, to individual patients. It is no consolation to you, as the one in a thousand to suffer a particular complication, to know that 999 people didn't develop it!

## Medical practice is based on the scientific principles of the physics and chemistry of the human body

These are the rock solid foundations for the theories of immunology, cancerogenesis, the body's response to injury, which lead to proposed remedies. The theories sometimes turn out to be incorrect. The remedies may or may not be shown, through statistically valid trials, to help a certain percentage of people and to harm a certain percentage. The remedies may endure forever (aspirin, colchicine, digitalis, heparin) while others, found to do more harm than good or to be ineffective, are discarded. Such is the nature of scientific progress.

It may be helpful for those defending orthodox medicine to understand the medical paradigms I have described. We GPs apply scientific principles (universally applicable to the species) in uncertain circumstances, using less than complete information provided by our patients. For the most part, we work on the basis of probabilities, and “common things occur commonly”. While we try to exclude the nasties, we try to do no harm. While doctoring individuals, we recognise that everyone is unique, and adjust our advice accordingly. These are characteristics of orthodox medicine with which those of unorthodox therapies should be compared. Do alternative practitioners apply scientific principles? Are they competent to exclude the nasties and to reassure? If not, can they claim to be doing no physical, emotional, psychological or social harm?

# Afrocentrist linguistics

Mark Newbrook

Illustrated from *Ethiopic: An African Writing System: Its History And Principles* (Ayele Bekerie, The Red Sea Press (Laurenceville (NJ)/ Asmara), 1997) and sections of *Kemet, Afrocentricity And Knowledge* (Molefi Kete Asante, Africa World Press Inc, Trenton (NJ), 1990/1992)

Afrocentrism involves the reassessment of matters concerning the history and culture of Africa and the African diaspora (especially the African American world) with a very heavy focus upon the experiences and traditional viewpoints of African people.

These two books are among the more prominent manifestations of a tradition of African linguistics embedded in the Afrocentrist 'paradigm' which has been popularised among African American students and researchers in recent years.

Central to much Afrocentrist theory are the claims that African civilisation is very old indeed (eg, Molefi Kete Asante, henceforth MKA, p 33) and that Africans have had much more influence on word culture than is usually believed, notably (but not exclusively) through ancient Egypt, which Afrocentrists call *Kemet* and which they regard - very controversially - as ethnically and culturally part of Black Africa. It is also suggested that Africa is much more linguistically and culturally united, at least historically, than non-Afrocentrist scholars would allow: eg, Ancient Egyptian has often been identified - initially by the non-linguist Diop (see below) - as a pan-African ancestor language, contrary to the views of mainstream linguists. See below on MKA's comments in this area.

## Reduction in standards

The paradigm has aligned itself very overtly with 'post-modernist' cultural relativism, against the mainstream scientific/ social-scientific/ analytical-philosophical paradigm with its vision of universal standards of evidence and argumentation. In consequence, it has been characterised by a dramatic reduction in the standards of argumentation and evidence upon which claims are based and supported. Instances include the very speculative ideas presented by MKA on p 16 as if authoritative, the pretentiously complex and openly partisan schema for Afrocentrist studies which he sets out on pp 12-13, his references to 'harmony' and other vaguely positive notions as aspects of the Afrocentrist program (eg, on p 26) and some very loose and/or tendentious arguments and criticisms of others' arguments (eg, on pp 30, 58; note also the exaggerated use of the strong word *demonstrate* which MKA applies to his own conclusions on p 108). See below for some of Ayele

Bekerie's (henceforth, AB) shortcomings in these respects. In its more extreme forms, Afrocentrism includes some extremely 'fringe' theories, incorporating ludicrously implausible claims on various fronts about the abilities and achievements of early African people: psychic powers, advanced technology, diffusion throughout the world (see below), etc. Even in the more moderate forms of Afrocentrism, many very dubious ideas are proposed and indeed presented as facts.

All this has not been helped by the dilution of learning (especially at postgraduate student level) which has inevitably accompanied the gathering together of many disciplines into single departments of African or African American Studies and the like (see also below). In my view, much of the work produced in such departments would not hold up academically in a more critical intellectual environment where genuine specialists were more readily available. Interdisciplinary studies need not be shallow, and they should not be: but no scholar can cover all the ground alone.

Through its role in seeking to 'empower' African Americans and in promoting their identification with their African origins, Afrocentrism has become very overtly 'politically correct' in the USA. Attempts to correct its many excesses have been somewhat muted, owing to the understandable fear of being accused of racism (if one is not African American) or of being deemed a dupe or worse (if one is). Even academics have found it difficult to obtain a hearing for their critical observations.

(Note that the emphasis on 'harmony' in Afrocentrist works, referred to above, sometimes seems to involve an ominous move towards the rejection of internal dissent; eg, MKA p 85.)

Nevertheless, Afrocentrism has been criticised by various scholars and Skeptics, most notably by Bernard Ortiz de Montellano. For a brief summary of the developments up to 1994, see the discussion in Gross & Levitt's well-known book of that year.

But - although some attention has been paid to the specifically linguistic aspects of this issue - much still needs to be done on this front. This is partly because few linguists - even if they are not afraid of being considered racists - will bother to review or criticise works which are of such a low standard in respect of scholarship and logic. Like criticism of Afrocentrism more generally, such negative reviews as exist are often buried in websites, and the brief reviews which accompany internet postings advertising such books are largely positive and in many cases almost comically uncritical (there is apparently no screening of moderately expressed negative comment, so this pattern must be put



down to the reasons just mentioned). My own motivation for writing this present piece partly involves my fury at the blatant abuse of my discipline in works aimed at an audience which is in general quite unable to detect the gross errors and *non sequiturs* and which in consequence is likely to be deceived into regarding such material as authoritative.

My focus is upon AB's book (mainly certain sections; see below) and the specifically linguistic sections of MKA's text. I commence with AB's book, which is on a more specific linguistic issue. I will refer to MKA's book where it resembles AB's, and will later consider other aspects of MKA's work.

AB is himself Ethiopian rather than African American, and MKA is Ghanaian. They thus have a certain advantage in commenting on African culture - though this does not, of course, exclude the possibility of error.

### Ethiopic writing

AB's book is promoted on his web-site and on its cover as demonstrating that the 'Ethiopic' writing system used for Amharic and other Ethiopian languages has a significance going well beyond its links with these languages, and relates directly to deep aspects of the non-linguistic culture of Ethiopia and Africa (including links with ancient Egypt). According to AB, indeed, it is one of the most remarkable inventions of humanity. As early as p 3 of the book itself, AB is dogmatically making dramatic (if vague) claims of this very kind, and this continues throughout his text (particularly grandiose statements appear on p 9 and pp 64-65). If such claims were correct, this would be highly unusual, and indeed important from a number of perspectives.

The book is based on AB's PhD thesis in African American Studies from Temple University in Philadelphia; he is currently Visiting Professor in the Africana Studies and Research Center at Cornell. The arguably fringe-like activities of the Center For Frontier Sciences at Temple have recently been the subject of sceptical attention; and on the evidence of AB's book and other work of the same provenance (see later) the African American Studies Department also warrants scrutiny. As noted earlier, one might well consider that some departments labelled *X Studies* or the like (not only at Temple) seek to cover too many intellectual disciplines too thinly; certainly the linguistic material surveyed here does not inspire confidence (see below for some details).

I commence with AB's specific claims. By way of background, it must be said that the Ethiopic writing system is intermediate between an alphabet of the largely consonantal 'Semitic' type and a syllabary. A typical Ethiopic character consists of a larger element representing the syllable-initial consonant and a smaller, attached element representing the following vowel. Thus the whole represents a syllable, but its form is predictable from the phonology - whereas the characters making up a 'normal' syllabary cannot be analysed into elements consistently representing consonants and vowels but are genuinely unitary, with the result that the characters representing two syllables

sharing a consonant or a vowel need not share any features at all. The consonant-vowel system works well (with suitable variations) for most of the relevant languages, the best known of which are the classical Ge'ez and the modern Amharic. The date of the invention of the script is disputed but it must have been based on a rather sophisticated phonological analysis almost as impressive as that involved in the development of Korean Han'gul. Predictably, AB makes a great deal of this latter fact; eg, pp 9-10, 22-25.

In this context, it should be noted that AB repeatedly describes the script as a 'syllography' and downplays its alphabetic features, despite presenting these latter in detail and more or less admitting the truth on pp 91-92. Indeed, on one of the relevant websites he displays sheer naivety, confusion and indeed (apparently) ignorance in respect of this and other linguistic issues. On such websites, the level of the linguistic comments - at least those made by most pro-Afrocentrist correspondents - is generally very low. In addition, they are typically uncritical in their admiration for certain early Afrocentrists - notably Diop, most of whose linguistic claims demonstrate his own lack of familiarity with the discipline, and also James, whose work can only be described as pseudo-scholarly. AB and MKA themselves often fall into the same trap.

In any event: like all writing systems, the Ethiopic system is essentially a means of representing the words of the languages in question. Any other uses of the characters are secondary. It can be and has been used to represent a number of languages but in each such case it reflects the structure of the relevant language (well or not so well, depending on how various language-specific factors interact with its own resources). For instance, the 26 x 7 pattern of classical Ethiopic reflects the 26 consonants and the seven vowels of Ge'ez.

The suggestion that the script is of more dramatic cultural significance appears implausible. Scripts can come to have powerful symbolic value for the peoples who use them (eg, differences of alphabet can loom much larger than basic similarities between languages, as in the case of Croatian and Serbian); they can also come to be used for culturally significant, partly non-linguistic purposes, such as representing numbers (eg, Roman I, V, X etc; see below on Ethiopic equivalents) - but (with marginal exceptions) they are not closely connected with the content/meaning of what is written in them or with the thinking and culture of their users (this is especially true for syllabaries and alphabets, where the forms of the characters are arbitrary). Thus they cannot of themselves communicate, for instance, the philosophy or the 'spirit' of a civilisation. Pace MKA (see below), scripts (properly so-called) must represent languages (this distinguishes them from language-neutral pictograms and from non-linguistic visual art) - but they cannot themselves be languages, and still less are they cultures; they cannot even represent specific aspects of cultures.

One obvious piece of evidence for this is the fact that scripts can readily be abandoned for others, or adopted/adapted for the unrelated languages of unre-

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**AB assumes his  
central idea is valid  
... this idea is  
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nor persuasively  
supported**

---

lated cultures, and the important factors here are, again, *linguistic* ones (how well can the script handle the language?). There are no *necessary* non-linguistic consequences - even where the motivation for the change of script is itself partly non-linguistic, as in the case of the Turkish move from Arabic to Roman letters in the 1920s.

In any event, what AB actually shows (and even much of what he claims, in terms of detail) is by no means as impressive as is claimed on the web-site or in the book's 'blurb'. Readers who anticipate specific, dramatic, strongly supported factual or interpretive points will find themselves disappointed. Firstly, the style is rather rhetorical and in places popular, which makes the ideas very accessible but often leaves the scholarly reader with major unanswered questions (one is often almost invited to agree, more or less uncritically, with AB's interpretation). But, more importantly, the claims themselves are very often suspect or worse. As we have noted, AB assumes from the outset that his central idea is valid (pp 1-3, 9, etc), and despite much further discussion this idea is neither challenged nor persuasively supported.

The core of the book is Chapter 2 (pp 61-103), which deals with the writing system itself, and here I focus on this chapter, on the Introduction (pp 1-30), on the brief discussion of linguistics (pp 135-137) in Chapter 4 (which is very interesting but is otherwise only loosely linked with the book's main theme) and on the Conclusion (pp 141-149). In Chapter 1 (and again on pp 61-63, 65-73) AB argues that the script and other aspects of Ethiopian culture spread from Ethiopia to South Arabia rather than *vice versa* as has been claimed. I am not currently in a position to evaluate the evidence on this point (though mainstream scholars seem united in accepting the established view, and some of my criticisms below would also apply to these sections; eg, AB's language is at times intemperate, as in the tendentious use of the term *fabrication* on p 7); and, while this issue is of great interest, its significance largely depends on our view of the main issue, so I do not pursue it further here. Chapter 3 deals with the textual history of the *Book of Enoch*; here, many of AB's arguments seem rather unconvincing to me, but again the matter, though important, is not crucially relevant to the overall theme and need not be pursued here.

### Problems with sources

Turning now to this main theme: two associated problems with AB's discussion involve his use of sources. Firstly, he often uses very old sources, which may of course express outmoded ideas, even where the author was very eminent. One such author is Hegel, discussed on p 65. Hegel was not a linguist, but it is his ideas about language that are here criticised. (In fact, Hegel is a frequent target for Afrocentrists, including MKA on pp 31-35, 119.) Sometimes these older sources are cited in support of AB's ideas (eg, Delaney's work of 1879 (pp 74-75)). (In a somewhat similar vein, AB draws support (pp 5-6) from the more recent work of Gaur, who is not a linguist and whose discussion of writing systems, while useful, is relatively non-technical and in places inaccurate.) Elsewhere (eg, in references to Budge's work of 1928 on pp 39, 59) older sources are set up as targets for criticism in that they allegedly embody the Eurocentric views of biased non-Africans. But in either case uncritical use of such dated material is inappropriate. MKA makes excessive use of dated

sources in a similar way (eg, pp 17, 47, 51-52, 99-100, 120-122, 143-145).

In this context, it is perhaps ironic that AB's negative comments on Hegel (p 65) involve the latter's excessive praise of alphabets. As we have noted, Ethiopic is itself more alphabetic in character than AB allows.

AB's negative assessment of some older sources relates closely to the second of these two problems: his frequent attacks on hostile 'straw men'. Examples include:

- (a) an unreferenced belief that Africans could not invent alphabets/syllabaries (pp 2, 62),
- (b) some nonsensical claims about Greek philosophy cited with reference only to another hostile Afrocentrist commentator (p 12), and
- (c) alleged major distortions in scholarly views on the significance of writing systems (again unreferenced) arising from ethnocentric bias in favour of alphabets (p 24).

AB is, of course, claiming that some non-alphabetic writing systems are much more significant and powerful than is suggested, but again note the irony of his position. It is a pity that AB does not pay more attention instead to the real ideas of the relevant mainstream scholars. In a rather similar vein, MKA creates straw men and 'straw theories': eg, a naïve conceptual separation into East and West which is allegedly important in 'the West' (p 123), a grossly oversimplified version of 'Western' thought on individual *vs* community in the context of human rights and alleged 'cultural imperialism' (p 187). In addition, he unfairly associates contemporary mainstream ideas of proof (legal and scientific) with medieval trials by ordeal and the like (pp 105-106).

### Accusations of bias

Just as damaging, moreover, is the associated focus upon the alleged motivations for the interpretations of history and linguistics which AB rejects. It should be clear, I think, that the issue of the strength of the evidence and argumentation for and against particular theories is independent of that of the motives of those who propose them; even if the latter are, eg, racist in nature, the associated factual or interpretive claims require examination in their own terms. Some 'postmodernist' writers for whom notions such as *ideology* and *paradigm* loom extremely large might disagree; I think them too obviously misguided to take up space here debating the point. But AB's own focus upon such matters - though not as pervasive as that of some of his fellows at Temple - repeatedly interferes with his judgment on the merits of claims, and indeed on the motives of other scholars.

For instance, he criticises (p 27) a number of scholars who have studied writing systems for paying too little attention to Africa because of their alleged Eurocentric biases. There seems no reason to accept this judgment. In particular, AB complains that Sampson in his 1985 book on writing systems (a) identifies Sumeria as the earliest known literate civilisation (but this is no more than the facts - as currently in - suggest; and AB gives no evidence to the contrary) and (b) ignores Africa (but Sampson's book is organised typologically and provides extensive discussion only of cases given as examples of types; in any case, he does refer to African systems as appropriate). In the same way, those who differ from AB on the main direction of influence between Ethiopia and South Arabia are ac-

cused of anti-African bias (eg, pp 42-48). (MKA's work also illustrates this fallacy, notably on pp 25, 31.)

Even where earlier claims do appear suspect, AB's decision to approach them in these terms is surely unfortunate. And, as we will observe, his own case is so faulty that an unfriendly commentator could well consider that AB himself has been led by his allegiances into the acceptance and indeed the development of claims that do not in fact hold up in the face of evidence/argumentation. This would not be unusual; I have encountered similarly nationalist/culturalist proposals from native speakers of languages ranging from Chinese to Latvian, each perceiving their own language and/or culture as crucially unique, as especially well-formed or as overwhelmingly significant for human history.

AB's approach to these issues is also connected with his endorsement (especially pp 12-18) of the 'trendy' (postmodernist) idea that theories or paradigms which arise in a specific culture (as all naturally do) are thereby biased; thus they should not be applied to other cultures, and in fact there can be no genuinely universal theories or paradigms. Examples of this viewpoint in action include the discussions on pp 19-20, 62, etc about the direction of cultural influence/diffusion between Ethiopia and other areas; this is repeatedly treated as a matter of paradigm and dogma rather than as an empirical issue to be decided by careful examination of evidence. (Interestingly, one of the authors cited on p 20 is the fringe archaeologist Hancock; on pp 20-21 there is also some rather uncritical reliance on the Bible as a historical text.)

In MKA's work an overtly relativist position is more explicitly developed, for instance on pp 24-25 (though the subsequent discussion on pp 25-27 is more reasonable), 36 (where he praises aspects of Feyerabend's radically relativist thought), 39, 104-158 - especially 106-107, 110-112, 116-117, 125 (one of a number of places where views contrary to MKA's are dismissed as 'false discourse'), 136-139, 141-142, 145-155 - and 186-193. It should be noted, however, that - as earlier critics of Afrocentrism and other such 'postmodernist' systems have noted - Afrocentrists' relativism is soft-pedalled to the point of inaudibility when the validity of their own most cherished interpretations is in question (eg, MKA's comments on p 107). Furthermore, non-Africans in Africa, such as the French under Napoleon, apparently cannot win: they are blamed either for despising and ignoring African/Egyptian achievements or for studying them and thus 'appropriating' them (pp 127-129). In addition, some of MKA's discussion descends into uncritical treatments of traditional metaphysical ideas (eg, the account of 'soul' on pp 108-109). The sympathetic study of a culture does not require such naïve acceptance of its beliefs - nor should it involve the suspension of normal standards of evidence and argument.

I do not have space here to take issue with this postmodernist tradition as a whole, and will confine myself to two summary comments: (a) the view very clearly does not hold up; (b) it is often, effectively, an excuse for poor scholarship which does no service to the cultures in question.

### Specific claims

To turn to specifics: AB claims that the Ethiopic writing system has the following properties over and above the representation of the relevant languages:

### Numerographic

As AB explains (pp 23, 79), each of the basic  $26 \times 7 = 182$  'syllographs' of the system was at some stage assigned a numerical value in the range 1-5,600. Now symbols can readily be created to represent numbers and other concepts, independently of any writing system; but the use of these particular symbols with these numerical values is, of course, (a) wholly conventional and (b) almost certainly later in date than the use of the characters with their phonological values. Clearly, the values are arbitrarily determined by the conventional order of the characters and by the number system(s) of the relevant languages/cultures. In these respects the written number system resembles the equivalent systems using Greek and Roman letters; it is in no way unique. AB presents no evidence to support his claim (eg, p 65) that Ethiopic is somehow more suited than other systems to this function (or related functions) and was designed with such functions in mind (see also below). But he has already mentioned numerology in this context (pp 9, 65); and in fact the later discussion (notably pp 86-91) descends into an uncritically positive discussion of traditional numerological analysis involving the script. This is of anthropological interest but any claim that it is valid cannot be taken seriously.

### Astrographic

AB claims (pp 23, 86) that the  $26 \times 7$  array of characters represents the 26 seven-day weeks (moon phases?) of a six-month period (on p 86 he introduces the technical notion of an equinox, although his wording is odd). However, he does not show that the array is actually used in this way; and even if it is so used there seems no reason to believe that this correspondence is other than accidental. As AB admits here and elsewhere, the array derives its form from the range and relationship of possible syllables in the relevant languages, notably Ge'ez; a further, unsupported explanation is redundant. (If Ge'ez had had eight vowels, the array would presumably have had eight columns.) In addition, Delaney's dated work on the alleged invention of astronomy (and astrology) by Ethiopians is cited with uncritical approval (pp 74-75). (Delaney's interpretations are often oversimplified and one-sided; note his incomplete picture of African attitudes to slavery and war, which MKA endorses, eg, on p 112.)

### Philosophical

AB also claims that the script (independently of the languages written in it) encodes deep philosophical notions and other knowledge (especially pp 9-11, 15-17, 26, 63-65, 97-101). He provides a discussion of African and other philosophers in early modern times (pp 63-64), and in places (pp 26, 64) even suggests that examination of the Ethiopic script leads one to understand the very definition of what philosophy is (!).

But in the context of Ethiopian history as a whole (during much of which philosophy as such was not practised), the so-called philosophical significance of the script can be accepted, if at all, only in terms of a rather popular interpretation of the term *philosophy*, involving the traditional beliefs and ideas of the peoples using the script. Even here genuine connections between the ideas and the script *per se* are not usually obvious; eg, pp 26, 63, 75-76, 84-86, 97-101 and parts of Chapter 4, where links, often implausible or simply vague/obscure, are drawn between features of the script and aspects of African culture, including the

Ethiopian aesthetic/ethical system known as *se'en*. In places (especially pp 75-76) the discussion appears mystical and also overtly nationalistic. On p 10 a rather different claim is made, to the effect that the script 'contains the major properties of philosophy, for it is critical, systematic, rational and holistic' - but this claim too appears dubious and might indeed be judged obscure.

Other authors' quoted claims about writing systems (eg, those of Hailu on p 80) are equally strange (some are mystical in character). AB uses unusual and sometimes novel terminology (*se'enology, epicology*), apparently so as to suggest the novelty of his ideas, whether these are really novel or not (the matter of their *validity* is, of course, a further issue).

### Linguistic errors

AB does not lay much stress on *linguistic* issues for their own sake; but, since the issue involves linguistics, it may be worthwhile to list some important errors (etc) made by AB in this area. AB's linguistic terminology is often strange and/or obscure (*monovocal/multivocal graphs, polygraph, polyrhythm, syllograph*, etc), suggesting isolation from the linguistic mainstream and/or the desire to appear novel (compare his use of *se'enology* etc). He also treats as special/unique some features of Ethiopic which are in fact very widely shared (eg, p 82 on the notion of the development of scripts through successive types - which is, ironically, decried by MKA as Eurocentric; see below). More specifically:

- p 3 AB seems to accept (uncritically) hyper-diffusionist accounts of the development of human civilisations - especially those formulated by Afrocentrists - and the associated (discredited) methods of comparative reconstruction. Note also p 63 (the etymology given for Greek *sophia* (as in *philosophy*, etc) in terms of Egyptian and Ethiopian words is highly dubious),
- p 72 (some monosyllables from various languages are identified as cognates with no worthwhile evidence; see below on similar etymological nonsense in MKA's book), p 74 (Delaney is again invoked as support for a highly tendentious view of the origin of the Greek alphabet), and pp 10, 24, 62, 94 etc (on alleged links between Armenian script and Ethiopic).
- p 9 AB's use of *evolved* to refer to short-term linguistic change is non-standard and potentially misleading.
- p 11 It is strange to describe grammar as a 'linguistic value' and to claim that 'grammar' can be deduced from the writing system. The discussion on pp 23,
- 93, which appears to relate to this early point, is conceptually confused and suggests an unsure grasp of some basic linguistic notions.
- p 16 The African origin of humanity is hardly relevant to the issues at hand, given the very much later date at which writing systems or any language known today emerged. This confusion is common in such works. MKA makes similar claims, for instance on pp 18, 139 (especially nonsensical), 184-185.
- p 23 The specifically linguistic discussion here is vague/obscure and the facts described are not apparently very striking.
- p 63 The notion of 'perfection' is oddly applied

here; the discussion appears folk-linguistic in character.

- pp 80-86 The account of the origin of Ethiopic symbols (and their names) is not adequately supported by evidence.
- p 91 AB uses *phonetic(ally)* to mean 'phonemic(ally)' (another folk-linguistic element in his work). Also, the claim that a 'syllography' is 'opposite' to alphabet is obscure and, on any reasonable interpretation, overstated.

Towards the end of the book (pp 135-137) AB returns to specifically linguistic matters, drawing on the work of Amsalu and Kagame on idiom. The idea is that certain formal structures in some African languages closely reflect African philosophy. The term philosophy is once again to be understood as referring to folk-beliefs, and given this the theory appears not implausible (though one must beware of hyper-Whorfianism or its converse, and in any case the extension of this theory to Amharic involves further analysis by AB himself); but all this has nothing to do with writing systems (contrary to AB's concluding comment on p 137). Then, on pp 146-147, AB makes a claim about the relation between writing systems and the languages for which they are used (originally introduced on p 23) and the extent to which this is evidence of whether the users of the languages are native speakers or not. This claim is far too sweeping and ignores the possibilities of (a) gross unplanned change over time and (b) deliberate intervention accompanied by metalinguistic awareness (in the latter case, in fact, the *reverse* of the pattern suggested by AB is more than likely).

Other aspects of AB's book which warrant critical comment include: the rather pretentiously formalised 'locational model' (a paradigm) developed on pp 15-17 (this section also involves some of AB's philosophical oddities); some badly non-standard uses of familiar terms, eg, the use of *null hypothesis* to mean 'invalid/false hypothesis' on p 62; the repeated use of vague but positive 'buzz' words such as *holistic* to describe the script (eg, pp 10, 26, 65 etc); and the rather careless duplication of several sentences from pp 64-65 on p 125.

I have learned many new facts about Ethiopia from AB's book, though I take it that few if any of these would be new to Ethiopists.

Other works produced within the relevant tradition display similar features. For instance, Bernal's work on the alleged links between Egyptian and Greek - while more careful and more scholarly than AB's - is carried out within a comparative-linguistic methodology which has long been superseded, for good reasons. (This is true of much 'fringe' historical linguistics, going well beyond Afrocentrism.)

### MKA's theories

But a more striking case involves the linguistic sections of MKA's book, which comes from the same department as AB's. This book deals with Afrocentrism more generally, focusing especially on the alleged close links between ancient Egypt and Black Africa. We have already seen that there are many problems with MKA's book; in addition, it contains very many highly dubious statements about language and related matters, including the following:

- p 15 MKA identifies the indigenous peoples of Australia and New Guinea as African, the result of a very early African diaspora. There is no reason

to accept this claim, which is repeated on pp 99-100 with a reference to a 'fringe' source a century old (a source which MKA rather misleadingly identifies on p 201 through a 1978 reprint, and which he describes on p 136 as 'racist'). The theory proposed here resembles other Afrocentrist diffusionist theories regarding early African influence in Europe, Asia and the Americas (Van Sertima's books are the most accessible parts of this tradition).

- p 28 The etymologies given here are ludicrous and the level of scholarship is fearfully low. Similar nonsense appears on pp 79, 90. Compare AB's naïve philologising as described earlier. (MKA also makes a basic error with a Latin expression on p 49.)

- pp 47-50 MKA's account of Egypt and its ancestral significance for the languages, cultures and 'science' of Black Africa is highly partisan and (to say the very least) contentious. Note also pp 57, 63, 67, 99-104 (with references to Bernal).

- pp 51-52 MKA writes as if ancient sources are (or should be) treated by contemporary scholars as authoritative in the same sense as modern analyses. This arises again on pp 90-92, 120-122.

- pp 72-80 MKA first seems to endorse (pp 72-76) the notion of the development of scripts through successive types, in Africa as elsewhere (as also AB on p 82); but later (pp 76-79) argues that the 'Eurocentric' notion of script is too narrow to cover all relevant African systems (some of which do not really appear to be written language; as remarked earlier in discussing AB's claims, scripts properly so-called must represent languages). Still later (p 80; also pp 136-139), MKA decries emphasis on the development of writing as itself Eurocentric. This seems to be motivated by the fact that focusing on details of script development detracts from his more fundamental claim that the whole idea of writing as crucially important to civilisation is Eurocentric and hence flawed (perhaps he feels that he can argue this latter case with more safety, given the limitations of traditional African writing systems and similar systems of markings; more specific claims about the virtues of genuine African writing systems might founder). But this conflicts with his claim (pp 72-73) that any advanced civilisation must have written language (also, what of the Inca?). Further, MKA's terminology on p 80 is confused; he seems to equate alphabets and writing systems, which indeed conflicts with his analysis on pp 72-76. This entire section is, in fact, utterly confused.

- pp 73-76 The typology of scripts is itself somewhat 'amateur' in style; perhaps under the influence of Gaur (see also above on AB's use of Gaur), the term *ideogram* is used where *logogram* would be more accurate (at least as applied to Egyptian). Genuine ideograms, where found, would not necessarily be associated with particular languages - which would help cases such as AB's - and would probably not qualify as writing. MKA claims (p 76) that Chinese characters are (genuine) ideograms (this is not merely an error of terminology) and thus are indeed language-independent; this is ludicrously wrong, as they are clearly language-specific logograms. He seems thoroughly confused here, treating only phonological scripts (alphabets and syllabaries) as language-specific. The converse of this error ('all language-specific scripts represent sounds') appears on p 118. (It should be explained that genuine ide-

ograms rarely form systems as extensive as entire scripts, for the rather obvious reason that they do not represent specific languages.)

- p 77 The account of the Aroko script is confused and virtually self-contradictory; either MKA or his source is mistaken or confused in at least some respects.

- p 78 MKA seems here to confuse languages with scripts, a truly basic error!

- pp 80-98 MKA presents as factual the (Egyptian) mystical notion of *Ma'at* and many concepts and issues associated with it.

- pp 125-126 The discussion of Indo-European and of ancient languages and their relations is badly confused.

- pp 126-127 Mainstream classifications of cultures are typically based on better criteria than MKA suggests (even where they could be disputed). The same is true of mainstream ideas about history and prehistory (pp 138-139).

- pp 132-136 The account of the uses of the term *negro* and related terms is confused and in places tendentious.

- p 138 MKA is over-optimistic about the reconstruction of very ancient languages using only modern data.

- pp 142-145 MKA uses dated sources and the views of near-'fringe' linguists to support his theories about the relationships between African languages, as developed in particular by Diop, who extended already dubious notions even further (see also above on this influential but highly suspect figure).

- MKA also uses the word *illusio* confusingly; sometimes it is not clear whether he means 'elusive' or 'illusory'.

In respect of their main theses, I must obviously conclude by stating that I do not find these works at all impressive.

I have the most profound respect for the ancient cultures of Africa and in particular that of Ethiopia (even though my own world-view may at times be at odds with what most Ethiopians would believe). Africans and members of the African diaspora are the proud bearers of great traditions which have survived through much discrimination and hardship. Ethiopians, specifically, are the users of an impressive writing system ingeniously devised at a remarkably early date. Such people as these have no need to base their cultural self-esteem on vague, exaggerated and ill-founded claims. Unless Ayele Bekerie and Molefi Kete Asante can provide much better support for their particular claims, neither their fellow Africans (in the broad sense) nor non-African Africanists should be tempted to embrace their ideas.

## Notes

1. References can be supplied on request; contact the author at Dept of Linguistics, Monash University, Clayton, Victoria 3168, fax 03 9905 2294, e-mail: mark.newbrook@arts.monash.edu.au

2. I learned of AB's ideas through his website (found while surfing) and e-mailed him with a view to raising some of the points made here. He referred me to his book, which I bought through Amazon; it has its own page there, like many such books. I then found MKA's book while following up references and surfing (I already knew Bernal, Diop, James, Van Sertima etc). After preparing notes for this article I e-mailed AB again and invited him to respond to my points prior to any attempt at publication. He did not respond to this or to a second e-mail.



# The UFO connection

Greg Keogh

## Introduction

The 1999 ConFest was held last Easter weekend on the shores of the Murray River about 10km from the town of Tocumwal. ConFest was founded in the 1970s by Jim Cairns and Junie Morossi who - in the spirit of the times - proclaimed it to be "an alternative living festival." Detailed information on ConFest and a history of the festival can be found at the Down to Earth website [www.dte.org.au](http://www.dte.org.au).

Several weeks before Easter, Victorian committee member, Belinda Timmins, suggested that ConFest would be a suitable event for a visit by Skeptics. Belinda nominated ConFest because it was a focus point for a wide variety of new age beliefs, and a presence by the Skeptics could be challenging and effective.

In response to the Skeptical calling of ConFest, Belinda, Bob Nixon, Rosemary Sceats and myself (see picture) made plans to pack a large swag of sceptical merchandise along with the ever-popular bed of nails to spend two days at the festival. For me it was partly an excuse for a novelty mini-holiday, and partly to enjoy sharpening my wits in sceptical debates in an unusual environment.

In this article I won't be discussing the fun we had demonstrating the bed of nails and debating spiritualism and the new age with ConFest visitors, I want to describe an amazing workshop I attended, titled 'G3—The UFO Connection'.

## Workshops

Adjacent to the ConFest information tent was a long panel of adjoining blackboards showing a timetable of the workshops running throughout the full four days of the festival (see picture). Anyone was free to compose and host a workshop by entering the title into the timetable. Four large colour-coded tents were reserved for the workshops that streamed from dawn until dark.

Some of the workshop titles were most evocative, and many titles would surely ring alarm bells in the minds of Skeptics. See box for examples.

Conflict resolution & meditation  
 Awakening the true you  
 Tarot for beginners  
 Polygamy/Monogamy info & workshop  
 The Flirting Workshop  
 Non-violent direct action  
 Kundalini love energy massage  
 Advanced Reiki



Belinda, Bob, Rosemary and Greg at ConFest 1999 in Tocumwal

Fans of a certain cult TV cartoon show might be amused to know that someone had filled one Saturday workshop session on the blackboard with the text "A bunch of tree hugging hippie crap." This title remained on the blackboard for the duration of my ConFest visit. To this day I have no idea if it was a real workshop, if anyone attended it, or if it was simply a matter of no one being brave enough to rub it out.

I felt compelled to attend at least one workshop during my visit, but most of the titles made me mentally and sceptically squirm. Finally I found one titled 'G3—The UFO Connection' scheduled for 11–12 on Sunday morning. I didn't feel too uncomfortable with this title, as I'm a bit of a science fiction fan and I have a mild hobby interest in UFO folklore. I had no idea what happened at a workshop, but I felt I might be able to contribute to the workshop if the opportunity arose.

## Gathering for G3

The G3 workshop took place outside the Red Tent where a set of folding chairs and logs had been placed in an informal semi-circle to surround the chair of the workshop host. About 25 diverse people gathered for the G3 workshop, ages ranging from the early 20s to the late 60s.

While waiting for the workshop host to arrive I discovered that the G3 in the workshop title referred to the fact that this was the third in a series of four related workshops that ran each day of the festival. The G apparently stood for 'global' or 'global conspiracy'. Many of the audience had been following the full course of G workshops.

Our workshop host arrived right on time, an amiable chap, his hat and clothes giving him the appearance of a park ranger. I can't recall his name, so I'll simply call him 'host'. The host welcomed the regulars in the audience back for the next in the series of talks and then asked the newcomers - including me - to introduce ourselves. I was immediately to the host's right so I was first to respond with "Hi, I'm Greg." Then the host

said, "Next to Greg is the Archangel Michael." Say what...?

I was sitting next to the Archangel Michael! I thought it was a joke of some kind, but no, the introductions continued around the circle of audience members without anyone batting an eyelid. I was rather amazed to find that the pleasant fellow with the white beard in his 60s sitting next to me was the Archangel Michael. I wasn't amazed by the possible supernatural links, I was amazed because I had already met a totally different looking Archangel Michael in a small theatre in Toorak in Melbourne in late 1995. I began to wonder if angels can 'time share' their spirits.

### G3 Unfolds

Introductions finished, our host said he'd give the newcomers a potted summary of what they had missed in G1 and G2, and then we would learn that G3 contains the most stunning revelations so far. And so the preamble began:

The cabals that secretly control the major world governments are suppressing cancer and AIDS cures and knowledge of extraterrestrial visitors, while preparing us for the coming major change in the future of humanity.

The preamble actually lasted about four minutes and was far more convoluted than the brief summary I've just given. About 30 seconds into the preamble I found I was already suffering from Skeptical Overload Syndrome (SOS) and my brain was starting to clog up. It required considerable self-control to sit through the first minutes of the lecture without interrupting and raising questions. I quite rightly suspected that better claims and tales were to come over the next hour, so I decided to suspend any questions or interruptions until some critical juncture in the lecture, or until some statement of unparalleled absurdity was made.

Over the next excruciating 40 minutes our host revealed more information to the attentive audience who seemed to be swallowing every word in rapt attention.

Early next century, probably before 2012 at the latest, the Earth will move from the 3rd density of matter (where we exist now) to the 4th density level. Most alien visitors live in the 4th and higher levels of density. The change will be catastrophic for those who are not prepared. Signs of the change are already here with increasing wars and earthquakes. Future signs will be increasing numbers of comets. The dramatic numerical changes of moving from century 19 to 20 further support the severity of the coming change. We should be pleased to learn that Australia will play a vital role in the Earth change due to its isolation and peaceful nature linked to the spirits of our indigenous inhabitants.

UFOs can travel vast distances by setting up electromagnetic fields that allow them to flip in and out of the various densi-

ties of matter. The aliens known as 'greys' are here on Earth now walking amongst us. They live a shadowy existence and find it difficult to remain in human form for long periods. They are manipulating world governments to help us prepare for the change. The aliens are at a technological level about 2000 years ahead of ours, and they come from up to nine light years away.

At this point I almost interrupted, as our host seemed to have no idea of how far nine light years is. It is in fact a woefully tiny distance in astronomical terms, and to make things worse, there are only a handful of small and rather dull stars within that distance. Most people are familiar with our closest visible neighbour Alpha Centauri - which is actually a triple star system - but who's heard of our lesser known neighbouring stars like Wolf 359 and Barnard's Star which can only be seen with powerful telescopes? These dull stars are hardly the sort of places we would expect charismatic and super-enlightened aliens to come from.

I later asked for clarification about this nine light years statement, but I became more confused when our host replied "Yes, they come from nine to 350 light years away, all the way to other galaxies." Not only had the goalposts moved, but this weird statement further confirmed my suspicions that our host had no idea about astro-

nomical distances, especially regarding the distances to other galaxies. I'm quite sure that any science-based question I might have raised on this matter would have been shrugged off by a simple non-falsifiable counterclaim that time and space are totally different in the 4th and higher densities of matter.

The aliens have been visiting Earth regularly since 1947 (when Roswell became famous). Humanity is considered to be a gifted species with great potential, which is why we are being given so much attention.

By this time I was starting to get a bit flustered by the endless stream of new age ideas, bad science and speculation. I was also irritated by the predictable appeal to ego where we learn that humanity - and Australia in particular - has vital cosmic significance. Over the last few years I've learned that this ego boost is a common part of new age beliefs and cults.

Our host was not a particularly animated speaker, and it was all starting to drone on too long. I was desperately trying find a polite point to interrupt and ask some questions when I was saved by a young man in the audience who asked "Excuse me, but I'm a bit confused by the UFOs and aliens and how they fit into the rest of it all." This chap didn't look like a ConFest regular weaned on these sorts of lectures, so I can understand his confusion.



Blackboards showing the timetables of workshops at ConFest

Bingo! Here was my chance. I said "Yes, me too. I agree with him. You've been telling us the most fantastic and ornate tale composed of catastrophism, numerology, alternate realities, world conspiracies and the like, now you've introduced UFOs and aliens into it all. Have you got any really good proof of all these claims?"

The host looked surprised for a moment, probably unaccustomed to unsympathetic questions. He paused, and replied "Oh yes, these events have been predicted with certainty by Nostradamus and the famous psychic Edgar Cayce, and a friend at *Nexus* magazine has been analysing and verifying these predictions in great detail." Before I had time to regain my composure and explain that both of these claimed psychics have an abysmal history of predictive accuracy, the host continued "I used to be a sceptic myself, and I'm trained in science, so I can understand how you might doubt these predictions."

So here it was... the first of many predictable claims from the host and one of his ardent supporters in the audience that "I have a background in science" and "I used to be a sceptic, but now I'm convinced." They seemed to fall back on these claims whenever they felt trapped at the sharp end of an argument.

At this point the thread of debate was cut and changed when two audience members interrupted to explain that they had both seen UFOs and believed they were visiting Earth. One middle-aged chap was so absolutely convinced of this that he swore in front of us all that he does not have to see a UFO, he just knows there are real and they are here.

The debate was now starting to become interesting and animated, thankfully, as otherwise the lecture would have been quite monotonous. The chap who asked the first sceptical question now responded that an absolute blind belief in UFOs and aliens visitors was just that, it was a "belief", a kind of "faith." My admiration for the clear thinking skills of this young chap were growing by the minute.

A few more people in the audience added their comments about how they had seen UFOs and believed in them. One young lady said "It's not a matter or proof, there are other things - like your feelings."

I replied, "When you're talking about what is arguably the most significant event in the history of humanity, I need more than feelings, I want rock solid evidence." At this point it was time to ask a classic question disguised as a story. This story/question was composed by my friend Perry Vlahos who is past president of the Astronomical Society of Victoria.

"I'm a member of the Astronomical Society of Victoria," I explained to the group. "The society was founded in 1922 and now has thousands of members all over Australia. We are out watching the skies from dusk until dawn every possible night of the year using our eyes, cameras, binoculars and powerful telescopes. Not one member of the society since 1923 has ever reported seeing a UFO. How can you explain that?"

I could see this left the host rather perplexed and you could feel his mind ticking over, so after a few seconds he turned to the audience and asked them in a school teacher manner, "This is to be expected, can any of you help explain this?" I was then told by various people in the audience that people like me have the wrong state of mind, that we are not sensitive to alien vibrations, and that we will not see anything unless

we believe. I am now convinced that the last suggestion has the most truth in it.

The workshop was now running under its own power as the debate ranged over what the aliens looked like, alien abductions, government conspiracies, closed minded sceptics, etc. After 75 minutes of the workshop I had to make a small wave to everyone and quietly slip away. It was time to pack-up the merchandise and bed of nails, ferry it all back across the Murray River, pack it into the boot of the car and head home.

I never heard how the workshop wound up, and I never got to thank the young man who injected the first sharp sceptical questions into the lecture to get things going. I left the workshop with mixed feelings of confusion, depression, irritation, frustration and anger.

### Summary

Experienced Sceptics will not find my tale too startling and wonder why I bothered to write an article. If you've attended enough new age festivals, psychic fairs or fortune telling stalls, you will find that this mix of unconventional beliefs is quite common. As Steve (Dr Bob) Roberts pointed out to me a few days ago, "It seems that if you accept one set of strange beliefs, most of the others seem to follow quite easily."

I felt compelled to write about the G3 workshop I attended for two reasons:

(1) I have never seen so many unusual beliefs and so much wild speculation condensed into one story in such a short time. I was bewildered by the wide range of new age topics and science fiction folklore blended with an abysmal knowledge of basic science into a rambling storyline presented as truth. About 10 minutes into the lecture I seriously thought I might have stumbled into a creative writing workshop where the host and audience were composing a story for publishing, or perhaps they were writing an imaginary movie script. I'm serious ... the lecture was so absurd that I actually suspected this scenario for a short time.

(2) I was quite disturbed by the way that most of the audience accepted everything they were told with unquestioning eagerness. Often during the lecture the audience members would nod approvingly, add their own small anecdotes of support or ask for clarification on a point like "how do the aliens take human form?" One young man in the audience was seriously explaining to us how he believes the aliens are insectoid in appearance and have large round eyes. I was rather disturbed by the way he was seemingly unable to separate the popular portrayal of science fiction characters from reality.

Finally, I must say that I was most impressed by the friendly atmosphere and understated organisation of ConFest. Although there were thousands of tents and people spread over an area the size of several football fields, there was ample fresh water for drinking and showers, cheap food in the rustic market area, interesting sights and sounds, and everyone there was friendly and helpful. I can highly recommend a future ConFest to anyone who wants to get in touch with their 'hippie' selves and have an unusual holiday. If you're a Sceptic, there's the added attraction of being surrounded by enough new age gibberish to keep your wits sharpened for years.

# The ballad of Tocumwal Town

## Rosemary Sceats

*You're about to be treated to a memorable ditty  
About four of us Skeptics who escaped from the city*

*Read on for the tale of a remarkable quest  
To check out the scene at the hippy ConFest*

*'Twas the Friday of Easter when the wind filled our sails  
And we took to the road with the bed of nails*

*But why did it have to be in the week  
Of the final screening of Jonathan Creek?*

*There was Greg and Belinda, Rosemary and Bob  
Who expected with Nature to commune and hobnob*

*We headed up north to the Tocumwal Fest  
Where with much peace and love we hoped to be blest*

*We were met at the gate by an aged, naked hippy  
'Twould have been such a shame if the weather turned nippy*

*But the weather was warm, the earth was all dust  
The atmosphere heavily laden with lust*

*Get back to Nature, come down to earth  
Of uplifting notions there sure was no dearth*

*We expected to meet earth, air, water, fire  
'Cause after all, this was a tribute to Gaia*

*To connect with the elements seemed the apt thing to do  
If Gaia was present, we'd soon meet her too*

*The element first to be greeted was water  
And crossing the river was something we oughta*

*Have been given adequate warning about  
But the festival brochure had left it all out*

*We took with our gear to the hand-powered punt  
Environmentally friendly, but boy, what a stunt!*

*This wasn't exactly the Garden of Eden  
And we'd brought too much stuff that we thought we'd be needin'*

*We finally got to the other side  
We had to hang on, it was quite a ride*

*The dusty bank was steep to climb  
We'd be better prepared, come the next time*

*On the bank of the Murray where campfires burned  
There unto dust we had all returned*

*The campsite was loud with the music of drumming  
With a bit of relief from some guitar strumming*

*The noise masked the sounds of profuse copulation  
Helping to generate more population*

*The occasional man in a state of undress  
As a sight seemed unwittingly designed to depress*

*On the subject of dress, Belinda was wary  
Resisting temptation to dress up as a fairy*

*The bed of nails was a major attraction  
Everyone wanted a piece of the action*

*We of course had to deal with a handful of loonies  
But at least they didn't include any Moonies*

*The motley assortment of waffle and capers  
Was enough to provoke an attack of the vapours*

*A workshop was run by some UFO freak  
He droned on with such drivel, it seemed like a week*

*Greg soon tired of being sober  
Champagne corks popped, the dry spell over*

*I was hoping to have my aura read  
But my curiosity remained unfed*

*A firewalk was scheduled for Sunday night  
Everyone hoped the sky would be bright*

*But the sky suggested the heavens might burst  
And who'd be the brave soul to walk the coals first?*

*Belinda was game, but we thought we should warn 'er  
That a wet bed of coals could turn into a sauna*

*In an atmosphere so conducive to sharing  
When the downpour arrived, we got way past caring*

*The deluge was on a biblical scale  
There was thunder and lightning, but thank heavens no hail*

*A marriage of elements came down with a thud  
As dry earth and rainwater transmuted to mud*

*Our enthusiasm went on the wane and turned droopy  
If we stayed any longer, we thought we'd go loopy*

*It seemed an appropriate time to depart  
And Bob was transmuting to a boring old fart*

*So we loaded our gear back onto the punt  
First a pull on the rope, then a big loud grunt*

*When we hit the road we had time for reflection  
On the lessons learned from the hippy connection*

*To return to the world of the hard-nosed Skeptic  
Would seem after this a tad antiseptic*

*That, folks, is the story of our flight from the city  
And to miss all the fun would have been a great pity.*



## Political Correxness in Canberra

Barry Williams

On Saturday, May 1, after leaving a Sydney suffering from weather that would tempt even the most hardened Skeptic to reconsider the validity of the Noah myth, it was a pleasure to traverse the Southern Highlands 'neath a sky like an inverted cerulean bowl (pardon?). As we neared our destination, we noticed that Lake George has disappeared again (we are sure it was there when we drove to the national convention in September) and can only assume that the government is behind the mystery - wouldn't be surprised to learn that they have sold it to aliens.

But to get to the reason for the journey. Destination: Canberra; purpose: to participate in *The Correx Forum*, part of the ABC's contribution to the Australian Science Festival and Science Week.

It was all Paul Willis' fault, really. This renegade crocodilian palaeontologist, turned ABC presenter, is the perpetrator of *The Correx Archives* (it used to be called *The Correx Files* until the producers of a certain science fiction TV programme got their legal nether garments into a tangle over perceived copyright breaches), a selection of brief scientific and sceptical items inserted into the JJJ network programmes, in the interest of improving scientific literacy among the young. Paul is also, on behalf of the Science Communicators Network and the ABC, the host of Science in the Pub thereby allowing him to combine the two great loves of his life - science and beer.

Paul had approached us about participating in a public forum based on the *Correx* format, in which the audience would be challenged by presentations of psychic skills, with a Skeptic along to give balance to the show. The forum was conducted in the Science Dome, which must have the most comfortably furnished lecture theatre in the Southern Hemisphere, if not the Universe - luxury of parliamentary proportions.

More than 200 people turned up to have their perceptions challenged, and challenged they certainly were. They were introduced to two people, Peter and Andrew, who claimed to have some psychic abilities, and to this writer, who was to play the role of "boring old Skeptical nay-sayer" (more a case of typecasting than a Logie winning performance). The show was hosted by Paul Willis and his accomplice, Bernie Hobbs, who surprised this writer on first meeting, by being of the female persuasion. (What's the world coming to when women are named Bernie?)

Andrew, who claimed he was "involved in the psychic industry" and Peter, who said "I am a banker who was intrigued by Uri Geller in the 70s and, after a lot of

study found I could do a couple of things", then proceeded to show how they could read the minds of some of the audience (ESP). Andrew had a randomly selected audience member look at a word on a page in a book and then managed to divine the actual word. He also asked some volunteers to select cards from a pack (explaining that he usually used Tarot cards, but would use ordinary playing cards to make the audience more comfortable) and then managed to accurately predict most of them. Peter asked the audience to think of a number he was concentrating on and then asked those who were thinking of the number he had written on a pad to raise their hands. Somewhere between 1/4 and 1/3 of the audience must have received his signals because there was a forest of raised hands. He also demonstrated how, by mind power (PK) alone, he could cause a pencil to roll off an upturned glass, all of which was covered by an upturned plastic fish tank. He then proceeded to tell someone in the audience some remarkably specific facts about their life, which he claimed he was seeing in his mind. He must have been

getting a crossed line, because not one, but *two* members of the audience claimed it was their minds he was reading (more of which later).

In all, it was a demonstration of psychic powers that far surpassed anything this Skeptical old observer has witnessed in a couple of decades of confronting psychics.

Now Auntie's two gimlet-eyed inquisitors turned their attention to the Skeptical perspective. What, they wanted to know, did the professional Skeptic think of the performance? I had to confess to being very impressed by the performance, far less so by the quality of the evidence. I mentioned the Skeptics \$100,000 challenge to any claimant of paranormal abilities to demonstrate their abilities under controlled conditions.

In answer to a further question I replied that what we had just seen was a totally uncontrolled demonstration, and suggested that it was feasible that every individual from the audience who had taken part in the feats *could* have been related to the performers. Although I offered this merely as an example of what I meant by an uncontrolled demonstration,

some members of the audience took umbrage, assuming I was impugning the integrity of the participants.

In seeking to clarify this point, Paul then suggested that in a controlled experiment we would need a panel of highly trained scientists from whichever disciplines were appropriate to the claim. I agreed that we would probably need some scientists, certainly people who understood probability and statistical analysis, but ex-



Peter Rodgers - mystic or magician?

plained that in many experiments involving human activities, an equally important participant would be a professional magician. Given that scientists usually deal with nature, which may be difficult to understand, but which doesn't deliberately cheat, whereas magicians use cheating as part of their stock-in-trade, they are therefore more likely to see through deliberate cheating. This seemed to be a novel concept to Paul, who then asked if there were any professional magicians in the audience, whereupon, to the consternation of some, the two 'psychics' on the stage stood up.

It had, of course, all been a set-up. The two consummate performers were Peter Rodgers, a member of the NSW Skeptics committee, and a colleague of his from Canberra, Andrew Winhurst. These two professional prestidigitators then proceeded to demonstrate more of their skills, showing, without revealing any trade secrets, how to do what they had previously done under their 'psychic' guise, but explaining that they were using their learned and practiced physical and psychological manipulative talents.

Paul and Bernie wound the evening up by explaining that while we had proved that some 'psychic' feats could be duplicated by magicians, we had not therefore proved that there were no such things as psychic skills. Such proof would be almost impossible to obtain, however, this was a demonstration that should encourage people to think about more prosaic explanations for unbelievable events before they accepted the evidence of their uncritical senses. It is a message the Skeptics heartily endorse.

It was an interesting experiment, both from the perspective of the performers and from those of the audience. While discussing it beforehand, it was decided that when the magicians were posing as psychics, they should not get 100% accurate results. It is fairly widely accepted that people in these circumstances are more likely to be convinced by less-than-perfect demonstrations than they are by total accuracy (a strange facet of human nature). Both Andrew and Peter exhibited more unsureness and diffidence during this phase than ei-

ther would show in a professional magic performance, a tribute to their acting skills.

A couple of audience reactions were interesting. When Peter and Andrew, still wearing the psychic hats, took questions from the audience, I was surprised at the willingness of some people to pose very personal queries in front of a couple of hundred strangers (Oprah syndrome?). The questions were professionally deflected, but was easy to see how an unscrupulous performer could have taken advantage. Another audience reaction was even more instructive. When Peter began giving out some very specific personal information (mentioned above), a young woman who worked for the Festival organisers very quickly realised that she was his target and seemed quite delighted. I'm not revealing any magical secrets when I say that Peter was given the information by her boss, who had phoned the young woman's mother to find out a few non-embarrassing details about her family life. It was all set up before the event and was very effective and good fun.

What wasn't planned was that a man sitting a couple of rows behind the target also showed signs of recognition and began responding to Peter's spiel. He seemed convinced that Peter was talking about him, and was prepared to argue that it was him from whom Peter was receiving signals. I was sitting just in front of the two people, and, being aware of what was really happening, took note of the man's claims. Certainly he and the young woman both knew someone with the same (common) name and both were expecting a birthday within the next week (in an audience of 200 the chances of two people sharing a birthday is almost inevitable, the chance of two having a birthday within the same week is a lay down misere), but the really strange bit was that he was agreeing with things Peter had not actually said. It seems that a small trigger is all that is needed to set up a "willingness to believe" functioning in some brains and, given the vehemence in which this gentleman prosecuted his case, it could almost be characterised as "*desperation to believe*".

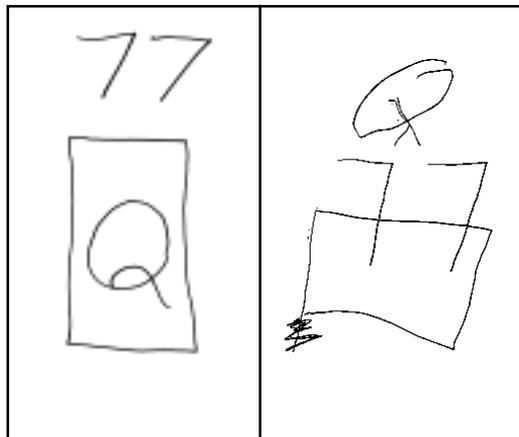
## Evidence for ESP?

These two drawings formed part of the demonstration by Peter Rodgers at the *Correx Forum*.

Three volunteers (by chance they were all women) were selected at random from the audience of over 200. They were asked to come to the front of the theatre and were then handed a large pad and a felt-tipped marker.

Peter asked the first volunteer to write down a two digit number on the pad, being careful not to let him see what she wrote (he was turned to face the audience while this was going on). He then asked the second volunteer to take the pad and draw a geometrical figure near the number (again being careful to keep it hidden from him). Then he asked the third person to take the pad and write a letter from the alphabet.

While all this was going on, Peter wrote on his own, identical, pad with his own marker.



At the conclusion of the experiment, Peter asked the volunteers to hold up their pad and show it to the audience. The drawing on the left is what we all saw.

Peter then turned his own pad around, showing the drawing on the right (we apologise that this one did not reproduce more clearly - perhaps EUTS infected our scanner). Although the two drawings are somewhat different in overall appearance, all the elements of one are reproduced in the other. The audience was very

impressed with Peter's psychic skills.

Later, after Peter had revealed himself as a professional magician, he assured everyone that it was all a trick, but it was very well done. Being in the know, I watched him carefully throughout, and I couldn't see how he did it. More than one celebrity "psychic" has enhanced his reputation with far slimmer evidence. 🌀

# Flat-line schemes

Richard Lead

Everyone is familiar with the following pattern:

1  
10  
100  
1000  
10000

In this example, each succeeding layer increases by a factor of ten, resulting in the shape familiar to ancient Egyptian builders. This humble pyramid drives many scams (chain letters, Ponzi schemes) and dubious business practices (multi-level marketing).

If the above pyramid represents people, the back of an envelope quickly shows the population of our planet is exceeded in the eleventh layer, as 11.1 billion people are required to fill eleven layers.

But the pyramid is an optical illusion. Its shape is due entirely to the decimal numbering system's way of handling digits. Each layer contains ten times the population of the layer above it, yet this ten-fold increase is represented by a single zero. Zero is obviously a powerful non-digit. Imagine how our pyramid will appear in real life. You start a get-rich-quick pyramid scheme and recruit ten people. Stand them in a straight line and stand on their shoulders. Repeat for the third and subsequent layers. When every human on Earth is standing in your pyramid you will balance just twenty metres above the ground, and the line of humans ten layers below you will stretch on each side beyond the horizon. Observed in profile from a suitable distance, your pyramid will be indistinguishable from a flat line, hence the catchy title of this piece. Pedants please note – I know the Earth is not flat. The bottom layer, standing shoulder to shoulder, would circle the Earth some 61 times in each direction. It would contain 4.88 billion people. All getting rich by selling each other soap powder, or whatever it is that you base your multi-level scam on.

Now let's suppose your get-rich-quick scheme is typical, and in order for any given person to make a profit he must recruit ten others into the scheme. It is immediately obvious that for every winner, there *must* be 9 losers, no matter how far the geometric progression continues.

And most people are smart enough to work that out, so scheme promoters use some clever disguises. Let's analyse a claimed money-tree which surfaces regularly in all parts of the world.

### Concord 1

This get-rich-quick scheme operates under a variety of

aviation names – 'Concord,' 'Airplane', '747', and so forth. In Australia it is usually called Concord.

Victims of this scam must believe money can be created from thin air. It works as follows:

- "Pods" of 15 people are recruited, and structured as a pyramid. Each layer has double the number of its higher layer.

- When the Concord commences, the initial three layers (totalling 7 people) of the pod are filled by the scheme promoters, who contribute no cash.

- They recruit a fourth layer, totalling 8 people. Each of these contributes \$2,000 for the privilege of making easy money.

- The person at the top of the pod – 'the captain' – takes these entry fees totalling \$16,000 and departs.

Immediately before his departure the completed pod can be represented as follows. Each letter represents a separate person.

```

A
 B C
  D E F G
   H I J K L M N O
  
```

The pod, now with 14 aviators remaining, splits into 2 new pods – the two 'co-pilots' on the second layer each becomes a new 'captain' at the top of each new pod.

The 7 people in each of the two new pods must now recruit another 8 people. And this is where the cleverness of the Concord scam appears. The pods have separated, and quite probably operate in a different geographical area. When a target is approached for recruitment and given the seductive spiel "don't you agree seven people can easily recruit another eight" the target is not aware of the existence of another pod, an active competitor in the recruitment game.

Assuming each pod is equally successful in recruiting a fourth layer, the first of the new pods can be represented as:

```

      B
     D E
    H I J K
   P Q R S T U V W
  
```

The two 'captains' (B and C) now take their \$16,000 and depart, and the two pods split into four pods of 7 people each. And so it continues, split after split, with never more than 15 people believing they are involved in this clever new way to make money.



The Balloonist with admiring fans at NSW dinner.

Now let's highlight the silliness of it all by consolidating (ie combining) the pods. A person recruited to the fourth layer in pod 1 will work his way up to the top layer of a pod on the third pod splitting. He will be a fourth generation 'captain'. There will be 8 pods containing 120 people. For him to receive his \$16,000, there must be 112 people at levels lower than his who have each contributed \$2,000 and received nothing.

Only 1 person in 15 who joins a Concord can *ever* make money out of it. This means that 6.7% make a profit of 700% (\$16,000 less \$2,000) while 93.3% lose 100% (\$2,000).

At the tenth layer of our consolidated pod, participants standing side by side would stretch for 15km. Yet only 512 people would have received their \$16,000. Because of the clever way the Concord disguises its size, most of these participants would be startled to see the long line of their fellow get-rich-quick hopefuls. All of whom are actively recruiting in a previously unknown competition with each other.

Such schemes are often disguised with innocuous names – The Freedom Club, The Friendly Investors Club, The Success Club, etc. They are, of course, rightly illegal and our consumer protection bodies are quick to prosecute promoters when they learn of a new Concord.

## Concord 2

In the 1960s the governments of Britain and France formed a consortium to build a supersonic passenger aircraft, the Concord (or *le Concorde*, if you are French). Because the engineering was at the bleeding edge of technology, the research costs and delivery dates blew out unacceptably. Calls to cancel the entire project were constant and strident. But the governments persevered, arguing 'if we stop now, all the money we have invested will have been wasted.'

This is now known as 'the Concord Fallacy.' Persevering with a dubious project to avoid admitting that the investment of effort and capital to date was wasted.

And so the Concord consortium continued, and Concord made her maiden flight in 1969. The two governments wrote off the billions spent on research and development and gave their respective national airlines 'free' aircraft. And in the following thirty years, Concord has never made a profit.

There are many variations of the Concord Fallacy:

\* "If we agree with the enemy for any compromise on unconditional surrender, our boys will have died in vain." Great, send more of your boys into the trenches.

\* "I've been offered a great new job, but I've put so much effort into my current job, if I quit now it will all be wasted." Take the better job, Bozo.

\* "I paid \$10 for these shares. They're now trading at \$4 – I will hang on to them until they're back to \$10 and then sell the wretched things." Which is easier – turning \$4 into \$10 with a good share, or with a dog? Sell the shares for \$4 and invest elsewhere.

Scamsters are well aware of this defect in the human psyche and are quick to exploit it. Several previous articles by Harry Edwards in *the Skeptic* have exposed the Nigerian letter scam. When a victim re-

sponds to the unsolicited offer of free money, the Nigerian scamster does not immediately hustle him for large sums. Quite the contrary – the victim is assured that all expenses will come from the proceeds of the theft from the Nigerian government. But after much optimistic correspondence the victim is told of a slight hiccup – an official needs bribing. Can the victim urgently airfreight six woollen suits, size XL, to Lagos to expedite the deposit of the US\$38 million into his bank account? And when the victim has spent his \$3,000 on these suits, the next Nigerian official needs a Rolex. But don't worry – the cost will be reimbursed from the \$38 million. Then there are unexpected lawyer's fees – telegraphically transfer \$50,000 urgently. Then the Central Bank of Nigeria announces a 0.5% fee before it will release the funds – send US\$190,000 urgently. And so it goes. A victim, once parting with a small sum, is hooked into the project and the Concord Fallacy makes it hard for him to withdraw.

## Scams Update

In *the Skeptic* (18/4, p. 19) I briefly reported on an offshore share swindle, using as its bait a free investment newsletter called *International Dateline Report*. The villains operated from a Caribbean tax haven and were ramping shares in worthless companies. In 1988 they scammed US\$150 million from a client base of predominantly professional people who believed total strangers wanted to make them rich.

It is impossible to copyright an idea, and *International Dateline Report* is now flattered by imitation. The Australian Securities and Investments Commission has broadcast public warnings about a number of such groups currently residing offshore but touting for business in Australia. This is illegal.

Because I am on numerous international mailing lists I was recently contacted by one such group. And because I enjoy getting down and dirty with the bad guys, I took the bait. Their investment newsletter was amazing – no contact details were given, not even the name of the publisher. Every share they recommended was set to increase in value ten-fold next week – buy now, buy now, buy now. They claimed to be based in Taipei, but their newsletter was posted from Hong Kong, quoting a 'do not reply to this address' post box. These guys promise to make me a multi-millionaire, and will charge just \$29 per trade while doing so. To date they must have spent \$200 on couriers, sending glossy brochures on various companies they are touting. At one stage they were phoning me – at international rates - every half hour. All to make \$29 per trade. No, sceptical reader, I don't think so either! All I have to do is send my investment funds to their bank account in Gibraltar (a tax haven with impenetrable banking secrecy provisions) and they will make me rich.

People fall for it.



**Annual Convention  
Adelaide  
November 6-7**

## Comedy, cons and comestibles

On April 24, 110 people attended a NSW Sceptics dinner meeting at the Chatswood Club. They were there to enjoy the conviviality and to hear NSW Sceptics treasurer, Richard Lead, speak about financial irregularities, in a talk titled "Welcome to my World".

The evening began with an unexpected treat, as Richard and Josie Lead had brought along their son Peter, a law student who moonlights as a stand-up comic. Peter introduced his father with an hilarious routine he called, "My father's a Sceptic - how was your childhood?" He made much of the unlikelihood of his own birth, given that both of his parents are accountants, putting the audience into a relaxed state of mind for the talk from Richard. We predict a bright future in the law for this young man.

**An excerpt from Richard's talk follows, together with a comment from Martin Hadley, who attended.**

Readers have no doubt seen numerous advertisements for real estate, quoting guaranteed high returns and generally sounding too good to be true. The following is an example a client recently asked me to review. In the advertisement and the glossy 35 page brochure, the following features of a serviced apartment investment were touted:

1. The apartments cost \$248,000 and can be acquired with no money down – the promoters arrange 100% finance at 7.25% fixed for 10 years.
2. The promoters will rent the serviced apartments from the buyers for 30 years.
3. The rent is guaranteed at 7% for 10 years. The rent is increased annually by movements in the CPI.
4. Even borrowing 100% of the purchase price, a buyer will achieve a positive cash flow of \$1,145 per month from the *first* month.
5. Without the buyer contributing a single cent of his own money, the apartment will be paid off in 22 years.
6. The buyer can stay in his apartment for 100 days per year, rent free.

7. The buyer will save \$16,800 income tax in the first year.

8. By buying 'off the plan' the buyer will save \$10,500 in stamp duty on the purchase.

9. The apartments will be completed before the introduction of the GST, providing substantial cost savings.

10. The apartments are located in Melbourne, described in the brochure as "Australia's most exciting city."

11. Interstate buyers are offered a free airfare to Melbourne to inspect the property.



Peter Lead - a chip off the old ingot

All of the projected cash-flows and taxation benefits were verified, and are real.

I invite the reader to form a view of the investment outlined above – would you be interested in it yourself? Readers no doubt agree this is an alluring investment, and with a positive cash-flow of \$1,145 per month, every one of us can afford an apartment. Or two. Or all one hundred and twenty apartments, if the risk of drowning in money is felt to be acceptable.

Yet my advice to my client was not to touch this investment with the proverbial barge-pole.

Welcome to my world – a world of money, and of rapsallions who would separate us from it.

Let's see how the reality of this investment compares to the claims.

### The cash flow

How can you pay interest on \$248,000 at 7.25%, receive rent at 7%, yet make a surplus? Simple – the glossy brochure shows us the first year's cash flows:

Rent	\$17,360
Rates & outgoings	(\$2,069)
Interest	(\$18,356)
Cash flow deficiency	(\$3,065)
Depreciation & 4% building allowance	(\$30,989)
Tax refund	\$16,805
Cash flow surplus	\$13,740

Our monthly \$1,145 surplus is generated by non-cash building depreciation tax deductions. Now here is a simple IQ test for readers: If we purchase a property in 1999 for \$248,000 and sell it for \$248,000 in ten years, will we pay capital gains tax?

Of course we will – ignoring the inflation discount, we will be assessed on capital gains of at least \$130,000. The monthly \$1,145 cash-flow surplus is not a monthly *profit* as the brochure would have us believe. Before 1 July 1997, the 4% building depreciation deductions were “free” – they did not need to be written back on sale of the property. For properties acquired after that date, the deductions so claimed reduce the deemed acquisition cost of the property for CGT purposes. Over the next 10 years we will have claimed \$130,000 in such deductions, and these claims will then come back to haunt us.

The building industry has lobbied hard to have this July 1997 amendment reversed, but strangely the glossy brochure extolling the benefits of acquiring the Melbourne apartment is silent on this issue. This is deeply misleading. Instead of a monthly cash-flow surplus of \$1,145 the buyer is in reality facing a monthly loss of \$125 – and the difference is going on the Bankcard each month.

#### The guarantee

The 7% rental guarantee, indexed each year by CPI, is very attractive and removes the risk of lengthy vacancies. And it is largely illusory. The guarantee is only as good as its underwriter, and a guarantee from a “\$2 company” is worthless. So we need to examine the strength of the guarantor. In this case I did not need to bother. Towards the back of the brochure, on its only unnumbered page, and in a typeface which conspicuously fails to leap from the page, we see the performance guarantee is limited to \$550,000. That is a lot of money, but not when 120 apartments are concerned. That works out to just \$4,583 per apartment. The rent is guaranteed for ten years – \$458 per year! Yet you are predicting \$17,360 rent in year 1.

#### The finance

Vendor finance is fine, but it’s usually for a limited period. What happens when this finance expires? The major banks and mortgage insurers won’t touch many CBD developments, and buyers often end up dealing with loan sharks.

If the commercial banks, currently awash with money, steer clear of such projects, our expectations of riches should be hosed down.

#### Free accommodation

When your punishment for jaywalking involves transportation to Australia’s most exciting city for 100 days, at least you will have free accommodation. That’s what the brochure says. But each day will in fact cost you around \$70. Income tax deductions for rates, interest, depreciation, etc are not available rateably for each day the property is used privately. No doubt \$70 per day is good value, but hardly free.

#### The thirty-year lease

It turns out to be a ten-year lease, with four options of five years each. The owner cannot compel the promoter to exercise these options, and should the apartments prove unprofitable for the promoter, he will simply

walk away after ten years. And then what are you going to do? Manage a serviced apartment yourself?

#### Commissions

The first question we should always ask whenever an investment is presented to us is “what’s in it for you.”

I doubt if even one of the poor fools who invested in the failed Wattle Group, promised 50% interest per annum, would have proceeded had the salesmen disclosed their commissions of 50% of funds invested [see *the Skeptic* 18:2 p. 39].

The promoters of the Melbourne apartments offered me an ‘introduction fee’ of 1% for every client who purchased an apartment. Two thousand five hundred dollars keeps beer in the fridge. But there is a similar Sydney development currently offering 6%. Twenty one thousand dollars has greater appeal. There is nothing illegal in paying such commissions, and nothing illegal in accepting them. It is illegal to accept secret commissions, and I wonder how many advisers fail to make a full disclosure to their clients of such inducements.

I confess that twenty years ago, lumbered with a young family and heroic mortgages, I would have been sorely tempted by such ~~bribes~~ inducements.

Should any reader still wish to proceed with any of these investments, please remember to mention the two magic words ‘Richard Lead’ when you invest, and I promise to take you for an afternoon’s sail on the yacht you have just bought me.

#### Conclusions

These Melbourne apartments may well prove to be a sound investment – time will tell. But the reality is so different to the picture painted in the promotional literature, an abundance of caution is warranted.

I have witnessed some heartbreaking stories of people swallowing the hype and investing in such projects with their ears pinned back. Two years ago I failed to dissuade a client from borrowing \$500,000 and investing in a development near Sydney’s Darling Harbour. His mortgage repayments were \$3,500 per month, but he was guaranteed rent of \$3,200 per month. His first and only rent cheque was \$140, and he is now bankrupt.

Our universe does not rain money on us. There are some extremely generous people out there, but their giving is inevitably directed to charities. Have you ever heard of a philanthropist bestowing benefaction on the world by building an apartment block, and then discounting apartments to the public on a ‘first up, best dressed’ basis through a glossy brochure?

I have one final question, one that I have pondered many times over the years. It is not a rhetorical question.

How do these salesmen *live* with themselves? 

## Following the Lead

A comment from Martin Hadley, *Skeptic* subscriber and barrister.

I very much enjoyed Richard Lead’s speech at the Anzac weekend dinner. I expect that most of us in the audience heard things which resonated with our own ex-

periences. Such as his observation that the most successful con-men (sorry, con-persons) are the ones who appear to be *so* trustworthy. Spot on. They do not talk like Arthur Daly nor dress like Al Grasby. Of all my clients, the most plausible, authoritative and reassuring, is a man who has already done time for fraud, is horribly in debt and has assets of uncertain value. He is facing a big spanking in Court and is manoeuvring me towards acting without payment in advance (I think not).

But the smoothest of the smooth will reap no harvest if they cast their seed on stony ground, which brings us to the second part of the problem - the mental state of the victim.

Richard posed the question: why do so many people fall for investments offering implausibly high returns? His examples included the notorious Wattle Group which dudded in a big way, hundreds (thousands?) of investors, including Federal Police officers and a frail, elderly widow - one of Richard's clients.

So why do such people ask no questions when putting twenty grand or more into something promising 50% returns? However much sympathy we may have for the duddees, the answer in almost every case is greed and/or ignorance.

### Greed

I share Richard's marvelling at how people suspend suspicion when the big dollar is dangled. The exasperation is like that felt by the Year 10 student who struggles to understand how the German electorate fell for the Big Lie in the 1930s.

This quirk of human nature is adroitly exploited by George C Scott playing the con-man who is the central character of the film *The Flim-Flam Man*. His tenet is something like: always cheat the cheaters. The best target is the person who wants a fast, easy buck. They will fix on the prize, like a roo caught in the high-beam. They will not work through the elements of the transaction (as Richard did with his examples) looking for what the *other* person stands to gain.

And where would we be without a dash of ignorance? Some people see that the price of veggies goes up and down. A veggie will be a good buy at some times and a bad buy at other times but it's still the same veggie, more or less. So if there is one investment offering 2% pa and another 15%, well perhaps the second one is just the better buy. It will never occur to some people that the second investment has higher risk. In an extreme case they will not see that a promised 50% return indicates a scam, or a bloody high risk if the investment is genuine.

I hope these observations do not sound high-handed. I do not necessarily blame the ignorant person. At this point, in the spirit of Richard's joke riddled speech, I must pose the question - what's small and wrinkly and hangs out my underpants? Answer: my grandmother. Seriously though, both of mine have illustrated a common problem. They had hard-working, sensible husbands who made all the major financial decisions and who, not unpredictably, keeled over in their 80s. The widows were of at least average intelligence and were not yet gaga, but they simply did not have the knowledge to deploy the wealth which had suddenly become their responsibility.

Greed and ignorance. But life is more subtle than having over here the smart people who don't get ripped

off, and the dumb and greedy duddees over there. For all I know we are surrounded by careful educated investors, who are right now setting themselves up for a big disappointment. (Am I also such a person?)

What do you make of the investor in techno-stocks who says: 'I'm not being greedy, I'm only after a 30% return' (ie 30% pa)? Some will be accepting a high risk in the hope of a high return, while appreciating the chance of ending up with squat diddly. Some such investors, but not all.

Then there are the hordes of people who are haunted by the thought that the big returns are out there, but are available only to a select few: 'I'm sick of working my guts out and getting shafted by PAYE, while the smarties are making the big dough...' These people are not particularly greedy or ignorant. But I think they can be overly anxious for a higher return which makes them easy targets for commission-motivated financial 'advisers' and the fund managers with their selectively presented performance figures and high fees.

Meanwhile, more and more of us know to beware of the smooth con-artist. I think the advertising people are onto this. Look at the employees of BT who give telly testimonials about the company's wise investment practices etc. These dudes have had as long as they want to prepare. They can have an autocue. They can do take after take. Their messages are short and could be learned by heart in five minutes by the average pub patron on the promise of a schooner. But what do we get? More 'um... err... ooh... uerr...' than from John Howard on a bad day.

This can't be by accident. The sort of person from whom BT wishes to extract deposits is not going to be persuaded by the likes of the Dynamo Man (that moustache was false, by the way). The Forces of Darkness have realised that the testimonials must be given by persons who are not only visually, but also aurally, unimpressive. Desired subconscious reaction: 'The bloke is such a dork, he must know what he's talking about...'

### Ignorance

I've mentioned the problem of the old widow. What about youth? Granted, there will always be some seriously thick people around. Jesus is quoted as having said something about the poor always being with us. He probably added under his breath: '...along with plenty of halfwits, like you lot'.

Here is a more subtle example of youthful ignorance: woman friend, bright, 36, continuously employed for the last 12 years on reasonable money (at present \$55K), no dependants, no disasters (divorces, sexually transmitted debts, thefts, dud investments, uninsured flood or hail damage etc), no big holiday splurges. Net worth? Negative. Explanation? Her parents have somewhat pretentious aspirations to rural gentility. To them money is a vulgar subject only talked about by Jews or vulgar people such as bank managers. Hence, money was not to be talked about at home. I'll bet it became a complete taboo when the family business began to falter.

So my friend, like lots of others, was let out into the world after receiving compulsory instruction on all sorts of subjects at school. She even received adequate sex-education but alas, no money-education. One day that will change, though I concede that the exact opposite would be even more chaotic.

# The genesis of a web site

John Stear

My web site *No Answers in Genesis!* (NAG) was launched on September 29, 1998. To the best of my knowledge it is the only Australian site dedicated to refuting creationism, and many of the contributing authors are Australians.

NAG has proved quite popular, having received more than 15,000 visits in just over seven months. Of course the number of visits don't necessarily indicate the success or otherwise of a web site, and it would be extremely difficult to gauge the extent of the influence sites like mine exert on those who embrace creationism. One thing is certain though, most adult creationists have gone beyond redemption. The best we can hope for is that the scientific evidence for evolution, found on many web sites, occasionally permeates a younger not yet captured mind, or influences a responsible parent in the choice of their child's schooling.

While the site visitors are merely numbers on the hit counter, the site guest book has taken on a life of its own. It has become a forum for correspondents to argue among themselves over the intricacies of the evolution/creation debate (some, of course, are praying for me on a regular basis). My guest book proved irresistible to Australian creationist and employee of *Answers in Genesis* (AiG), Jonathan Sarfati, who on March 4 this year launched a bitter attack on NAG, Australian Skeptics in general and several contributors to NAG. Sarfati referred to NAG as "a scurrilous little site". Praise indeed and a sure indication that AiG is taking the site seriously. Sarfati's rant and some responses can be found at [www.onthenet.com.au/~stear/sarfati'srave.htm](http://www.onthenet.com.au/~stear/sarfati'srave.htm).

Another visitor to my guest book who I will hereafter refer to as "Fred" was so incensed by what he perceived as the "evolutionary bias" on my site that he wrote:

... if you can provide a single piece of irrefutable [sic] evidence that evolution is a provable, demonstratable [sic], or reproduceable [sic] truth; I'll give you \$1000 US [sic]."

I was amused but nothing more by this offer, but on advice from a Skeptic who knows about such things, I decided to call Fred's bluff and accept the challenge. On further advice from my Skeptic mate (thanks, Stan) I informed my adversary that:

As a sign of good faith, you must lodge the US \$1,000 with an independent third party. I must receive a notarised confirmation from this stake holder that unencumbered funds are available and that he has the unfettered discretion to forward them to me.

In return "Fred" insisted that the focus of the debate should be to:

Prove beyond reasonable doubt that the process of evolution is the only possible way the universe as we view it came into existence. Only empirical evidence will be accepted.

Not a very good start as I pointed out to Fred in my reply. The question of how the Universe came into existence has nothing directly to do with biological evolution, I told him. But I was prepared to debate him on the basis that:

Evolution is a process that results in heritable changes in a population spread over many generations.

Now that we had pinned down the basis for argument I expected the debate to proceed to its logical conclusion, but the creationist mind doesn't work in quite that way. The next message I received from Fred was posted to my guest book, here is part of it:

I have a fundamental problem. He [John Stear] did declare to me that he was a gradualist. Most evolutionists are [surprise, surprise!]. I cannot accept any evidence based on the gradualist perspective because of dozens of geochronometers and astrophysical phenomenon [sic] that cannot be observed or have occurred if the world is more than a few thousand years [sic]. The biggest presupposition in my mind is the opinion that the world is old enough to have allowed for the gradual change in kinds of animals ... You will not find the entire geologic column anywhere that I know of ... There is nothing to indicate that the age of the earth is more than a few thousand years old. I refuse to enter into a debate on Genetic Evolution until someone can find a geochronometer that proves that the world is billions of years old.

Creationist chicanery in action. I decided however to give him a little more rope so I posted the following reply:

I don't know if you realise it but you have now reneged on the partial agreement we had. Did you imagine that a debate between an evolutionist and a creationist would be other than on the basis of gradualism? That is tantamount to agreeing to debate whether the Earth is round or flat and then insisting on proof that the Earth is not square! The proof for an extremely old Earth is overwhelming, but if I produce the required proof, ie, rebut your arguments one by one, can I trust you not to move the goal posts again?

Fred responded:

If you can provide in this guestbook several, let's say four, cosmological, irrefutable evidences [sic] that the earth is more than a few thousand years old; and you can refute the 12 that I have listed in record 104 [on my guest book], then I will enter into our challenge. Until you can fix your flawed presupposition, I cannot accept your logic.

I replied along the lines that I was not prepared to waste my time with his "wish list" of assumptions. I offered to answer his one allegation that "You will not find the entire geologic column anywhere that I know of." I directed him to three web sites showing that the entire geological column is found in 27 basins around the world, piled up in proper order.

The debate seems now to have stalled and Fred seems to have lost interest (or confidence) in his "challenge". But by engaging in the subterfuge so typical of creationists he has placed the evolution/creation debate exactly where it should have been all along - on the central questions of the geological evidence for an old Earth, and the evidence or specifically the lack thereof, for a "world wide flood".

Without such a flood the creationist argument that the Earth is only 6,000 to 10,000 years old disappears.

If Noah's flood didn't occur then Noah is shown to be myth: it then follows that the *Book of Genesis* is myth and, because the creationist case rests entirely on the *Book of Genesis*, their case collapses like a house of cards.

What then remains of their central belief in a young Earth considering that the evidence for the appearance of the geological column around the world is extensively documented?

I have grouped together on NAG's home page a few of the most compelling essays on the subjects of the proven existence of the geologic column and the proven mythicity of the flood of Noah:

<http://www.talkorigins.org/faqs/faq-noahs-ark.html>

<http://www.onthenet.com.au/~stear/worldwideflood.htm>

<http://www.onthenet.com.au/~stear/geologicalcolumn.htm>

<http://www.geocities.com/Tokyo/Temple/9917/flood.html>

Creationists have a number of pet beliefs which they doggedly cling to despite the overwhelming evidence to the contrary. Consider their repeated claims that:

- evolution has never been observed;
- evolution violates the second law of thermodynamics;
- there are no transitional fossils;
- the theory of evolution says that life originated, and evolution proceeds, by random chance;
- evolution is only a theory, it hasn't been proved; and
- evolution is merely another religion and therefore requires *belief*.

The creationist hierarchy has demonstrated a willful disregard for the integrity of scientific endeavour. Their continued and dogmatic espousing of these and other spurious arguments in their literature clearly indicates that they have no intention of examining any of the evidence in a scientific way. They do, however, have every intention of continuing to mislead their followers by instilling in them a mistrust of the scientific method, leading to a totally flawed understanding of the simplest processes of biological evolution. This has to be so because their whole philosophy is based on a book containing not one single scientific fact - a book of myth.

None other than one of the founding fathers of creationism, Henry Morris, in *Biblical Cosmology and Modern Science* (1970) p.32-33, admits that:

... the main reason for insisting on the universal Flood as a fact of history and as the primary vehicle for geological interpretation is that God's Word plainly teaches it! *No geologic difficulties, real or imagined, can be allowed to take precedence over the clear statements and necessary inferences of Scripture.* [my emphasis]

Morris also stated in the first paragraph of *Scientists Confront Creationism*:

It is precisely because Biblical revelation is absolutely authoritative and perspicuous that the scientific facts, rightly interpreted, will give the same testimony as that of Scripture. *There is not the slightest possibility that the 'facts' of science can contradict the Bible.* [again my emphasis]

So, despite the plethora of "scientific" articles written by creationists, some with scientific qualifications, which appear in *Creation Ex Nihilo*, and in their inap-

propriately named *Ex Nihilo Technical Journal*, it's clear they will never accept the evidence.

Creationism is opposed not merely because creationists' arguments are without foundation. The methods used by creationists over the years have been cause for considerable disquiet as they are often less than honest and might even be described as unethical.

For instance, there are many instances of creationists using bogus scientific qualifications. Doctorates of divinity are common and inexpensive to purchase and PhDs granted by unaccredited "colleges" with no authority to grant such qualifications are widely touted in an attempt to give credence to creationists' unscientific twaddle.

Another favourite creationist ruse is the frequent use of the selective quote. I've lost count of the number of creationist web sites that continue to selectively quote Charles Darwin. The quote most often abused is the one about the evolution of the eye. We all know the one:

To suppose that the eye with all its inimitable contrivances for adjusting the focus to different distances, for admitting different amounts of light, and for the correction of spherical and chromatic aberration, could have been formed by natural selection, *seems, I freely confess, absurd in the highest degree.* [usual creationist emphasis]

The part they *never* include is:

... Yet reason tells me, that if numerous gradations from a perfect and complex eye to one very imperfect and simple, each grade being useful to its possessor, can be shown to exist; if further, the eye does vary ever so slightly, and the variations be inherited, which is certainly the case; and if any variation or modification in the organ be ever useful to an animal under changing conditions of life, then the difficulty of believing that a perfect and complex eye could be formed by natural selection, though insuperable by our imagination, can hardly be considered real. How a nerve comes to be sensitive to light, hardly concerns us more than how life itself first originated; but I may remark that several facts make me suspect that any sensitive nerve may be rendered sensitive to light, and likewise to those coarser vibrations of the air which produce sound."

*The Origin of Species* (Chapter six *Organs of extreme perfection and complication*).

There are many more instances of selective quoting, quoting out of context (particularly the misquoting of long dead scientists) and out and out fabrication among the creationist literature.

Creationism is a blight on education. Not only do creationists, who pollute young minds with pseudoscience, have a lot to answer for, some teachers of science inexplicably believe that creationism is a viable alternative to evolution (it's only a *theory* you know!) and are more than willing to aid the creationist plan by presenting it as such. This is happening now in Queensland state schools and, for all I know, in other states. To quote a science teacher and fellow Skeptic who is actively engaged in fighting for the abolition of creationism in Queensland public school science classes:

Children have been raised on these creation myths and find it very difficult to conceive of anything else as a possibility. It is a good deal harder to discard than Santa because its rejection has been imbued with guilt and punishment.

*No Answers in Genesis!* can be found at - [www.onthenet.com.au/~stear/index.htm](http://www.onthenet.com.au/~stear/index.htm)



# The French connection

Harry Edwards

Having sprayed many an astrologer and numerologist with scepticism over the years, I've come to the conclusion that no matter how many you eliminate, they re-emerge like weeds.

Readers may recall my article (17:3, pp32-37) in which David Joseph Lam, alias Sophros the mathematical genius, and Natalie Bardot of Golden Astral Numbers were mentioned. Both were selling "lucky numbers" and were in some way connected with a mail order firm by the name of Garmer Home Shopping Ltd. I have now been advised by the Victorian Casino and Gaming Authority that Garmer has gone into liquidation.

I'd hardly had time to slip my spray gun back into its holster, when out of the blue I received a five page letter from Madeleine Mochot of Cannes, France. Rather an odd address I thought, given that the letter was posted on the Gold Coast and bore the address – Suite 406, 15 Albert Street, Broadbeach, 4218. A Gold Coast Skeptic checked the address - Suite 406, 15 Albert Street, Broadbeach, was a mailbox.

Like other astrologers, numerologists and psychics before her, Madeleine had come across my name by "pure chance". It was on a file brought to her attention while investigating birth information of the rich and famous in Australia. (That's two wrong out of two for a start.) Being psychic in the extreme (her words) she put her hands on my file and felt a little buzz (a Skeptic's negative vibrations?). Entering a trance she produced a vision and saw me smiling (read grimacing).

... flying through the air on a sun-lit cloud of dazzling gold light. The fiery golden color, I knew had to do with material abundance and soaring wealth. I was impressed with all the gold and dazzle. Hadn't seen anything like this in my 17 years of professional psychic concentration workouts going one-on-one with a client. Suddenly you were falling through the air, I called out to you but you didn't hear me. Abruptly the picture faded out.

Reading between the lines of this pathetic piece of piffling prose, I gathered that our munificent Madeleine was about to make me an offer she thought I couldn't refuse. Yes ... for \$48 she would send me my personal horoscope and Psychic Counselling Re Future. The latter I deduced as being the latest terminology for "lucky numbers". Of course I would have to hurry as the big event only happens once in 77 years and mine was due in 62 days.

In view of the fact that on December 9, Richard Lead and I were scheduled to give talks on scams and ripoffs at the Southport Yacht Club, I replied to Madeleine's entreaty as follows:

Dear Madeleine,

This letter relates to an event in 32 days. To be precise, 7 pm Wednesday, December 9, at the Southport Yacht Club. Be there – the event could change your life!

Harry Edwards, Investigator, Australian Skeptics Inc.

In my talk at the yacht club I made specific reference to Madeleine Bochot – I hoped she, or her Aus-

tralian representative, was in the audience. If she was, it fell on deaf ears as nearly three months later (and weeks after my 62 days had expired) I received an identical letter making exactly the same offer.

## Benevolence

I never cease to wonder at the benevolence of those who supposedly possess paranormal abilities. Those who want to help others down on their luck, who are keen to pass on the secrets of their success, and promise instant wealth and future happiness. "Internationally known astrologer and psychic" David Phild, is the latest to offer me happiness and good fortune, love and affection and of course those ubiquitous lucky numbers ... and all for \$49.90.

The personal commitment from Phild offering me "everything and anything I desire" arrived in an envelope bearing a London address, the enclosed page of testimonials were all from French citizens and with a return address in North Hobart, Tasmania.

Mr Phild's 16 years of devotion to helping others find love, money, health and happiness was rewarded in 1996 when he was awarded the honour of being admitted to *Le Mérite Et Dévouement Français* (French Merit and Devotion Association). Whether the diploma pictured among the testimonials was genuine and awarded for "psychic" services is open to conjecture.

So who is David Phild and what is his "special" gift? According to the advertorial, Phild is "known throughout the world" and was taken under the wing of an African clairvoyant/healer/magician who shared with him her knowledge of white magic. She knew he had a rare gift – sensing events to come and the faculty of helping others. About his gift this remarkable seer has this to say,

I make no miracles. I simply have a gift and the knowledge to call on supernatural powers so that those who call me can get whatever they ask for.

Consider the second half of the sentence - the gullible may indeed get what they ask for but not what they expect. Later in his spiel, Phild reinforces this claim by revealing his secret – he can harness "the Great Cosmic Force" to help others. This invites the same question asked of all those claiming similar powers – why are you selling your extraordinary talents for a pittance and not solving the world's more pressing problems?

What decided Mr Phild to contact me? Unlike Madeleine who had come across my name while researching the rich and famous in Australia, Phild simply mentions in passing that he "only rarely comes across a case like mine". (Probably from a sucker list.) Like Madeleine, however, he also saw "vibrations shining around me".

The sales pitch follows a time-worn format, in this instance in the form of a questionnaire, the answers to which would obviously be answered in the affirmative by the majority. The questionnaire was headed "From the following examples of wishes, which ones would

Continued p 39 ...

# When is a prediction not a prediction?

Bob Nixon

Can you predict the future? Let's face it, no one can. If anyone claims to be able to do so you should avoid him or her entirely.

How many of you Skeptics would disagree with that statement? Anyone? I'm sure there's not a one among you who has just choked on his morning toast. Now, chew and swallow before you read on, for I must tell you the citation for this statement.

The gentleman's name is Ray Webb, the editor of *Astrological Monthly Review*. I wrote to Mr Webb in December, to raise a couple of points with him regarding the contents of his magazine in the context of the above statement.

You see, *AMR* prints articles that I find incompatible with the editor's statement that no one can predict the future. Take for example the article suggesting that the tidal wave that struck New Guinea was to be found in the stars. Sadly the message became clear only after the event, but the point is made all the same. This *post-hoc* analysis, particularly of high profile events is, to my mind, one of the nastier aspects of divination. All too often such events are seen in the runes or the cards or, in this case, the stars, only when the events have passed into history, often taking many unfortunate people with them.

In articles like these I often talk in terms of "my favourite". Such a term would be inappropriate in this context, but you'll understand what I mean when I tell you about John Tatler's offering in the December 1998 issue of *AMR*.

On September 3, 1998, a McDonnell Douglas MD11 aircraft on a flight from the United States to Switzerland, crashed off the coast of Canada. All those on board, 229 people, perished. John Tatler, in a particularly distasteful example of how to make anything fit a set of facts after the event, uses a very weird set of numerological gymnastics to arrive at the conclusion that all this could have been seen in advance.

Normally, in articles like this one, I'd say something like "I won't bore you with the details"; not this time. Tatler's methodology is so spooky as to be worthy of retelling.

M is the thirteenth letter of the alphabet, and leads the two letters. It therefore points to the demise of males on the planet.

If we combine the M with the D (the fourth letter) we get 8. This number symbolises the quest for money and power – greed.

The feminine 11 is the number of the matriarch and the time for the rise of the female. Eleven, Tatler assures us, is the master in this series.

Combine 8 and 11 and we get 19. This suggests insularity and selfishness, but it's also the number of this century. It's about "self first and self last, it is a number of Karma".

Then we're reminded that this tragedy occurred on the Chinese lunar date of the thirteenth day of the eighth month. (Those numbers, 8 and 13 again – get it?)

The thirteenth day of the eighth month, Tatler continues, is in itself suggestive of the demise of material-

ist society on our planet. Thirteen signifies great destructive change, while eight suggests materialism. The year 1998, or the 9 therein, signifies the end of an era.

The flight number was 111, the sum of a line in the ancient magic square of the Sun. The sum and signifier of the square is 666. (Is there anyone out there who didn't think we'd get to that number sooner or later?)

Then we get some nonsense about evidence for the magic square of the Sun appearing in ancient structures (and you can probably guess which ancient structures we're talking about. People like Mr Tatler seem to know only a few.).

And then we get to the last bit of this little stream of consciousness. In Tatler's words "Under the tragic circumstances of this fateful flight, there can be little doubt, it is certain that the time of the Anti Christ, as foretold in Revelation, is upon us."

In one last burst of mathematical blinding light, Mr Tatler points out for us that 229 (the number of passengers killed) sums to 13.

That's it. That's how you do numerology. As far as I can tell you pluck a number, any number, out of the air and fiddle with it until you make it do things that seem like they mean something. Had it been necessary Tatler might have given us the number of crew aboard, or the number of gallons, litres or pounds of fuel aboard. We might have learned that an MD11 has three engines, or two wings.

In my letter to Mr Webb I asked, "Does *post-hoc* analysis like that described in the articles regarding the tidal wave which struck New Guinea and the tragic crash of an MD11 aircraft off Nova Scotia demonstrate that, had the analysis been done prior to the event, these events could have been predicted in advance? If so, are you aware of any astrologers or other diviners who are examining the possibility of similar events? If not, what benefit can be derived from examining events in the past to validate a divination method?" Mr Webb's reply, polite and friendly in tone was:

Most *post-hoc* analysis can be of benefit. An astrological analysis is simply interesting to people who are hobbyist astrologers. I cannot imagine that the time will ever come when we will be capable of eliminating disaster from our lives through astrological or any other type of forewarning. History clearly shows that the difference between success and failure is frequently only a matter of seconds. After any major event there are thousands who claim to have been able to see it coming - extremely few of them are reputable astrologers.

It is, to my mind, a fair answer. Mr Webb suggests that a reputable astrologer would never claim to have seen an event coming, and to be fair Mr Tatler does not make this specific claim. Instead he uses the deaths of 229 people to validate the methodology by which he predicts the end of the world. I can only assume that's what he means by his reference to Antichrist and Revelation. I suspect that even an easy going chap like Ray Webb would concede that this is indeed a prediction of the future. Mr Webb suggests that *post-hoc* analysis is of benefit to the amateur astrologer, although I'm still unsure as to why this might be, other than it does serve

## Notice

to validate the methodology to anyone whose capacity for critical thought is deficient.

Keep in mind the quote I used to begin this article as I tell you of some of the regular features appearing in *AMR*. Would predicting the weather (using astrometeorology, according to Mr Webb's letter) be "predicting the future"? Mr Webb claims to be able to do just that, months ahead and for any part of the world. In his letter he claims that he receives many complaints when these predictions are incorrect. I can only imagine that among his readers there are some who use this column to select appropriate dates for outdoor events. I'd be a little peeved too, if my wedding was rained out or a camping trip coincided with an unseen cold snap.

Perhaps "predicting" is the wrong word when we're talking about the movement of the stock market. Maybe I'm being over picky when I suggest that Stephen Archer's column headed "The Astrology of Winning" seems to my clouded mind to be suggesting the winners of horse races. In his letter, Mr Webb states clearly that "This is a wonderfully entertaining and exciting feature that has enjoyed outstanding success since the early 1940s", although he does so without including any evidence for such a claim. I wonder if the reader would chastise me for considering the words "Forecast for December 1998" at the top of every star sign's column as being suggestive that what is being offered is a prediction. What of "The Year Ahead for Sagittarius"? Are these not predictions? This particular column is written by Mr Webb himself, so I imagine that I'm completely mistaken. I can therefore only assume that "you can expect your earnings to fluctuate" and "Throughout the year ahead you social life will be running at a hectic pace" just seem like predictions because my addled mind is confused.

(Regular readers of *the Skeptic* will, of course, understand what method Mr Webb is using here, but I suspect that his own readers are not so familiar with the methods used by astrologers and other diviners).

Ray Webb's polite letter is not sufficient to answer the arguments appearing in his own magazine. Clearly the authors, Mr Webb himself included, offer predictions of the future, or offer evidence suggesting that such predictions are possible by "predicting" after the fact.



### ... French connection from p 37

you most like to see come true very soon?" They included the usual gamut of human desires in respect of health, wealth and happiness and protection from hostile influences.

Having answered "yes" to all thirteen questions, non-critical thinkers, persuaded that Mr Phild could make their wishes come true, would then reach for their cheque-books to assist him in achieving his *own* personal ambition – that of getting rich at the expenses of the gullible with promises he cannot fulfil.

Of course no offer by an astrologer, numerologist or psychic would be complete without the obligatory "free gift". Mr Phild conforms by offering "a magnificent Good Fortune amethyst" (certified and appraised by a gem laboratory). There is no guarantee, however, that the one you get will be the same one certified and appraised by the laboratory, or indeed that the laboratory in question is reputable or for that matter, even exists.



# National Convention Adelaide November 6-7 Adelaide Convention Centre

You are invited to attend the first Skeptics Annual Convention to be held outside the southeastern corner of the continent.

Recently confirmed speakers are:  
**Ian Plimer on the Geology of the Greenhouse,**  
**Paul Davies on Aliens on Our Doorstep: Some Thoughts about the UFO Phenomenon**  
**Carol Oliver on the Search for Extra-terrestrial Intelligence.**

Other topics will include:  
**Year 2K - Is there still time to panic?,**  
**Skeptical Sacred Sites of South Australia,**  
**Alternative Medicine.**

During the conference there will be a **SA wine tour in one room**, conducted by Brian Miller and if there is sufficient interest we will also be arranging a Barossa Valley tour.

And don't miss the:

**Annual Skeptics Dinner, with renowned author, Peter Goldsworthy, as speaker.**

**Book before August 31 for special rate  
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at a modest \$40.**

The Conference Internet web site is now operating. You can use the site to arrange accommodation or airfares including the special conference airfare with Ansett Airlines at:

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

or the Australian Skeptics site at:

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

For further information please see the web-site or contact our Conference Organizer and President of Skeptics SA

**Michelle Foster:**  
**email [michelle@timeagain.com.au](mailto:michelle@timeagain.com.au)**

**Phone 08 8232 4398;**  
or Secretary of Skeptics SA

**Laurie Eddie:**  
**Phone or fax on 08 8272 5881.**

# Dialogue with an alien intelligence

Barry Williams

We receive a large volume of e-mail over the Internet. Along with the genuine enquiries comes a bit of plain abuse. We thought readers might appreciate this fairly typical exchange between a UFO believer and the editor, which took place during the course of the last year. It demonstrates the difficulties that can be experienced in conducting a rational dialogue with someone whose mind is fully and irrevocably made up.

(Readers of a sensitive disposition are warned that some of the language used is a trifle fruity. Readers of a pedantic disposition should have a field day. The incoming mail is distinguished by *italic type*.)

From: xxxxxx [SMTP:xxxxx@xxx.net.au]  
Sent: Tuesday, February 17, 1998 2:17 PM  
Subject: You guys suck!

*ufo's are real and are visiting us so stop dsipelling scientific information.*

I've been warning the other Skeptics that too much dsipelling will send them blind, but they won't listen to me. My other theory is that dsipelling without a licence can lead one to the belief that ufos are real and visiting us. However, we promise to stop as soon as we work out what dsipelling means. I sincerely hope that this has helped you with your problem.

Barry Williams  
Editor  
*the Skeptic*

*dont be a smart ass u know what i mean*

I most assuredly do not know what you mean. I can guess that you were trying to say "dispelling", but I wasn't really having a shot at your typo (anyone can make a typo). But dispelling doesn't make any sense in your context. You can dispel (drive away or disperse) someone's fears, you can dispel a myth, you can even dispel a scientific hypothesis, but you can't dispel scientific information. We can dispel "myths" about UFOs, but we can't dispel UFOs, if they exist, or even if they don't exist, come to that. (How could you dispel something that doesn't exist?) You can't dispel elephants either, because the "driving away" definition doesn't apply in that context, otherwise you would have people dispelling in their cars. So your entire posting makes no sense. Would you care to try again?

*have u ever actually looked at serious amounts of information on ufo's??? This is what I mean by dispelling, not even looking at the information and just saying no there aren't any ufos!!! do u believe in god??*

Yes, I, and many other Skeptics, have looked at quite a bit of information about UFOs. What we see are plenty of cases of people seeing things that they don't understand. What we also see are textbook cases of the human capacity for self delusion. We even see cases of

blatant fraud (the "alien autopsy" tape for instance), and plenty of straight lies and half-truths from people who write books and produce TV pseudo-documentaries about UFOs.

What we haven't seen is any evidence that UFOs are alien space ships, or intrusions from another dimension, or any of the other notions that have currency within the UFO movement from time to time. No physical evidence of any kind that would lead one to even suspect that sightings of unidentified aerial phenomena should rationally be attributed to alien space ships. We'd love to see some such evidence, but it just ain't there.

So we're not just "saying there aren't any UFOs" because clearly there are. What we are saying is that without any evidence that UFOs are alien space craft, there is no logical reason to suppose they are.

And what has god got to do with it?

*In your letters back u said there is no physical evidence, what about ground traces, radar tapes, crop circles and of course cattle mutilations*

OK, let's look at this "evidence".

Ground traces: You find some marks on the ground, or traces of fire or something similar that you can't explain. Now by what process of logic do you travel from "marks I don't understand" to "alien space craft visiting Earth"? What evidence exists that says "The only possible explanation for this is that an alien space craft caused it"? In every case that I have heard about, that explanation is only proposed by someone who already has a semi-religious (ie based on faith) belief that space ships *are* visiting. It wouldn't convince any *objective* observer for a minute. There are dozens of possible explanations for these traces - alien space ships, in the absence of any other evidence, is not among the top ten.

Radar Tapes: I'm not sure what you are talking about here. I know a bit about radar, I know what it can and can't do. Do you claim there are radar records that trace an object's flight from somewhere in deep space, all the way to a landing on Earth? If not, what?

Crop Circles: I presume you inserted this one as a joke and I won't waste any more time on it.

Animal Mutilations: Nearly as laughable as the previous one. Again, what makes you think that animal corpses, with certain parts missing, can only (or even best) be explained by visiting aliens? What logical path do you follow between your observation and your conclusion? Assuming for a minute that aliens are visiting us, what possible reason could you imagine they would have for removing the udders, lips and anus from a cow? Wouldn't it be simpler for them to secretly land near an abattoir at night and go through the rejects bin? You may have produced some evidence that some odd things happen, but none that suggests that aliens are visiting us.

*What's your view of Roswell? I am just asking because most people who believe in god dont believe in ufos because  
a) they are blinded by there stupid beliefs or  
B)been conned from a very young age!!!!!!*

Have you seen any research that confirms this, or is it just your feeling? There are those who would say that some people have replaced a belief in God with a belief in UFOs and that neither belief can be supported with any evidence of the existence of the object of belief. Or, simply, that UFO belief is just another religious belief. I would tend to agree with that position.

*Well ok lets go.*

*Physical ground trace evidence: There are physical evidence of radiation burns on the ground and even on certain close encounters of humans*

You could go to Maralinga and find evidence of radiation burns on the ground. Does that count as evidence for alien space ships? You can go to Rum Jungle and find radiation traces, but that used to be a uranium mine. You could once have gone to a building site in Hunters Hill and found traces of radiation on the ground. It was the site of a clock factory, where they used radium paint on the clock hands. (It's been cleaned up since then.) A dried up lake bed is evidence of extraterrestrial radiation, solar radiation. Not an alien in sight on those sites. In the absence of any other convincing evidence, radiation traces are not evidence of space ships.

*Radar information: Now dont be a dickhead ok. You sound like a real fucking smart ass. Radar tracks of ufo's are very numerous almost everyday somewhere in the world radars track mysterious objects flying at amazing speeds backed up by uncorrelated witness's.*

Not a smart ass, merely a normally intelligent human being who is capable of assessing evidence without letting pre-existing beliefs interfere with my conclusions. You should try it.

For a start, what makes you think that what you say about so many radar tracks is true? Have you any evidence that there are such sightings "almost every day"? Do you realise that means there must be literally thousands of radar operators (they would mostly be civilian or military air traffic controllers) who keep seeing these things. Have we heard from all these people saying "the skies are dangerous to fly in because of all these unidentified amazingly fast things whizzing around"? I haven't. Have you ever wondered why the ATC union isn't making noises about that? They certainly (and rightly) complain loudly about other threats to aviation safety.

So this "evidence" is very dubious in itself, but even were it true, it is still not evidence for alien space ships. There is a vast difference between something flying fast and an alien ship being the cause of the sightings (if they exist).

*Crop Circles: Why did u skip this one?? Crop circles can be of very intricant and amazing and brainwashed people like u believe they are done naturally or by humans. These designs could not possibly be done by humans. Some are created in less than half an hour and strange glowing balls of light are seen.*

I skipped the crop circles because I, like most other thinking people, think they are arguably the most ludicrous proposition anyone has ever put forward as evidence for alien space ships. You say that the designs could not possibly be done by humans. How do you know that? Are you familiar with every single thing that humans are capable of?

It surely is significant that the rather pathetic band of individuals who are self-proclaimed "circle experts" have been fooled by hoaxed circles many times. So how come they are experts? They are, I suggest, people working on their own crypto-religious agendas. The reason why I believe that crop circles are caused by a human agency is that many of them are known, without question, to have been so caused, and precisely none have been shown to have been caused by any other agency. That is not proof that none have been caused by aliens, but in the absence of any evidence that they have been, it is certainly the way to bet.

*Animal mutilations: Ok now I am still unconvinced that aliens are responsible for this (more likely secret experiments by the us military) . The way in which they are cut up and the blood is corderised(?) suggests use of lasers. Also why is the us government so interested in cattle mutilations.*

The evidence that the US Government is so interested is what? Secret experiments by the US military? What reason can you think off that may cause the US military to be vitally interested in the soft parts of cows? I could easily believe a herd of cattle that died somewhere near a military post might have been victims of a cock-up in an experiment with nerve gas, say. But I have grave doubts about lone dead animals being found all over the USA, and having their soft tissues removed, is evidence of any possible military conspiracy. If they were interested, why wouldn't the military research lab just go out and buy a few dozen cows and do it all in secret?

I suspect that the US Government couldn't give a stuff about a few scattered dead cattle. If lots of them started dying, presumably the US Agriculture Dept might be interested, because it could be an outbreak of foot and mouth, or some other disease, but cattle dying in isolation is such a normal part of animal husbandry as to cause no surprise to anyone other than a confirmed conspiracy freak, seeking anything to boost their own sense of self-importance. Just like crop circle "experts".

I suggest you speak to a large animal vet on the effects predators can have on a dead cow. No lasers, no cauterisation, merely the effects of predation.

*My view on roswell is that a ufo did crash there and stealth planes which have only been back engineered now are examples of the technology.*

And what evidence causes you to hold the view that a UFO crashed there? All the evidence presently in play says that a formerly Top Secret, Project Mogul balloon- train landed there. The debris found certainly matches the materials used in those balloons and radar targets. Information from official records, formerly secret, but released over the past 20 years under FoI laws, shows that no one in the highest military intelligence or political circles thought that an alien ship had been captured. So why should you? You have been fed a lot of speculative bullshit by authors and TV producers, who

have good reasons to know all these details, but have chosen not to publish the *full* information. And why did they choose to censor inconvenient facts? Not being privy to their thought processes, I can't say for sure, but I'd bet the rent on "money" and "boosting self-esteem".

As for "back engineering" being responsible for stealth technology, all I can suggest is that you read a few reliable books on the history of radar and aviation and you will see how silly these propositions really are. Since radar was shown to be viable, sometime in the 1930s, military scientists have been trying to find countermeasures. As always happens in such cases, sometimes the measures are ahead, sometimes the countermeasures are (look at the case of armour vs munitions in the development of warships and tanks as an analogous example).

Present stealth techniques have been attained by steady incremental increases in knowledge. There has been no amazing breakthrough that can't be traced to previous techniques and human research. The same applies, only more so, to electronics, in case you are tempted to throw in the drivel of some recent claims about transistors being alien derived technology.

You owe it to yourself to read more widely on these subjects, rather than to take the word of people who have their own axes to grind. I'd suggest that you try to get hold of some books by Phillip Klass and you will find that many of the most widely recounted claims of UFO gurus are nothing more than self-serving lies. And you don't have to take Klass's word for these things. His work is properly documented and you can check them out for yourself.

*I knew u were a fucking smart ass and a cocky bastard as soon as i got my first email from u. I can't be bothered arguing with someone who's beliefs are already set mine are to. I believe that a lot of people who believe in god (the greatest lie of all) dont believe in extra terrestrials because they are blinded by there own arogance*

What makes you believe that I believe in God? All I told you was that I couldn't see the relevance of God to UFOs. One should believe something only after one has sufficient evidence to cause one to believe it. To me, neither gods nor UFOs meet that test, as they both rely on acts of faith, not evidence.

Have you never met someone before who would prefer to think rather than believe? You should try it some time. It opens up a world that is a great deal more interesting and exciting than dogma about extra-terrestrials and deities ever could.

*you dont even fucking know me and you are saying that i dont think.*

It's because I don't know you that I have to go on the evidence you place before me. You may be the greatest little thinker since Newton, but that is not the impression your postings convey. To each of your recountings of long discredited dogma I gave you some thoughtful (and thought provoking) explanations. Your only response was to tell me I was closed minded because I believed in God. You had no reason to assume that I believed in God, but you assumed it nonetheless. Your assumption was wrong.

*i didn't even assume you believed in god.....*

Then why all the ranting about the closed minds of religious people? I had said several times that belief in god was irrelevant to whether UFOs existed.

*none of the evidence you have conveyed to me has anything to prove that ufo's dont exist*

Of course it doesn't - I never claimed it did. I agree that *Unidentified Flying Objects* exist (although I prefer the term *Aerial Phenomena*, because they may not be flying and they may not be objects, but they are unidentified, otherwise there would be no mystery). What you have failed to do is provide any evidence that the UFO phenomenon represents visiting alien space vehicles. Nor have you given any reason to suppose that they even might be. Nor can you explain the logical path between "I saw something I couldn't recognise" and "It was an alien space ship". That is what's called a *non sequitur* - the conclusion does not follow from the evidence.

I don't have to prove that UFOs (in the form of alien vehicles) don't exist. You are the one making the extraordinary claim, it's up to you to provide the evidence that they do. So far you haven't, however, you are not alone, because no one else has either. So why do so many people believe that they do exist, in the absence of any evidence? I suspect it's as an act of faith, just like any other religious belief. Which is why I'm amused at your attacks on people for their God based religious beliefs, when UFO/aliens is quite obviously another religious belief.

I heard nothing more from the believer, but Greg Keogh, our esteemed webmeister and a keen amateur astronomer, had his own brief discussion.

#### **From Greg Keogh to the UFO believer**

Where do UFOs come from? Why do they come to Earth? How do they get here? How many types of aliens/UFOs are visiting us? Why don't they land on the lawns in front of the United Nations? If they're here in secret, why are they spotted so often? Why don't astronomers or scientists ever see UFOs? Why are so many opportunists trying to make money out of UFO folklore? Why do the aliens look just like current pop culture expects them to? Why are UFO photos incredibly blurry or obviously faked? Why are UFO movie clips so shaky and blurred? Why hasn't anyone every collected a single piece of hard evidence for UFOs such as a piece of metal, a nut and bolt, a number plate, anything?

*ok where do ufos come from?? well many hypothesis are around but zeta reticuli seem to be very common amongst abductee's. why do they come to earth?? well this is another good question and is still another question which hasn't been totally answered. i personally believe we are genetically engineered off spring from the extra terrestrials. how do they get here??? hey i will get back to you on these questions i have to finish off some work.*

This is the last message we received from the individual, so we can only assume that either he had a great deal of work to do, or he was abducted to Zeta Reticuli.

I am indebted to Greg Keogh and Steve Roberts of Vic Skeptics for helping me compile this correspondence.



## A sad collection of poor excuses

Colin Groves

*In Six Days: Why 50 Scientists choose to believe in Creation.* Edited by John F. Ashton, PhD New Holland Publishers (Australia) Pty Ltd, 1999. \$19.95.

Science is a process of finding out. Pseudoscience is a process of collecting evidence to support a prior belief. Science tests a hypothesis by seeing if it fits the available data; if it doesn't the hypothesis will be discarded or modified. Pseudoscience tests data by seeing if they fit the favoured hypothesis; if they don't, it is the data (not the hypothesis) that will be discarded or modified. As creationism is the most pervasive (and, arguably, the most blatant and most harmful) example of a pseudoscience, it is difficult to see how any scientist could be a creationist.

For years now, creationists have been uttering two mantras. One is that evolution is in terminal decline (cf. Michael Denton, 1985, *Evolution: A Theory in Crisis*; J.W.G. Johnson, 1981, *The Crumbling Theory of Evolution*; A.E. Wilder-Smith, 1981, *The Natural Sciences Know Nothing of Evolution*). As you can see from the dates of these books, the mantra in its slightly different versions has been trotted out at intervals for nearly twenty years now, yet evolution shows no sign of any crisis, nor of crumbling, and the natural sciences know as much of it as they always have done.

The other mantra is that "more and more scientists are turning to creation". I have always doubted this one too; it is after all somewhat oxymoronic for reasons given above, but that people with scientific training could nonetheless be creationists, well, it seems unlikely but unfortunately it is possible. I myself have no experience of colleagues who are creationists; I must know, personally, hundreds of my co-workers in various biological fields, and perhaps the same number again by correspondence, and I have never yet detected a whiff of creationism. Religious believers there are in plenty. If the Curator of Mammals in a certain European museum invites you to dinner, you know not to pick up your knife and fork before grace has been said (and his predecessor was actually a priest). A retired geology professor of enviable reputation (and an ardent creationist-hater) is a Presbyterian elder. A noted worker on the evolutionary ecology of Primates is a Unitarian minister. And what it is about being a Jesuit that promotes an interest in palaeontology I know not, but some reknowned experts in the fossil record and evolution of this or that group of mammals have the little s.j. after their names. Pious or pagan, all of them will sit and discuss the evolution of the group they or you are working on, and I have not yet winkled a single creationist out of the woodwork.

But now, it seems, our challenge has been answered, our bluff has been called. Here are 50 scientists - sorry, 50 people with scientific training and often working as professional scientists - who have been discovered by John F. Ashton, PhD, to be creationists, and persuaded by him to tell us why. So let us learn from the experience: who are they, what is their expertise and training, and why indeed are they creationists?

Most of the fifty are Australians or Americans; there is also the odd Brit, Canadian, South African or German. Their testimonials, which vary from two to twenty pages long, are divided into two groups, "Science and origins" and "Religion and origins", but there is not really very much difference between the two. There are 9 biologists, 13 others connected with the life sciences, and 28 working in other sciences. Of the "other life scientists" (not strict biologists), five were trained in biochemistry, two in medicine, two in horticultural/agricultural science, and one each in genetics, organic chemistry, forestry and orthodontics. Of the 28 (the majority) who trained in some field other than the life sciences, we have six trained in chemistry (not organic), five in some form of engineering, five in some branch of physics, three in meteorology, three in geology, two in geophysics, and one each in mathematics, geography, hydrometallurgy and information science. One might well ask what precisely an inorganic chemist or a hydrometallurgist might know about the evolution of life that would qualify them to speak about it with knowledge and wisdom, and one of the engineers, Stanley A. Mumma, quite unashamedly admits that his profession is unusually prone to creationism: "Engineers quite often need confidence in the literal accuracy of the Genesis account, while people educated in many other disciplines are quite satisfied to take it as allegory" (pp.300-1). But about a biologist or a geologist one can have no doubts: in theory, at least, they have the training and experience to know what they are talking about.

Some fairly famous names are there: Andrew Snelling, who recently left Answers in Genesis in Brisbane for greener pastures in the USA; Jonathan Sarfati who has taken his place; Jack Cuzzo who recently published a book on Neandertals; John Morris, son of Henry (one of the founding gurus of creationism); and Kurt Wise. These are famous not (as creationists would have it) for being top-rank scientists, but for being creationists. Some, like Jack Cuzzo, may be highly competent in their own restricted fields or, like Kurt Wise, have quite a high reputation for honesty among professional scientists, but there are no world leaders here; they are not a *Who's Who* of the sciences.

Let us right away quibble with one of the inclusions. I think we ought to remove one name from the list: Bob Hosken, Senior Lecturer in Food Technology at the University of Newcastle. He writes with equanimity of taking part in studies on amino sequences of monotremes and marsupials which elucidated their phylogenetic relationships: "While these findings were very interesting", he writes (p.111), he was much more excited by relating molecular sequences to physiological requirements: "I cannot help but attribute the complexity of the design to a Creator, rather than to random evolutionary forces." Read his words carefully: do you see a creationist in them? I think I see someone who believes in a sort of divinely guided evolution. I think that here is the result of the way creationists have hijacked the language; that when the editor asked "who

believes in creation?", Dr Hosken put up his hand, because he believes in a God. So, let's leave him out and make Ashton's total 49, though if someone should later make the case for restoring him to the list, it will not make much difference overall.

Put them in perspective a bit. Of those nine biologists, five were trained, at least in part, at religious foundation universities or colleges of one kind or another: one at Loma Linda, one at Pacific Union College, one at both Andrews University and George Mason University, two at Wheaton College (and one of them at Houghton College in addition); only four received their entire training at what I'd call "proper universities", and some of them specify that their classes in evolution were poor in some way - a hectoring or poorly prepared lecturer, for instance. Of the 12 (excluding Hosken) others connected with the life sciences, four were trained at religious institutions (Loma Linda and Andrews again, Dordt College, and Loyola University), and eight at "proper universities". Of the other 28, only three trained at religious institutions (Loyola again, Loma Linda yet again, and Phillips University), and all the rest went to mainline universities, polytechnics and so on. Could there be some significance here? Might it be that a biologist is much less inclined than others to be a creationist unless actually trained at an institution with a creationist tendency?

### Creating creationists

And how did they become creationists? Not all of them reveal this. Of those who do give their histories, no fewer than 17 were brought up as creationists; one was converted while he was in the U.S.Navy, before starting university; five were converted during their university careers; four were converted later in life (one of them by his wife). It is fair to say that, insofar as one can tell from reading their own words, all of those who were converted were already devout, and simply waiting to be pushed; friends, fellow students or colleagues would confront them with key passages from scripture and demand that they think about how, given this bit of sacred writing, they could possibly believe in evolution or an old earth. Let us note that *not one of them* purports to have become a creationist as a result of his or her own research.

And what is the evidence which they deem crucial, either in maintaining their creationist views or having converted them in the first place? 24 cite "irreducible complexity", which they take as evidence for design; seven mention thermodynamics (two cite both thermodynamics and complexity); three cite problems with the Big Bang and the evolution of the early universe, and one with radiometric dating; one cites a lack of rigour among "evolutionists"; one says he was converted by reading creationist writings, and others imply this, as they list all kinds of spurious "evidences" which could only have come from such sources (moon dust, helium in the atmosphere, sediment on the sea floor, that sort of thing). Eleven, almost certainly more honest than the rest, admit in so many words that they simply wanted or needed to believe.

Those who cite thermodynamics as a reason to believe rely not so much on the famous Second Law (increasing entropy), traditionally used as an argument against evolution, as on the First. Why should it be especially meaningful that energy/matter is neither created nor destroyed? Because in Genesis 1 it says that God created everything in six days and that was it - no

more since. The Bible, you see, correctly describes the state of affairs!

"Irreducible complexity" is rather new. After their defeats in the US courts, which regarded the allocation of "equal time" for creationism in biology classes as tantamount to sneaking a religious view into the schools, creationists anxiously sought some other ways. The publication in 1996 of *Darwin's Black Box* by Michael Behe, a biochemist, gave them what they were seeking. Behe maintained that much of the complexity in living things could not be broken down further and still function. The buzzword for this idea, which has given creationism a new lease of life, is *Intelligent Design Theory*. It is extremely significant that so many of Ashton's Fifty credit it with playing such a big part in what (for want of a better term) we may call their intellectual development.

Actually, there is nothing very new and fresh about Irreducible Complexity; it is the old God of the Gaps brought up to date by being arrayed in scientific garb. Where you can't explain something - usually some very complex biochemical process - you bring in God to plug the hole in your understanding. It doesn't mean that the unexplained is inexplicable; it's the creationist, not the scientist, who says "I cannot believe that this evolved". But it cuts a lot of ice with the general public and, as we can see, with some who should know better. Richard Dawkins has a pithy phrase to describe it: "the argument from personal incredulity".

Amid all the appeals to Irreducible Complexity and the laws of thermodynamics, there are some remarkable and revealing flashes of honesty. All creationists should read the five-page piece by Ben Clausen, who says that the evidence on the age of the earth is not by any means clear-cut:

- (1) The scientific arguments are complicated and equivocal.
- (2) Demonstrating that certain data don't require long ages doesn't prove a short-age model to be best.
- (3) More of the scientific data is currently explained by a long-age than a short-age model.
- (4) No comprehensive geologic model fits all the data, so that problems with a long-age model do not necessarily mean that a short-age model is correct.
- (5) No comprehensive, short-age model is even available to rival the long-age model.
- (6) Ultimately, any biblical short-age model would be expected to include some supernatural activity, immediately making it unacceptable as a scientific model at all.
- (7) Accepting the Bible because certain scientific models agree with it increases the likelihood that the Bible will be discarded if those particular models are later found to be inadequate. The scientific details of origins questions are interesting to study, but equivocal. I do not find the evidence for a recent creation compelling. My primary reason for accepting the scriptural account is the part it plays in the Bible's characterisation of the Creator. (pp.252-3).

And this from a man who has a Master's in Geology from Loma Linda University and, after getting his PhD in Nuclear Physics at the University of Colorado, has chosen to return to Loma Linda to work at their Geoscience Research Institute. This is a creationist? Well, the last sentence suggests that he yet might be (he is not quite another Bob Hosken), but if so the rest of the paragraph reads like a breath of fresh air.

## Why we do such silly things

Colin Keay

*How the Mind Works*, Steven Pinker, Penguin Books, 660 pp, A\$19.95, 1998

That's what I like in a serious book - insights. And more so when they are presented with great wit and lucidity. Besides evident brilliance, the author of *How the Mind Works*, Steven Pinker, must be quite a character to present so much deep-thinking material in such an earthy, iconoclastic manner.

Of the human institutions and endeavours hatched by the mind of mankind there is not a lot that Pinker fails to analyse in 600 pages of fine print. It is striking how many of our attitudes, affairs and belief systems are shaped by our Stone Age past, expressed through our genetic inheritances and comprehensively explainable as such.

The encyclopaedic reach of Pinker's treatise ranges from why men go for sex and women for money, problems with the teaching of mathematics, the role of gods and religions and the reason why females suffer morning sickness. With much, much more. All presented with pertinent jokes and verses, supportive anecdotes and an astonishing command of disciplines outside his own (psychology). For example, I have never read such a concise exposition of musical structure. I wish I had Pinker's familiarity with literature, which he calls on extensively. Skeptics everywhere will love Pinker's critical thinking. Sacred cows are slaughtered, pundits punctured and holy writ holed without fear or favour. Pseudo-science, post-modernism and creationism are unspared from his withering analyses. Even JC's sermon on the mount gets a serve (read Matthew 10: 34-37 and decide whether it upholds family values or not).

Talking of family, Pinker takes a penetrating look at parent-offspring conflict - required reading for new parents. It is enlightening to learn that a new-born baby knows the importance of eye-contact and that its cuteness is a finely honed survival mechanism.

My own discipline, physics, comes in for some penetrating comment, especially relevant to teaching. Students have to overcome the inbuilt biases of their stone-age brains - not codify them as Aristotle did.

Then there is the mind itself: its consciousness and self-awareness. In a treatment that explains so much about the mind it is a tad disappointing that Pinker presents no answers to these two deep questions. He goes so far as to suggest that our minds might not be capable of understanding them. It might be as impossible for a mind to understand consciousness as it is to visualise an object in four dimensions. But don't let this caveat deter you from acquiring such splendid brain food as this.

Less forthright, but still quite a cut above the usual dismal crowd, is Elaine Kennedy, who begins her chapter, "As a geologist, I do not find much evidence for the existence of a *fiat* creation. I just have not found any geologic data that convinces me that God spoke and 'it was'" (p.293). She then goes on to say how she struggled with radiometric dating and has finally concluded that such dates are interpretations, not data, but "Those of us who believe in a short chronology and a six-day creation do not have an adequate explanation for radiometric dates" (p.294).

The chapter by Kurt Wise, despite that author's almost uniquely favourable reputation among his "evolutionist" opponents, is a disappointment. No Clausen or Kennedy-like warnings for his weaker-brained creationist colleagues. He says merely that when he saw how much of the Bible he would have to throw away if he became a professional scientist, he turned away in sorrow from the career which he had so ardently desired.

Andrew Snelling unfortunately reveals nothing of why he fell out with AiG (the Australian creationist institution) and went to the USA. But he does say that he is going to do some work along with Kurt Wise. Perhaps, if so, he will stop pretending to be an ordinary ("old-earth") geologist at the same time as writing clap-trap for brightly coloured creationist comics; perhaps he will stop (as his erstwhile minder, Carl Wieland, expressed it) "running with the hare and hunting with the hounds". Perhaps at last, in Alex Ritchie's words, the real Andrew Snelling will at last stand up.

Will this book promote the creationist cause as its editor obviously intends? I cannot think how it would. When all is said and done, the question which neither Kurt Wise nor Andrew Snelling nor anyone else who writes in the book - not Ben Clausen, not Elaine Kennedy, not anyone except, in a very oblique way the medical researcher Paul Giam - is simply this: why choose the Bible? Why not the Vedas? (Their gods are every bit as capricious, unjust and bloodthirsty as the one depicted in the Old Testament.) Or the Rainbow Serpent for that matter? Or why not, like all those Jesuit palaeontologists, take an ethical message from the Bible and not insist that every word of what an ancient warlike Middle-Eastern tribe wrote down was historically accurate? Why this necessity to believe that the earth came into existence before the sun; to believe that a God who had found everything "good" changed his mind and drowned the lot - innocent plants, animals, children - except for a drunkard and his family? Why is this need to believe so powerful that 49 scientifically trained people are prepared to junk their principles, throw away their careers, and sink uncomplaining into a world of make-believe where facts can be invented or trimmed to suit the occasion, where reality is an illusion and illusion a reality, where you see further not because you stand on the shoulders of giants but because your pastor tells you where to look. That, my would-be colleagues, for all your scientific training is the antithesis of what science is all about; it is the sheerest pseudoscience.



## Ah, Mr Ham, you've done it again

Sir Jim R Wallaby

One of the penalties of acquaintanceship with the editor of this august journal is that one often receives his unwanted correspondence, accompanied by a curt "See what this is about" (another of the penalties is that he is such an uncouth popinjay).

It was in this manner that I received the May issue of the Answers in Genesis sales brochure, *Prayer News*. Readers can scarcely imagine how my initial dismay turned, in a trice, to unalloyed pleasure as I read confirmation of what I have been predicting in these pages for some years. At least some of those who run AiG have given up pretending that their enterprise has any scientific basis, and have finally returned to what they have in fact always been, a faintly farcical fringe fundamentalist sect with a sales strategy.

Regretably, this appears not to be a view universally accepted by the brotherhood, as some items in the brochure resolutely seek to maintain the old fiction. Could this be evidence of schisms developing within the creationist camp? Who can say? It takes a particularly strong constitution to delve too deeply into the collective psyches of those who believe they are the sole repositories of God's word, and I would rather confine myself to less debilitating pursuits. Be that as it may, I feel obliged to commend those who have adopted the new line for their (albeit long overdue) display of a measure of intellectual honesty, at least on this issue.

The astonishing revelation came from the lead article, "A young Earth - it's not the issue", written by Mr Ken Ham, the expatriate Australian\* head of AiG's North American marketing arm. What seems to have prompted Mr Ham's belated conversion is a distaste for being characterised as "a young earther", or so he claims. Mr Ham prefers to think of himself as a "revelationist, no-death-before-Adam, redemptionist", which, he then concedes, means he is a "young-earth creationist". Now that distinction might seem a trifle esoteric to those readers who, like me, are not privy to the arcane convolutions of fringe religious thought processes, but bloody wars have been fought over equally tenuous theological points. Presumably, however, the distinction makes sense to Mr Ham.

I must confess to an initial perplexity at the "no-death-before-Adam" reference - as I understood the peculiar AiG mythology there was no life *before* Adam, so "no-death" in this context appeared redundant. But then I thought again - my vague recollection of biblical stories prompted me to recall that God made every animal, from aardvark to zebra, before he made Adam, leaving at least the *potential* for a pre-Adamite demise. However it seems to me unreasonable that an intelligent creator would go to all the trouble of making a platypus, and then allowing it to die before making a man to whom he could boast of his ingenuity. It's all very mysterious. Perhaps Mr Ham, who seems to be privy to his deity's innermost thoughts, knows something we don't (laughable though that concept might seem).

The gravamen of the article appears to be that, to understand the world, you have no need for science, nor any other scholarship come to that. All you need to do is to sit down in a quiet room and read the Bible, and all will become clear. In fact, Mr Ham positively rails against scholarship and knowledge in his diatribe, thereby confirming yet another claim often made in *the Skeptic* - that the ultimate message of AiG, and other organisations of like kidney, is that ignorance is the desired (dare I say God-ordained?) state for all. They may or may not be young earthers, but they certainly subscribe to the dictum from Thomas Grey's *Ode on a Distant Prospect of Eton College*, that ignorance is bliss. Of course, this, like so much creationist propaganda, is based on a misquotation. The poet was not extolling ignorance as a virtue, merely making the observation that "if ignorance is bliss, [then] 'tis folly to be wise". A vital distinction, but much too subtle for our creationist friends, I fear.

But I shouldn't be too harsh on Mr Ham, for he does in fact practise what he preaches. His tirade is replete with appeals to ignorance and is utterly dismissive of scholarship of any kind, save for one startling claim (readers of less than robust health should stop reading here, lest the shocks to come prove too much for them). Here is Mr Ham's stated reason for believing that the world is young. To allow you to savour the full flavour, I must quote it verbatim:

Recently, one of our associates sat down with a highly respected world-class Hebrew scholar and asked him this question: "If you started with the *Bible* alone, without considering any outside influences whatsoever, could you ever come up with millions or billions of years of history for the Earth and universe?" The answer from this scholar: "Absolutely not!"

I had occasion once before in these pages to nominate Mr Ham, unsuccessfully to date, for the Nobel Prize in Stating the Bleeding Obvious (see "Ham boners exposed", 14:4 p.24), however, I suspect that this further evidence will make it impossible for the committee in Stockholm to continue to ignore his claims.

But I felt I had to be fair to Mr Ham, so I tested his methodology with an experiment of my own. I sat down with a highly respected world-class marsupial scholar and asked him this question: "If you started with *Blinky Bill* alone, without considering any outside influences whatsoever, could you ever believe that koalas can talk?" The answer from this scholar: "Of course!" I rest my case.

\* Here there seems to be a strange, but quite significant, balance of trade surplus developing in Australia's favour. The quantity of creationists we have exported to the USA in recent years (MacKay, Snelling, Ham, to name only the better known) considerably outnumber those coming the other way. It may simply be that their savvy marketing experts have detected richer pickings in the North American market than can be expected from an oversaturated (and far more sceptical) Australia, and they are chasing the easy money. Alternatively, it might just be Australia taking its revenge on the USA for Ronald MacDonald.

# The evils of fundamentalism

Anonymous

**The author of this piece is a professional scientist who recently became a subscriber to *the Skeptic*. For personal reasons he has asked that his name not be published and we are happy to comply with his request. We believe that his experiences as a member of a fundamentalist religious sect are quite chilling and stand as a warning of the dangers posed by such groups.**

This is a story of fact and opinion, from one who was once a fundamentalist. I write this to bring to mind some of the reasons we insist that sceptical thinking is a good thing. I will do so by recounting personal experiences which I believe expose some of the underlying evils of religious fundamentalism and the dangers of taking people at their word. Having been involved with fundamentalism and come out of it, I believe I may have some insights and experiences which readers may find interesting.

Whilst I was a student at a respected selective high school between the years 1980-86 in Sydney, a particularly bad brand of fundamentalists from North America (whom I would describe as an aggressive form of Aimish people) successfully infiltrated the school and managed to teach their views to unsuspecting 12-18 year-olds by covertly posing as "Scripture teachers" from other denominations. They "filled in" teacher-vacant Scripture classes, and under the guise of the respective denominations taught their form of fundamentalism to the students. Students were invited to weekend "clubs" / "youth groups" / "meetings" / "get-togethers" etc. (Really they were fundamentalist propaganda classes.) I, like many other students, went to these meetings initially to meet girls. I initially thought nothing but stupidity and madness of these people and their beliefs, but was eventually worn down through the influence of a number of my friends who had converted and the direction that religion *seemed* to give. Religion seemed to provide an answer to the normal concerns and conflicts one experiences whilst growing up.

## The damage done

Without going into too many details, the upshot of this infiltration was that a good number of students more or less abandoned their future studies and careers to go to an unaccredited and highly dubious "theological college"; caused disruption in biology and other classes; refused to play school and representative sport; refused to wear certain types of clothes; refused to go out with girls; refused to read and study certain prescribed English texts; rejected the upbringing and advice of their homes, friends, parents, and teachers; publicly burnt books, tapes, and records which were deemed "satanic"; refused to watch television; distributed hate and other forms of "literature" to all and sundry; preached in the playground, in classes, and other places; and generally caused distress, disruption, and pain for many in the school environment. I myself remember teaching creationism at organised talks which were attended by many students. Parents complained

that they had lost their sons, and the Deputy Principal did everything he could to try and stop the damage this infiltration had caused, without much success except with having a stern word to these "Scripture teachers", and expelling them from the school.

Once involved, one of the key teachings was *not* to doubt. Doubt is of the devil, and must be *hated* in all its forms. ("The devil comes along and puts doubt in your mind" is one of the statements I remember.) Firstly, one cannot question the Scriptures because they are given by God. End of argument. Secondly, one dare not doubt the interpretation of the leaders of the movement because they are expounding only the very simple message of what God has supposedly said and given to mankind thousands of years ago, and which has worked ever since. To doubt the interpretation of this supposed message is a manifestation of the devil, and immediate rejection from the Great Cause, and ones new-found "brothers and sisters"- of course the only friends one now has. For those involved who doubt and attempt to reason this can be an extremely distressing experience, because they then become the focus of the hate that is part of the strength of the system. And reason itself has no place whatsoever. Reason has already been determined by the unalterable statements of the Bible.

## Benefits of doubt

Now the philosopher Descartes said the *beginning of knowledge* is to doubt. Doubt is a very *effective* and *natural* part of our existence, that has led to many scientific and other discoveries since we came down from the trees (and probably before then). Think about this; for the fundamentalists the "devil" (doubt and reason) therefore is a primary reason we have progressed to the more civilised and modern society we live in today. This, I suspect, is also one reason, amongst many, why the Aimish and other religious groups refuse to integrate into modern society. In accordance with this is the inability to accept *change*. Why do you think the fundamentalists can't accept the evolution of one species into another? Because change doesn't really exist. God and the Bible and the world he has ordered are eternal, except where He directly intervenes such as in the myth of Noah's flood. "The devil is alive and well on planet earth" these fundamentalists say. That's quite true in one sense, He is called Doubt and Sceptical Thinking, and He is discovering ways to eliminate and reduce physical and intellectual disease, reduce poverty and exploitation, have fairer and more effective governments, and making the world a more truthful, exciting and peaceful place to live.

What was an essential catalyst that changed my thinking and got me out of the movement after a few short years was, firstly, the hearing of contradictory statements and interpretations of the Bible by different leaders in the movement, which led through doubt and subsequent *reason* to a realisation that much of their and my former interpretation of the Bible was *selective*. Once this process of independent thinking, driven by

reason, was instigated, everything fell (with time) into its rightful place. The process of doubt and reason is exactly the kind of thinking which is so important in education and our society, and which can do much to stop this kind of madness from further infiltrating our country.

### Telling lies

I agree with Professor Ian Plimer in his book *Telling Lies for God* (1997), who purports that the leaders of these religious sects deliberately lie to the populace, both in their selective interpretation of the Bible and in their purported "knowledge" of science (including "creationism"), in order to covertly attain and maintain a position of notoriety that they cannot achieve through normal life. In so doing, fundamentalism and creationism itself attains a place of notoriety, at least in the minds of those who follow it, which it does not deserve. There are countless examples throughout history where people in power have perpetrated tragic perversions of justice through a system of religious or political propaganda. One could easily argue that religious fundamentalism in Australia and elsewhere is being used by its leaders (whether consciously or not) for their own glorification under the pretence of the glorification of "God". They do this through the exploitation of people's internal instincts, such as the general promotion of "good" that is commonly associated with religion. I didn't see much charitable "good" done through fundamentalism however, only the leading of people (especially the young) down a false course of life, with a fierce hatred and ousting if they then question or leave this path. I also saw much subversive desire for power, and plenty of propaganda of fundamentalist superiority.

### A kind of madness

I am also, like many others, of the opinion that one cannot argue or debate with creationists and/or fundamentalists. Their mind is closed to normal thinking, as I was, and this illustrates what is obviously a form of madness which precludes logical thinking. I certainly would not have been persuaded by logical argument of the errors of creationism or other beliefs of fundamentalists, because part of the very structure of the thinking zealously guards against an alternative view, and thrives on the feeling of confidence and power that one is following a correct and powerful viewpoint. Any deviation from these beliefs is perceived as disastrous so one doesn't even *attempt* to view things differently. It is an immature, undeveloped, closed and dangerous form of madness which thrives on ignorance, misguided idealism (youth), and half-checked truths and distortion. One way to fight it is to present people with strong *contradictory evidence of their internal beliefs*, which forces more honest individuals into introspection and re-evaluation, which finally produces a very natural and very powerful critical mode of thinking.

While the majority involved in religious fundamentalism are sincerely deluded, if many of the so-called leaders were truly seeking the truth and the promotion of goodwill they would eventually leave the movement, much as my friends and I did. One can be involved with these groups more or less harmlessly and enjoy a degree of friendship through this type of Christianity, and that is why most fall into these movements. If one wishes to promote the truth and goodwill to-

wards others however, there are better ways to pursue this, such as through an honest professional or business career, or through various open-minded and honest community organisations.

What is the outcome of fundamentalism on the people of Australia? Most of those from my school who were involved have left the movement psychologically and emotionally damaged some time ago. Psychologically damaged for many reasons, including first being rejected by society, then being rejected by their friends for the simple crimes of doubt and reason. Damaged also for realising they have in some cases totally abandoned their future careers, and the subsequent realisation that they had lost their youth as it should have been. All for a false and out-of-date movement initially taught by maniacal religious zealots about 2000 years ago. Jesus apparently said to "leave what you are doing and come and follow me" which these fundamentalists encouraged one to do, and which many of the students I knew did, although what Jesus might have said to some disillusioned and religious Jews under oppression of Roman occupation, and indeed what that quickly perverted and maniacal religious sect of Judaism called Christianity has to do with modern Australia I don't know. The fact that many of those I knew have left fundamentalism and religion altogether strongly suggests to me that regardless of background and level of impressionability whilst young, fundamentalism's and indeed religion's influence on a person is somewhat proportional to the individual's ability to think and reason for him or herself, the teaching and fostering of which is so important in our education system.

Make no mistake about it, the organised public burning of books is an evil thing. I have seen it. The Jews in Nazi Germany after seeing this in the 1930s remembered the words of the philosopher Heine "wherever books are burned men also, in the end, are burned". Tragically for the Jews in Nazi Germany this indeed followed. In the case of the friends I knew, it was their youth and their futures that they were burning away. Such public "book burnings" are *not* essentially a symbolic expression of political or religious opinion, but a covert example of hatred and intellectual genocide, an attack on free thinking, culture, and a subversive grab for power and authority.

Fundamentalism is, in my opinion, essentially a dangerous intellectual expression of tribal-like instincts, a mind-set where the end justifies the means. The thinking dissociates one almost completely from the present, *and* from common sense for an apparently "greater cause". But to dissociate from one's senses and present awareness is a very dangerous thing. No wonder fundamentalists cannot in the least understand science, for science uses one's *senses* and *present awareness* through the experimental method to attempt to come to the truth.

And here I go into the realm of personal opinion. I believe fundamentalist-type thinking is possibly an ability of the mind left over from our animal ancestry where under the desperate struggle for existence such a mind-set was advantageous in some circumstances for survival. In such an environment ruthless instincts and the ability to suspend the concerns of the present for the "greater cause" of survival took a more central role. In such a scenario such things as the scientific method and even the truth in many ways didn't have any relevance for survival at all, at least not until a spe-

cies had advanced down the evolutionary scale quite a bit. In modern Australia the situation is of course much different. Science and the truth obviously have a great deal of relevance, and therefore this animalistic form of thinking called fundamentalism is not only morally and ethically wrong, but pretty irrelevant; it has no respect at all for scientific truth or justice, it will not lead to progress or discovery, and thus is pretty much out-of-date in our modern world.

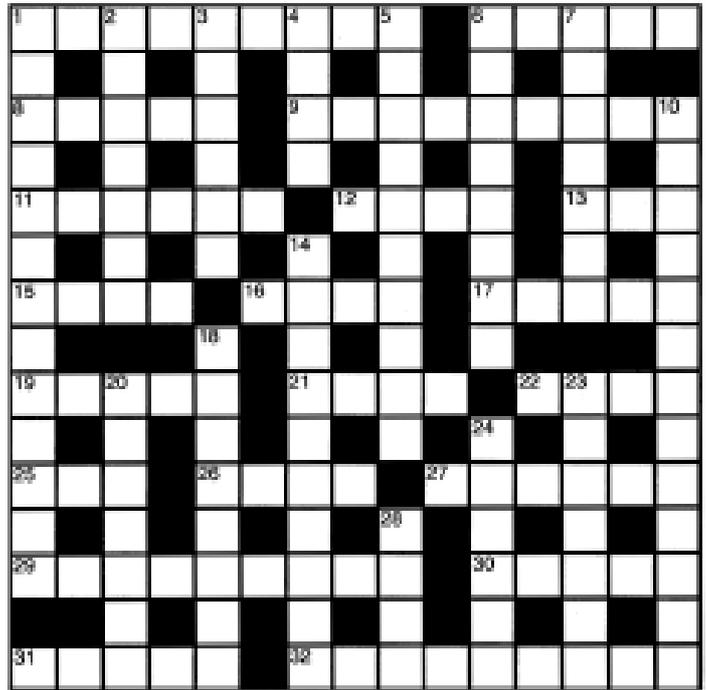
It is bad enough if organised fundamentalist thinking arises on its own accord in a country or society, but at least then that society is responsible for such, and its own future. What I can't understand is why we allow people from *other* countries to enforce or attempt to enforce their tribal-like beliefs on people in other cultures, including the young and impressionable of Australia. Like a virus, fundamentalism operates best covertly, in places with low immunity to such thinking, such as the youth on our "island continent". Can lawyers or immigration officials please tell me what these people are doing in Australia? Who granted their work visas? Is there such a thing as a religious visa? Or what about a fundamentalist visa? Is the covert dissemination of ancient tribal religions from people on the other side of the planet considered work? I am not at all against immigration, but I am against allowing fundamentalist maniacs from the other side of the world to teach their views to the youth of our country.

I believe the future of Australia will be determined by the people of Australia and not by religious zealots from ancient history and other cultures. Many millions of people, since ages past, especially those gifted with scientific ability, have fought and researched all their lives to keep this tribal mind-set out of mainstream society and in the past where it belongs. Why should we allow a few to fall by the wayside of a modern and prosperous life because of our tolerance for these maniacs? It has become like the road toll, some will be lost, at least for a time, young and old, weak and strong, but in the case of the road toll, there are laws out there to reduce this unfortunate side effect of modern transportation. I believe that the spread of fundamentalism can be reduced through better laws regarding immigration/visas, and definitely through the scientific method, reason, and sceptical thinking through publications such as *the Skeptic*. Australia can therefore be a more peaceful, fulfilling, and sane place to live. 

### Down

1. Grave love for animal science - or not animal science. (13)
2. Explosion amazes meetings. (7)
3. Awkward declaration to be more aleish than a Spanish peninsula? (6)
4. No blokes is a sign. (4)
5. A miracle curer - if it's a cure, it's a miracle! (10)
6. Omnipotent Huey. (8)
7. Uri's nationality is unreal one. (7)
10. Aunt in the broken house shed - ghostly residences. (7,6)
14. The storm broken at a temperature controller. (10)
18. Holy patroller is unknown to me. (8)
20. Poetic polo club - what a corker! (7)
23. Code for bury? (7)
24. A naughty lad has been compared with a row of tents. (1,5)
28. Spoken word from evangelist Roberts. (4)

## *the Skeptic Cryptic Crossword No 3* Winter 1999



**Return to: Skeptic Xword, PO Box 268, Roseville 2069**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Entries will not be opened until July 31 and the first correct entry opened will be the winner. The prize will be a copy of one of the books listed inside the front cover. Solution and winner of No 2 are on page 71

### Across

1. Italian island crop is a sign. (9)
6. ET has a right to hold property in lieu of debt. (5)
8. Woooo! An Aussie Yeti! (5)
9. Skinny like a torch poem. (9)
11. Right in the theme of a line like 1 across. (6)
12. Wet rogue reveals a small cave dweller. (4)
13. Give European monetary union the bird. (3)
15. Peel with gusto. (4)
16. Broken hips on board. (4)
17. Spinning dance puts a spin on the truth. (5)
19. Nothing lacks direction like what you should. (5)
21. Not an entitlement but a religious performance. (4)
22. Top toilet in the navy. (4)
25. Form of poetry is form of debt. (3)
26. Crazy Malay says he's alright. (4)
27. Shy cop turns out like 26 across. (6)
29. Little 'un gone rusty? (9)
30. Donkey bout and by a chasm. (5)
31. Fearfully symmetrical and brightly burning cat? (5)
32. That sleep disturbed by silent communicators. (9)

# Postmodernist "science" demolished

Ken Smith

***Intellectual Impostures: Postmodern philosophers' abuse of science.*** Alan Sokal and Jean Bricmont. Profile Books, 1998. 274 pp. pbk \$29.95

***A House Built on Sand: Exposing postmodernist myths about science.*** Edited by Noretta Koertge. Oxford University Press, 1998. 322 pp. hbk \$65.00

Recently there has been some discussion in the pages of *the Skeptic* about the intellectual fad which goes under the name of "postmodernism". In the last few years several books have appeared which expose the scientific illiteracy of some postmodernist philosophers, and the two books reviewed here are fairly typical of the genre.

Alan Sokal is Professor of Physics at New York University, and it was his spoof article 'Transgressing the Boundaries: Toward a Transformative Hermeneutics of Quantum Gravity', in *Social Text*, which drew the wrath of the postmodern community down on his head. Jean Bricmont is Professor of Theoretical Physics at the University of Louvain (Belgium). In preparing his article Sokal collected together a vast amount of postmodern jargon. He and Bricmont put some of this together into this book, first published in French in 1977. As indicated by the subtitle, it concentrates on blunders made by postmodernists when writing about science, mainly in physics and related areas.

Sokal and Bricmont make their point by providing extensive quotations from postmodernist writings. It is not, therefore, a book to be read at a single sitting: there are limits to the amount of garbage which one's stomach can take at one time. Someone not familiar with the background, but knowing something about modern physics, could start with the three appendices. The first of these is a reproduction of Sokal's parody. The second appendix provides an outline of some of the tricks Sokal used in putting together the article, but leaves many jokes unexplained, so that the reader can have the pleasure of discovering them. The third appendix is a follow-up to the *Social Text* article, explaining why Sokal wrote the parody, but going beyond that to make some general criticisms of postmodernist ignorance of science. This was submitted to the journal, but rejected because it allegedly "did not meet their intellectual standards". In it Sokal emphasises the distinction between the technical and the everyday meaning of words. He writes that, like true postmodernist writings about science, "my article is a melange of truths, half-truths, quarter-truths, falsehoods, *non sequiturs*, and syntactically correct sentences that have no meaning whatsoever."

Since I have spent many years involved in research into the behaviour of fluids (and turbulent boundary layers, in particular, if anyone wants more details), I looked at what some people had written in this area. On page 101 there is a quotation from Katherine Hayles, giving her interpretation of what Luce Irigaray had written. This reads:

The privileging of solid over fluid mechanics, and indeed the inability of science to deal with turbulent flow at all, she at-

tributes to the association of fluidity with femininity. Whereas men have sex organs that protrude and become rigid, women have openings that leak menstrual blood and vaginal fluids. Although men, too, flow on occasion - when semen is emitted, for example - this aspect of their sexuality is not emphasised. It is the rigidity of the male organ that counts, not its complicity in fluid flow. These idealizations are reinscribed in mathematics, which conceives of fluids as laminated planes and other modified solid forms. In the same way that women are erased within masculinist theories and language, existing only as not-men, so fluids have been erased from science, existing only as not-solids. From this perspective it is no wonder that science has not been able to arrive at a successful model for turbulence. The problem of turbulent flow cannot be solved because the conceptions of fluids (and of women) have been formulated so as necessarily to leave unarticulated remainders.

Since I am neither a biologist nor an anatomist, I hesitate to be dogmatic about differences between male and female anatomy. But since I assisted my wife in toilet training six children (three of each gender) I am under the impression that both males and females leak liquid from one opening, and that both pass solids (or semi-solids) from another opening. So where does this leave the argument?

As a mathematician (retired, which means I don't get paid for trying to explain it to people) I simply don't understand what "reinscribed in mathematics" means. And I can assure all readers of *the Skeptic* that not once, in many years of lecturing to students about different aspects of fluid mechanics, did I refer to "laminated planes and other modified solid forms". By itself this would be sufficient to dismiss all the ramblings of postmodernists as just another form of that solid which we all pass from one of our openings.

The words "The problem of turbulent flow cannot be solved" are, to put it mildly, grossly misleading. There are many problems involving turbulent flow, not just one problem. Does the writer mean the origin of turbulence? If so, this was first investigated by Osborne Reynolds in 1883, and is the subject of a vast number of scientific papers and many books. Does she mean calculating the resistive forces due to turbulence? I could refer her to some of my papers written over thirty years ago, or she could consult any book on hydraulics for information about turbulent flow of water through pipes. Does she mean that we can't calculate turbulent motions in the atmosphere (for weather forecasts on TV) for more than a few days ahead? This is due to the governing equations being chaotic in nature, and not knowing the starting weather sufficiently accurately. In short, the writer seems hopelessly ignorant of turbulence.

It's not only fluid mechanics which is abused. A quick glance through the index shows that a number of scientific or mathematical terms are listed: atomic theory, axiom of choice, compact space, continuum hypothesis, nuclear fission, quantum mechanics, solar neutrinos, ... If the relevant pages are consulted, it becomes obvious that some postmodernists (like some other people criticised from time to time in the pages

of *the Skeptic*) simply don't have a clue about science. There is a 13 page bibliography, listing all the works referred to in the text. This will enable any masochistic Skeptic to read all the postmodernist drivel she or he wants to.

Let me close with just one more quotation, from page 98: "Nietzsche also perceived his ego as an atomic nucleus threatened with explosion." I won't spoil the fun you can have by checking for yourself the date of Nietzsche's death, the date Ernest Rutherford discovered the existence of atomic nuclei, and the date Lise Meitner discovered nuclear fission. I don't know whether the rest of what postmodernists write about Nietzsche is equally erroneous, but anyone can be forgiven for assuming so.

The book edited by Koertge takes a wider view. It is a collection of articles by different authors, covering a wide range of areas of scholarship. These expose the myths being put forward by postmodernist writers. The editor explains the title of the book in the first sentence of her article introducing the book: "The 'House' in our title refers to interdisciplinary endeavours called Science, Technology, and Society Studies (STS) or Science and Culture Studies." These seem, fortunately, to be still fairly rare in Australia. Students in these talk about science, technology, society and culture, but it is not necessary to actually know anything about the content of science or technology to do this - students (and teachers) seem to get by with much mutual sharing of ignorance.

The contributors to the book, scientists, philosophers and historians, are all equally alarmed by what has been going on in the US education system. (An interesting innovation is the inclusion of their email addresses in the list of information about them.) Alan Sokal contributes a chapter about his spoof article in *Social Text*. Other names which may be familiar to readers of *the Skeptic* are Paul Gross and Norman Levitt, authors of *Higher Superstition: The Academic Left and Its Quarrels with Science* (1994), and the philosophers Philip Kitcher and Michael Ruse, who have both written critically about creationism and sociobiology.

The chapters in the book are gathered into five parts, each with a common theme. Each part starts with a very brief outline of the chapters contained in it, and each chapter concludes with some notes and a list of references. Since the book covers such a wide area of scholarship it is not possible to cover all the points made: only some of the eighteen chapters in the book will be specifically mentioned.

Part I is entitled "The Strange World of Postmodernist Science Studies". The chapters here give a brief overview of the field.

Part II is entitled "Myths, Metaphors and Misreadings". The chapters in this part expose the way postmodernists have set up myths, have taken literal scientific writing as metaphors and, like other pseudoscientists, have misread scientific work. The root cause of the problem is that they have approached science without knowing much, if anything, about science.

The next two parts both deal with the role of experiments in science. Since the test of a scientific theory is how well it agrees with what we find in the natural world, these will be considered together. Part III bears the title "Interests, Ideology and the Construction of Experiments", while Part IV is entitled "Art, Nature and the Rise of the Experimental Method".

The four chapters in Part III discuss four particular

topics, all in the area of physics, as it happens: claims about "cold fusion" of nuclei to produce vast amounts of energy; experiments to detect gravitational waves; the discovery of parity violation in weak nuclear interactions; and special relativity. In the case of "cold fusion", now discredited, postmodernists have written that the initial claim to have discovered "cold fusion" was an example of "normal science", and that the ensuing disputes showed that science was culturally determined, and not governed by what experimental work showed. In the other three cases similar claims were made. The authors of these four chapters show that, in fact, it was experimental data which finally determined the truth. They demonstrate, again, the basic ignorance of postmodernists about the scientific fields under discussion. The chapters in Part IV cover a number of historical matters. The authors demonstrate that postmodernists have misinterpreted historical facts, just as easily as they misunderstand scientific facts. They show that postmodernist claims that much of modern science is an outcome of male dominance are in error, mainly due to misreading what has happened in the past. As Margaret Jacob writes on page 242: "To this point, specialists on seventeenth- and eighteenth-century science from Robert Merton in the 1930s to Larry Stewart in the 1980s tend to agree. Only Latour and his allies interpret those centuries and what they may mean for the present in ways radically at variance with the historical evidence."

Part V is entitled "Civilian Casualties of Postmodern Perspectives on Science". This title is slightly misleading, since the section deals with the disastrous effects postmodernist ideas have had on education about science. But it is quite true that there are a number of civilian casualties. The main problem is that so many people, particularly among those responsible for publishing or presenting science to the public, or involved in education at the school level, have been trained in the humanities, not the sciences. They are thus open to the blandishments of postmodernism, and do not have available the information needed to refute erroneous claims. In the first chapter of this part Noretta Koertge quotes (on page 260) the part of Hayle's work cited by Sokal and Bricmont (see above) on fluids. She then says "The more one knows about the history of science, however, the more preposterous these assertions seem." This seems to be one major problem: lack of appreciation of the history of science can lead to all sorts of errors about the nature of science, and failure to understand why it is so successful in providing information about the way the world works.

If the book seems too formidable to wade through, those interested could consult it in a library (given the rather high price), and read at least Koertge's introductory chapter, and the introductions to each section.

So far the excesses of postmodernism seem to be largely confined to USA. However, given the way in which today's nuttery in USA becomes tomorrow's nuttery in Australia, it is well to be prepared. On page 257 of her book, Noretta Koertge writes about the concerns many people in USA have expressed: "... the amount of money spent on extremely dubious health procedures, ranging from the relatively benign old-fashioned homeopathic remedies to new psychological therapies for 'recovered memory syndrome' that can be extremely destructive. There is also concern about the salience of antirational and pseudoscientific mythologies in our culture (eg, angel books, astrology col-

umns, and TV programs on 'unexplained mysteries', as well as the persistence and success of the 'creation science' movement)."

These topics (among others) have been of concern to Australian Skeptics, and these books offer anyone with a Skeptical mind valuable resources for combating yet another aspect of the irrationalism which is widely prevalent in the modern world. 

## Another view

James Gerrard

*Intellectual Impostures - Postmodern philosophers' abuse of science.* Alan Sokal and Jean Bricmont. Profile Books Ltd 1998. 274pp. pbk \$29.95

Alan Sokal, Professor of Physics at New York University, is famed for his success in having his parody of postmodernists' use of scientific language - "Transgressing the boundaries: Toward a transformative hermeneutics of quantum gravity" - published in all seriousness in 1996 by the American cultural-studies journal *Social Text* "in a special issue devoted to rebutting the criticisms levelled against postmodernism and social constructivism ...". This hoax brings to this Australian mind the publication in *Angry Penguins* in 1944 of the poems of a fictitious Ern Malley, an imposture perpetrated by James McCauley and Harold Stewart.

More seriously, one asks why do the postmodernists' get away with "a load of old tosh" (John Henley in *The Guardian*)? I consider it arises, particularly in the humanities/philosophic circles, from the bottom line "publish or perish". It seemingly does not matter if it is nonsense, provided it contains a complement of fashionable jargon.

Sokal's parody contained only a fraction of the nonsensical, but authentic, quotations about physics and mathematics by prominent French and American intellectuals discovered in Sokal's research. Sokal joined with Jean Bricmont, Professor of Physics at the University of Louvain in writing this book to explain to a wider audience why the quotes are absurd or simply meaningless. The authors show how intellectuals such as Lacan, Kristeva, Irigaray, Baudrillard and Deleuze have repeatedly abused scientific texts and terminology: either using scientific ideas out of context or throwing around scientific jargon without regard for its relevance.

The other purpose of the book is to attack the postmodernist view that modern science is nothing more than myth, a narration or a social construction. Some examples of the abuse of scientific terms: "we learn from Lacan that the structure of the neurotic subject is exactly the torus", "from Kristeva that poetic language can be theorised in terms of the cardinality of the continuum, and from Baudrillard that modern war takes place in non-Euclidean space - all without explanation". The last example is no protection against NATO bombs.

The authors give a good account of the scientific method in providing the best understanding of the world about us. As practising scientists they reject Popper's reliance on "falsifiability" as incomplete and inadequate; verification has been found to be the keystone of science. Popper's attempt to put science in a logical strait-jacket has led many postmodernists astray in their understanding of science. The authors point out that

whilst there does not exist "a complete codification" of the scientific method, yet "the experience accumulated over three centuries of scientific practice has given us a series of more-or-less general methodological principles - for example, to replicate experiments, to use controls, to test medicines in double blind protocols".

They give a good illustration of how such a scientific approach is used in criminal investigations. "Nearly every investigation involves inferring the unobserved (who committed the crime) from the observed. And here, as in science, some inferences are more rational than others. The investigation could have been botched, or the 'evidence' might have been fabricated by the police." "... no one can write a definite treatise on *The Logic of Criminal Investigation*. Nevertheless ... no one doubts that, for some investigations (the best ones), the result does indeed correspond to reality".

In their final chapter - the Epilogue - the authors conclude that much of the postmodernist view has arisen from tension between the humanities and social sciences and the natural sciences. They put forward what they see as conditions for a fruitful dialogue to overcome such tension. A big distinction that needs to be appreciated is that the "natural" sciences are those where controlled experiments to test theories can usually be carried out which is not usually the case for the social sciences.

A factor not specifically addressed by the authors for this tension is the low level of scientific literacy, certainly in Australia, USA, UK and no doubt in France where most of the postmodernist intellectuals have arisen. In a scientifically illiterate society (c. 90%) it is easy for nonsensical ideas to take hold. American skeptic and author, Mark Twain, put his perceptive finger on another factor in 1907 (*Christian Science*) - that we all tend to be specialised.

In a church assemblage of five hundred person, ... they are all capable thinkers - but only within the narrow limits of their specialised trainings. Four hundred and ninety of them cannot competently examine either a religious plan or a political one. A scattering few of them do examine both - that is, they think they do. With results as precious as when I examine the nebular theory and explain it to myself.

I had the same difficulty, as a non-specialised philosopher, when I examined the many philosophical ideas in this very important book. 

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## Footnote

Given the recent skirmishes in postmodernist thought (is that an oxymoron?) in the magazine, I thought readers might find the Alan Sokal website interesting. Sokal wrote the famous spoof of sociological nonsense, "Transgressing the Boundaries: Towards a Transformative Hermeneutics of Quantum Gravity", and his site has a comprehensive set of material on the consequences of the article, as well as the article itself.

The address is:

[www.physics.nyu.edu/faculty/sokal/index.html](http://www.physics.nyu.edu/faculty/sokal/index.html)

Another fun piece was an article in the *Sydney Morning Herald*, Sat 10 April 1999, Page 7S, called "Words without Music" on *The Journal of Philosophy and Literature* Bad Writing Contest.

Peter Evans  
Epping NSW

## A riposte to a reply to a response

It's hard to argue with someone who ends up disagreeing with themselves rather than you, but there are still a number of points I would like to make in response to Linden Salter-Duke's letter in the last issue of *the Skeptic* (19:1, p.57), concerning my critique (18:4, pp.41-4) of her earlier article on postmodernism (18:3, pp. 44-5). Linden says:

Both critique writers charge me with oversimplification. To this I plead guilty... but oversimplification is such a rare offence in postmodernist writing that I hope to at least be credited with the virtue of originality.

Sorry Linden, but oversimplification is rife in postmodernism. Of course, a lot of postmodernism is ridiculously unclear and filled with pretentious jargon, but sometimes when you can get clear on roughly what postmodernists are saying, you find that their points are very simplistic. This especially applies to the historical claims that many postmodernists make.

Linden accuses me of making the 'elementary fallacy' of *petitio principii*, or begging the question, that is, assuming the conclusion I was arguing for as a premise. But this is not so. The topic in question was whether facts and values can be distinguished (or something along those lines - what exactly Linden was arguing was not clear). She implied that the fact-value distinction is untenable in the light of the fact that Darwinism has been used to support some dubious moral positions. I pointed out that this does not follow, and that she seemed to be unaware of some basic distinctions here. I also claimed that the fact-value distinction can be upheld. At no stage, though, did I claim to present any arguments for the fact-value distinction, which is why I cannot be said to have assumed the conclusion of my argument as a premise, for there was no argument. Nor were my claims 'hand-waving', as she suggests. I was simply expressing my opinion, and one which I'm happy to back up with argument given the space, but the main priority I had at the time was to point out the mistakes Linden had made.

Amusingly, Linden says that a comparison between my article and Mark Newbrook's is illuminating. As an example, she approvingly quotes a couple of sentences where Mark explains the difference between the skeptical and postmodernist position. This, I think, is itself illuminating. The main difference between my quote and Mark's was that Mark withheld judgement on the fact-value distinction, whereas I expressed my opinion (and pointed out that Linden's arguments were fallacious). This is a typical postmodernist move (and one that in my experience is common in academic discussions involving postmodernists).

Postmodernists are all too happy to give their dubious opinions on anything under the sun, and pay little attention to backing up their claims with any kind of good reasons or arguments, but as soon as anyone expresses a contrary opinion, the postmodernist will damn them for being partisan, and for 'stifling discussion'. Anyway, in her response to me Linden ends up undermining her own position on the fact-value distinction, so there is little point me saying anything more

about that here. She starts off with an apparently strong claim:

I believe that it is no more possible to think about the world without an ideology than it is to speak in English without an accent.

But then she says:

I'll go further: if a theory is ideological, that does not stop it being true. Darwin's theory of evolution by natural selection is an excellent example: a child of rampant 19th century capitalism, it is nevertheless true (I think).

She doesn't seem to realize that the latter claim, far from going 'further' than the first, is at odds with it, or at least it defuses the apparently controversial nature of the first. If a theory can be true, and we have methods of finding out whether it is true, then what does the postmodernist claim that 'everything is ideological' amount to? Linden certainly cannot continue to hold anything like the sort of view that many postmodernists hold, that objective knowledge is impossible (because, for example, 'beliefs are a function of power relations'). What's more, she has conceded that the fact-value distinction can be made, at least to a large degree and despite the fact that she quotes Mark Newbrook as saying that the postmodernist position is that this distinction cannot be made even to a degree, which she agrees is the point.

So what is Linden holding, then? That while scientific theories are true, some people hold beliefs, or at least put forward theories, for ideological reasons? No kidding. This is hardly news to anyone. The point of science, after all, is to strip away the ideology to get to the facts. I should also point out that it is not at all clear what 'ideology' is supposed to mean here, but I won't go into that, except to ask this question: what 'ideology' determines my belief that the heart is what pumps blood around the body?

Postmodernism does not mean the end of critical thinking, or of constructive dialogue. What it does require, however, like any other dialogue, is a desire to communicate rather than score points, a respect for other people's opinions even when we disagree with them, and sheer good manners.

This may be true of Linden's position, but it's about as wrong as you can get in regards to postmodernism. Some of the central ideas of postmodernism are that all talk is nothing but rhetoric, what counts is to win, that 'all communication is miscommunication' (as Derrida claims), and that the use of logic, reason and science is nothing but a tool of oppression. And what characterizes the writing of postmodernists more than anything else is their sheer bad manners. Bad manners, at least towards anyone who disagrees with them, is in fact written into the very heart of postmodernism. And that's why my writings in regards to this topic are perhaps a bit peevish: it's because I've been annoyed too often by the unfair tactics of postmodernists.

I would nevertheless like to buy Linden a beer sometime, though!

Scott Campbell  
University of London UK

## Post postmodernist relativism

Readers of *the Skeptic* 18:4 and 19:1 may be aware of an altercation about postmodernism between Scott Campbell, Mark Newbrook and Linden Salter-Duke. Unfortunately relativism seems to have been caught in the crossfire and so with the editor's indulgence (for which I am afraid he will not be well treated) I would like to present some defence.

I have not read Linden's original article. I do not have a certified specialty. I am not well read generally. And I could not possibly emulate the likes of Ian Plimer who has apparently read great volumes of creationist literature. If scholarship is self-mortification then I will never be a scholar. I hope, however, that it is possible to have insight and good judgement without these things.

Of Linden I will only say that I find the fun she has with her husband revolting and that if I am ever in Humpty Doo I will take my sheer bad manners to some other pub (19:1 p.57). If I find Scott Campbell working through his 82 vodkas well and good, but I won't attempt to match him in the Socratic art.

Of post-modernism I will say equally little. If a sentence can be spiked with a negative and no one (but particularly the author) notices, then the world will be no poorer if the sentence is erased. This method, I suspect, would leave the literature of post-modernism considerably reduced (and a great deal more philosophy besides). If the method is used in examinations perhaps the next generation of academics will be less facile.

The first offence to relativism is from charming Scott Campbell where he writes (18:4, p.48, footnote 7);

More sophisticated forms of idealism and relativism can perhaps be made somewhat respectable, even though I still think they are wrong and ultimately foolish.

The second offence is from Mark Newbrook where he uses the phrase (18:4, p.46) "*retreat into relativism*", a comment that might be harmless except that 'relativism' is obviously being used as a term of abuse.

In a similar manner, Mark uses the phrase "*extreme relativist claims*" (18:4, p.47). Heaven knows what 'extreme relativism' is and I have no intention of looking in Linden's article to gain an inkling. Life is too short. If I had to guess I'd say he means 'extreme believism' and that is a topic (believism) that will be discussed further below.

### Relativism

The fundamental tenet of relativist philosophy is the assertion that there are no absolutes. Such a view has ample empirical evidence to support it. The uncertain nature of learning, meaning, understanding and language make it difficult to see how certainties can be framed using language. And experience generally, although it obviously supports the idea of reality, is dependent on perception and always contains the uncertainties of illusion and delusion. Science, as the use of language to explore reality, has proven extremely powerful and has achieved many Certainties but it is generally agreed that it cannot achieve final unfalsifiable Certainties.

Perhaps the prevailing view can best be stated as - there are absolutes but we can't find them or cannot know

or aspire to them. Apart from being quaintly religious there is a sniff of paradox in knowing about things one doesn't or can't know. Relativism has no such trouble and I will try briefly to say enough to suggest that the approach is neither a "retreat" or "ultimately foolish".

I like to use numbers as a simile for the destruction of all absolutes. We may regard infinity as the equivalent of the absolute number. But there is no ultimate highest number, ie, infinity is not a number, and thus there is no number that is absolute.

(For those interested in Cantor's transfinite numbers I would suggest that his diagonal proof does not prove there are distinguishable infinities but rather that if an infinity can be completed then there are larger infinities. Oddly, although Cantor imagined he could find the highest finite number (infinity) I understand he was unable to find the highest infinity. Whether such mathematics is regarded as relevant or taught anywhere or taught only in Catholic Universities wishing to drown their finest intellects in liberal education I do not know.)

There are many concepts that are used as absolutes that have discernible degrees but not so precisely as number. We may say there are degrees of truth ie that some things are more true than others (as discussed below with respect to scientific theories). "There is a chair in this room" is true but not absolutely so because of uncertainties of perception and uncertainties about whether it is a chair or not. Whether the sentence retains any truth because it is not in a room but some other kind of enclosed space seems a difficult question to me. And how a sentence could be framed that is more true seems even more difficult. But such an improvement cannot be discounted (although one may not be possible with the language and understanding currently available). To speak of ultimate truths (Truths) seems as unwarranted as the highest number and seems also to require the company of other absolutes eg Language and Understanding. These probably require the company of further absolutes and so on until the whole viewpoint develops into an absurd muddle. Thus absolutes are rejected on the grounds that they impose an ultimate limit on concepts that we experience in degree only.

The denial of absolutes is thought to be intrinsically problematic because it seems that to be effective such a denial would itself need to be absolute. This being so, the denial of absolutes is self-contradictory. Put in another way, if there are no absolutes, then the saying so appears to be absolutely correct and one must therefore conclude that there are absolutes. Such an argument is cold comfort for absolutists because it does not actually help them identify any absolutes.

The key to this argument is to recognize that it is paradoxical. And the solution to this paradox and a host of paradoxes like it lies in the recognition that there is no such thing as self-reference.

There are plenty of idioms that appear to involve self-reference and which are unobjectionable but close examination shows that the self-reference is not strict. I can scratch myself but myself scratching myself only achieves this apparent self-reference by giving a single name to different parts, ie my finger and my leg for example. The finger cannot scratch itself, or more

strictly the tip of the finger cannot scratch itself. I can refer to myself but that which is referring is not strictly the same as what is being referred to (just as the tip of the finger does not scratch itself). If it were it would be referring to something referring to itself and this would lead to an infinite regression.

It is easily demonstrated that self-reference paradoxes do not actually refer to themselves but depend for their effect, as the above examples do, on giving a single name to separate things.

The simplest form of a self-reference paradox is "This sentence is false". If the sentence is false then it is true and if it is true then it is false. Whether the sentence is true or false appears to be unresolvable.

Those who have understood this argument have already been tricked because "This sentence is false" doesn't actually indicate what sentence is being referred to. It is the context that creates the impression of self-reference. This is a technical matter that can be easily fixed but all such paradoxes still require the understanding to leap beyond the literal to create the supposed self-reference.

All self-reference paradoxes can be resolved by exactly resolving what is being referred to. Thus:

"This sentence is false" refers to 'this sentence' (literally).

"'This sentence is false' is false'" refers to 'this sentence is false' (literally).

The first of these two sentences does not refer to "This sentence is false", ie it does not refer to a sentence which is exactly itself and it should be obvious that no sentence can (because it must contain itself plus more words that refers back to itself). It is the second sentence that refers to "This sentence is false" and this is the sentence our understanding creates when told the first sentence is self-referential. But the second sentence is not the same as the first, and as it happens is the contrary for it is equivalent to "This sentence is true".

Sentences cannot refer to themselves; mathematical sets cannot contain themselves; there cannot be a universal virus scanner because the computer program would need to be able to protect itself and so on. Of interest to the teaching and understanding of fundamental physics is the observation that it is a non-explanation if concepts are used to explain themselves. Thus it may be a strength of modern physics that there is an unreality in its explanation of reality.

The fact that there cannot be self-reference removes the paradox of denying absolutes. To further illustrate the point suppose we deny absolutes in the following simple way: "X is not an absolute". One can regard this as true or false as one pleases according to what is substituted for X but no paradox arises. If we attempt the self-reference paradox and substitute the statement into itself we obtain "'X is not an absolute' is not an absolute". The assertion has not been and cannot be made to refer to itself. If we try to evaluate this assertion as true or false we need to eliminate X by substitution. Attempts at self reference cannot eliminate X. The sentence can be endlessly substituted but the X remains, ie, the sentence has an infinitely illusive subject and is meaningless. Only a false leap of understanding will make the sentence seem self-referential and only then will the paradox appear.

It is worthwhile returning for a moment to the darkness of mathematical philosophy because in the following case the shadow has been cast far and wide with

the result that the most awful drivel has flourished unchallenged. Kurt Godel's 'incompleteness theorem' depends for its effect on self-reference. He produces a mathematical assertion that allegedly says of itself that it is unprovable using, needless to say, self reference paradox. I need say no more on the detail here. I have revised my view of the theorem slightly in the last ten years and I think I can accurately say of it that it may or may not be a technical *tour de force* but its achievement is nil. It demonstrates but does not prove that Bertrand Russell's Principia (one can't help noting in passing that its philosophical foundations are silly) cannot not be used to prove its own consistency. Godel's 'proof' certainly does not establish that there are unprovable truths in mathematics. I can boast that I got some pleasure hearing of the proving of Fermat's last theorem because some years prior to it I had denied the possibility offered by E. Kramer<sup>1</sup> that it might be undecidable (my own unpublished *On Formerly Undecidable Propositions*, late 1980's).

I would enjoy discussing relativist ethics and showing a mirror to absolutist ethics but I will not try the patience of the editor. I will conclude rather with a few general remarks. Effective relativism does not aspire to Certainty and is unlikely to be monumental, or elaborately speculative or deductive. The quest for Certainties typical of philosophy is abandoned but the taking of the broadest possible view on issues is retained. Effective relativism is most likely to be analytical and empirical (if it hopes to be sensible and achieve anything, that is). For example, a relativist is unlikely to build from a concept like mind but will rather treat 'mind' as a theoretical entity and try to understand its empirical basis, ie, it will examine what experience contributes to our understanding/learning of the word. The achievement of this approach is that one can easily conclude that minds cannot be found in brains or bodies generally. This will be news to some. One could add that relativists will probably regard 'Centers for the Mind' as wastes of money.

### Philosophy of science

I am inclined to think that scientific theories are better characterized as being in principle undogmatic (not absolute) rather than falsifiable. I had understood that Popper's idea had long since been discarded on the grounds that if you couldn't prove a theory true, you couldn't prove it false either. (There is abundant confusion in the literature which the use of a relativist's 'true' and an absolutist's 'True' would quickly resolve.) A relativist is instinctively wary of falsifiability because they would doubt that so clear and mighty a judgement could be pronounced on anything.

In practical terms, just as a relativist would expect, theories are not falsified. Some theories have been discarded initially only to become mainstream subsequently- continental drift is probably one. Some theories are eventually regarded as false (when their adherents die as Feyerabend I think puts it) but it is not possible, in principle, to distinguish between evidence that apparently falsifies a theory and evidence that mortally falsifies a theory. For example, flight does not falsify the theory of gravity.

Furthermore, theories are not so much falsified as replaced. They are not discarded merely because there are difficulties with their use. It is the aim of scientists to improve their theories but there is no reason why a scientist should not make use of contradictory theories

when there is no alternative. Theories are abandoned because they have been superseded not because there are problems with their use. The claim that a theory has been falsified is less about evidence contradicting a theory than about disparaging a theory thought to be superseded. Theories are probably best regarded as tools.

The progress of science indicates that all theories may encounter problems with their use and may be superseded. There are no True scientific theories. This can easily be explained in terms of a mathematical simile.

Suppose a scientist (mathematician) wants to summarize/comprehend 2 billion points on a number plane with one equation. This will be a very impressive achievement if the relationship between the points is a complex one. Regardless of the difficulty one cannot conclude that there is only one equation that is the true (True) equation. A mathematician may state that there are an infinite number of possible equations although the assertion may be effectively irrelevant because of the difficulty in discovering them.

Now suppose the scientist discovers that there are another 2 billion points on the number plane that need to be comprehended. If the equation comprehends them as well the scientist can feel very pleased and can be congratulated for discovering an equation that can accurately predict newly discovered points. The equation is even more impressive because of its ability to predict but it is still cannot be regarded as the final True equation (and nor is it closer to being the True equation for it makes no sense to say 10 is closer than 5 to infinity). The scientist discovers one more point and finds it does not fit the equation. The equation has been falsified but the equation will continue to be used in the absence of a better one. (In scientific practice, of course, falsification is not so simple.)

It is particularly pertinent that Newton's powerful theories of motion can be regarded as special cases of Einstein's ones. Typically, a theory is superseded when a new one comprehends (includes) the strengths of the old one and more. In like manner, scientists cannot discount further revisions. Although revisions may be practically impossible (Newton's laws could not have been revised in this way a century after publication), as in the metaphor above, we may suggest that there remain unlimited possibilities for revision (even if we make the additional demand for simplicity).

One seldom comes across a theory that does not have some power to order experience. A relativist could say of theories, whether they have been discarded or not, that they are true (or false) because the words 'true' and 'false' do not indicate degree, only extremes (or direction).

'T(t)true' and 'false' indicate how acceptable something is in the way that 'tall' and 'short' indicate height. The most important thing a relativist does is make judgements about the relative truth (or falsity) of theories. A relativist regards no theory as True although some may have achieved astronomical certainty (by today's standards it might be appropriate to add). Thus the theory that the universe is geocentric, heliocentric or 'bangocentric' may all be termed true or false (just as an object may be tall or short according to context). None are closer to being True (or False) nevertheless we can say the 'bangocentric' view is truer than the heliocentric view which is truer than the geocentric view. In general parlance we say that the bangocentric view is true and the others false in the same way that

we use the relative terms tall and short). We do this by making a judgement about their relative worth.

Many scientists would oppose relativism and call themselves Realists because they fail to recognize that relative certainty allows for assertions to have an astronomically high certainty such that they can be regarded as undoubtedly true (but not True) and similarly for falseness. (Actually, I suspect scientists hear of Bishop Berkeley's marvelous argument about the dependence of the real upon perception and give up philosophy altogether. Scientists tend to hate philosophy, partly because much of it is useless drivel and partly because they are so bad at it.)

I will pursue the distance metaphor of 'astronomical certainty' further for the purpose of producing a compulsory third simile. People imagine the earth is flat because it appears so locally. They give too much weight to their local perception and fail to abstract from the shapes and movements of the moon and sun to admit the possibility that they are positioned on the surface of a very large sphere that *appears* flat.

Thus it is that scientists fail to see that the Real is actually real because they fail to abstract from broader considerations and because they assume that if the Real is real then they would be able to experience the difference. Similarly is their approach to truth and Truth.

The expression 'extreme relativism' as quoted above is probably meant to indicate the view that true statements are not far (to continue the distance metaphor) from being false ones, a view that is obviously stupid, but possibly encouraged because probability expresses certainty numerically between the numbers 0 and 1.

### **How then does this help us deal with Creationist claims that their drivel is science?**

Without considering the matter deeply I would tentatively make the following points. The aim of any approach is to avoid giving attention and prestige to the idiots who propose it (a reward they certainly would not get otherwise), and to prevent the contagion from spreading into a destructive political force. Being articulate on the nature of science must help. We can assert that scientific theories are instruments for organising knowledge and for making predictions: they do not require belief or a judgment as to whether they are ultimately true (only a judgement as to which are more true). Perhaps the Creationists, if they wish to peddle their dogma as science, should be asked to conform to **this** scientific standard. Let them agree that all of their assertions are uncertain and can be improved. Let them improve them! If they want to compete in the science stakes let them demonstrate that they are not dogmatic. Let them state that statements in the bible may be wrong.

And when a Creationist asks, "Do you believe in evolution?" reply: "I am not a believer!" (but this is not an option for some of our noted anti-Creationists).

### **Believism**

It seems clear that not all our knowledge is articulate and written in books and that sometimes thoughtless common sense is superior to what *is* written in books. We do well, therefore to have respect for intuition, instinct, inarticulate judgements- call it what you will. 'Belief' might be included amongst these words except that it is more like a brand for the various herds of political and ethnic cattle. It is something that demands tolerance and offers none. It is something that is en-

couraged for its own sake and has little to do with our reverence for the unknown. 'Belief' is an odious word and its record of usage is filled with stupidity and hypocrisy.

Compare the difference between saying: "There is a chair in the room", with "I believe there is a chair in the room". The word 'believe' is used to cast some doubt on the assertion by personalising it. Now compare these two sentences with "There is a God" and "I believe there is a God". Here too doubt is being cast, in this case on the existence of God (as well it might!), but ironically, speakers of the latter sentence often conjoin their expressed doubt with the claim of certainty about God beyond all other certainties. To heighten the absurdity, special respect is demanded because the issue is one of belief. Here then is the heart and soul of believism and religious hypocrisy. Believers (and religious fundamentalists and evangelists) use the uncertainty implied by belief to avoid justification of their beliefs but demand special respect for their views because they are beliefs.

Thus, believism is the doctrine that the belief of an idea (over and above any evidence that can be presented in favour of it) contributes to its validity. Needless to say believism is mostly used in support of religion and related subjects.

Mark Newbrook smells like a believer. Surely there is a whiff of it in the following (18:4, p.48): "*Skeptics believe that human beings 'make truth', that truth is not 'out there', only in certain domains.*" I refer not to his use of the word 'believe' but to those certain domains. What a lovely euphemism for religion! As for Skeptics being believer in some domains, one has to sadly admit that some are, but what a sorry state Skeptics are in if being believer at least partially defines them.

Let me, as a relativist, take believer-Mark further to task. Can a linguist seriously mean the following (18:4, p.47): "*But to assert that we cannot know absolute truths is not to deny either: (a) that there may be some absolute truths; or ....*"? Prithree, in what way could there be absolute truths if we cannot know them? If we cannot know them of what relevance could they be? The remark suggests that there are truths (framed in language) that cannot be known (cannot be framed in language) which by this interpretation is a simple and direct contradiction. But perhaps I have dealt with the passage badly. Perhaps Mark has in mind the 'incompleteness' scam.

It seems unfair not to criticize Scott Campbell as well so I will return to the topic of relativism for a moment. Is Scott really insensitive to the fact that answers are conditional upon the questioner (18:4, p.42)? He cheats somewhat by asking questions that have a numerical answer. The question "What is an atom?" is logically prior (so to speak) to "What is the atomic number of lead?" and this question will be answered differently according to who asks it. Mark is not so dim-witted that he would give the same answer to a child as he would to a physics Professor. In a developing science, like a developing child, the questions and answers change.

Our esteemed editor Barry Williams is also a believer though probably not an extreme one. He writes (Skeptics homepage letterfr.htm):

They are entitled to their views, but they have no concomitant right to have their views taken seriously.

and above it:

There are scientists who are adherents of all of the world's religions, whose science is not compromised by their personal religious beliefs. There are also plenty of scientists who see no need for such a deity and who can still marvel at the intricacies of nature. The differences between them are philosophical, not scientific, and are, in any case, very personal, as are all religious beliefs.

Here too we find 'certain domains' where belief of itself adds validity to an assertion.

We can see that Barry is a long way from writing:

They are entitled to their beliefs, but they have no concomitant right to have their beliefs taken seriously.

How startling it would have been if he had! It would have been controversial and thoroughly refreshing. But reflect on why the second version, although not markedly different from the original, is controversial. Is it not depressing to see that 'beliefs' are so much more respectable than 'views'?

I would like finally to comment on the religious apologetics of another leading so-called Skeptic.

Professor Plimer's excuse for God is appalling.

There are, of course, some major problems. In mathematics, there are unprovable truths. So too with natural science. Some aspects of science are unprovable truths. (p.288 *Telling Lies for God*)

Religion is also dynamic. The new quantum physics has been a marvelous instrument for the reassessment of our Universe. The philosophical and theological implications are profound. In response to new knowledge the view of God has become dynamic and this is the most exciting implication of modern science." (pp.288-9 *Telling Lies for God*)

What a load of bunk! Does one need to be inducted into an 'incompleteness theorem' (a dud as it happens) and an uncertainty principle for the rays of God almighty to shine through? What implication of God is there in quantum mechanics? How about an article from Ian titled "God as a Scientific Concept and the Measurable Consequences of God"? (This may lead to me claiming the spotter's prize!)

Has Ian seen the retreat of God from the Universe, the retreat of the Bible from science and history and the retreat of the Mosaic religions from morality and still not understood the drift? Are the remnants of the nebulous and totally unscientific word 'God' so attractive? And if they are why such passionate criticism of the Creationists who, after all, are only trying to follow the first and vilest of the Mosaic commandments - *Thou shalt have no other God but me.*

The religious apologetics of some of our leading skeptics is hardly skeptical. And it is not without its consequences. Why, for example, is prayer not listed (so far as I am aware) as a paranormal talent for the Skeptic's Challenge? Perhaps it is a question of politics - it is better to pick on small silly minorities but not the Pope or the Queen of England and their followers.

It is not skeptical to encourage belief and prayer but scorn numerology and astrology and creationism. It is not skeptical to favor establishment religions and produce pap for them (and their elite schools).

I see no virtue in apologizing for religion. Surely it is the mother of all charlatanisms!

**Lawrence Trevanion  
Canberra ACT**

1 E.Kramer (1970), *The Nature and Growth of Modern Mathematics*, Princeton Uni. Press New Jersey 1982

## Observations on observations

I can scarcely believe it, after fifty plus years of having never written to a magazine or journal of any sort, I find myself writing to *the Skeptic* for the second time in six months. Perhaps seeing my own name in print is proving too much for a frail ego, or perhaps it's an attempt to rise above the overpowering soup of mediocrity into which life continually thrusts me, or maybe it is my equivalent of an alien abduction! Whatever!!!

One of the highlights of what many may conclude is a dull existence, is the arrival of my *Skeptic* every three months. It is with delicious anticipation that I commence what will be guaranteed an interesting, informative, and invariably humorous read. However, I do have some criticisms (naturally). I don't for a second claim to have the perspicacity, insightfulness, or biting wit of many of your contributors, but nonetheless, and with some trepidation, I raise the following points.

### Sarcasm

"Laughter is the best medicine." (Am I allowed to say that, or is it anecdotally unacceptable?) What a poor world it would be without humour. The line that separates humour from sarcasm is a fuzzy-edged and very subjective one. But should there be any place at all in Skepticism for sarcasm? Are all readers of this journal of like mind on all matters, or are we a disparate lot - I think the latter, if letters to the editor are an indication. So, without excluding humour, each article/letter should be one of reason and accuracy and this excludes sarcasm which is neither accurate nor reasoned.

I must add my meagre support to Paul Clark (19:1), Karen Stollznow's report was shallow, frivolous and laced with sarcasm showing a preconceived bias - a trait surely to be avoided at all costs by a true Skeptic. There must be many readers as disappointed as I by this type of journalism. Maureen Fitzhenry's article, on the other hand, was informative, factual, investigative and a pleasure to read. (I am now saving furiously for one of Mr Kinkel's \$1400.00 Regulators!!) Any of Richard Lead's exposures of frauds/scams and their victims are both fascinating and humorous without crossing that line into sarcasm.

### Journalistic standards

Barry, in his editorial response to Paul Clark's letter, accepts full responsibility for the journal's content. In the sporting jargon of the day, this is a big ask. Surely it is incumbent on all of us to share that responsibility by submitting material of the highest calibre in terms of logic and critical argument. (Yours truly excepted, of course.) I was interested to note that the letter from "Name Withheld" of Kaleen immediately following Paul's letter, was littered with much of the sort of material we should be striving to avoid - yet drew no critical comment. Perhaps "Kaleen's" opening caution not to expect any objectivity rendered further comment unnecessary!

### Level playing fields

Just what is wrong with anecdotal information???? I

am only joking, of course. Anecdotes (and I take my definition of anecdote from "Anecdotal Evidence and Observational Criteria" (17:2) by David Gower - now he must at least make your 2nd eleven, Barry!) are replete with hearsay, inaccuracy, bias and exaggeration and must, therefore, be treated with a great deal of caution. Should they, however, be rejected out of hand?

Are not eye witness reports the basis of anecdotal information? What history book, then, is not rife with anecdotal information purporting to be factual and recording for us an understanding and acceptance of deeds and personalities long gone? Anecdotes are the retelling of eye witness experiences (except for the made-up ones and perhaps the "they say..." ones) and can be very inaccurate even in the most honest of people if you are to believe the experts, yet they have played an integral part in the carriage of information from generation to generation for thousands of years. All that information hasn't been wrong. Anecdotes may grow with the retelling, yet their basis is an eye witness.

Surely much of the content of some surveys, whether by the Bureau of Statistics, Ford Australia, Telstra, or your local TV station reflect the collection and collation of some anecdotal information. I reject out of hand the "Miracle of the Sun" at Fatima despite being verified by several thousand witnesses (the substantial number who were there and saw nothing rarely get a mention!). Yet, I accept the deeds unquestioningly and with awe of our 20 VC winners in WW2 despite being witnessed by only a handful of their fellow soldiers.

What is good for the goose is sometimes good for the gander. Anecdotal information should not be rejected out of hand simply because it opposes our personal belief systems. Do we truthfully reject anecdotal information when it supports our beliefs? Anecdotal information should lead to scientific investigation - but is that always conclusive? Spontaneous remission in serious cancer cases is a medically accepted fact. Carl Sagan in his *The Demon Haunted World* cites the estimate to be between 1 in 10000 and 1 in 100000. It happens - science can't explain it - but it does happen. It would be the height of arrogance to assume science, at this stage, has all the answers. So the logical conclusion is that, while anecdotal information must be treated with great caution, it should not be rejected simply because it supports an opinion contrary to our own.

### Professionalism

Barry rightly states in an editorial comment "Australian Skeptics is not a professional medical body nor are we competent to enter into debates about the efficacy or otherwise of particular modes of treatment. Our concern is whether claims ... can withstand rational analysis at any level." (19:1). Yet in John Foley's investigative article "A Pox On Your House" (18:2), this creed seems to fall by the wayside.

Referring to an alternative therapist recovering from reconstructive shoulder surgery, John quips "...what happened to the preventative effect of natural medicine". Score one for *argumentum ad hominem*, score nil for logic. I

Continued p 60...

## Darwin - Lamarck - Darwin: A latter-day Trinity

Noel Bryning

“Lamarck thought in millions of years” (Sagan & Druyan *Shadows of Forgotten Ancestors*). Erasmus Darwin was prepared to think in “millions of ages”, and of evolution from a single “living filament” (Introduction to *Loves of the Plants; Botanic Garden* -Vol 2). In Vol I of *Zoonomia, or the Laws of Organic Life* 1794] he asks: “Would it be too bold to imagine that, in the great length of time before the history of mankind all warm-blooded animals have arisen from one living filament, which the *Great First Cause* endued with animality”?

Erasmus Darwin was a great philosopher/physician - a man of many parts, like the illustrious Dutchman with whose name he was baptised at birth. Jean Baptiste Pierre Antoine de Monet, Chevalier de Ia Marck had been appointed Botanist to the King in 1781 at the Royal Gardens. In the new republic, under the name Lamarck, he became Professor of Zoology at the Museum of Natural History in Paris.

It may be significant that Lamarck arrived at his theory of the “transformation of organic forms” in 1799-1800, the same year that Erasmus Darwin’s *Botanic Garden* was translated into French. “By 1800, the belief that ‘nothing in nature is immutable’ was a basic axiom in Lamarck’s natural philosophy”. [Jordanova - *Lamarck* p71]

It seems that E. Darwin gained his insight into the mutability of “living nature” through his breeding and classification of plants, in conjunction with Linnaeus the great Swedish botanist, whose works he translated into English. [He presented them in verse to “inlist imagination under the banner of Science”.] At the same time, Lamarck had his museum work of classifying invertebrates [insects etc] and conchology [shells, living and fossil], stimulating his growing belief in “transformism”\*, now generally known as evolution. He would be well aware of variations and deviations between and within species of all kinds. His researches included botany, zoology, geology, meteorology, chemistry, psychology. “The term ‘biology’ was coined by Lamarck to denote a separate science devoted to living things”. [ib] The part taken by selection in breeding and grouping would have been seen as natural in the process.

The idea of evolution was not new. It evolved from a new interest in the real world of living things, past and present. In this age of reason, freethinking skeptics were using it as a means of opposing the antiquated mythology of creation. “Lamarck arrived at his theory of the transformation of organic forms in 1799-1800 in the context of heated debates on the extinction of fossils”. [ib] The debates were public wrangles with Georges Cuvier, conservative and vindictive administrator at the National Museum, and supporters of both sides..

It becomes obvious that it is necessary to think in millions of years to comprehend evolution. Both the practising botanist/physician and the researching

\*transformisme - une transforonation continue mais tres lente’. My old French dictionary tells me that evolution is “a continual transformation but very slow”.

conchologist cum biologist had the great advantage of visualising probable patterns of change in natural forms through adaptation to climate, habitat and breeding prowess. One problem was that these patterns of change did not fit in with the established picture of creation accepted, in part at least, by the majority of decent true believers. But Charles Darwin later stressed that “the lapse of time has been so great as to be utterly inappreciable by the human intellect”.

There is the notional time factor to begin with. Time dominates our daily lives - clock, calendar - history, hereafter. To look back, our minds carry the Gregorian calendar of barely 2000 years to the beginning of “all ye know and all ye need to know”. Add another couple of thousand before and after the Christian era and we have the picture of 6000 which was asserted to be the limit of Creation. Even now there are some who cannot free their narrow minds and the collective unconscious from this false tyranny. A child sees a year as an awful long time. A century of Federation takes us back to the edge of dark ages of history. Our two centuries of the “New World” is a vista beyond the range of many. Lamarck, in his work as a leading taxonomist, introduced a new and practical way of classifying specimens from the simplest to the complex. Instead of looking backwards from latest developments in nature, he was able to look forward from the most primitive samples available, to classify them in terms of their progressive development over long periods.

We can now talk and write in millions, but can we really comprehend the immensity of time, measured in growth and changes possible in even one million years, while we make such a fuss about the end of a century and the coming millennium? Those who accept evolution, but are sceptical about Lamarckism, are not thinking like Lamarck or Erasmus D, “ in millions of years”. Most have not read their writings.

These pioneers did not have our knowledge of DNA and genes to help them in explaining the manner of transformism. They had to speculate and set the patterns leading to these later discoveries. Erasmus Darwin asked the questions, while Lamarck worked hard to answer them.

Charles Darwin, in his *Origin of Species* seems to limit his vision to the existent species and variations among them. He tends to ignore the question of early origins or even of the mutations of plant and animal specimens, from the lowest primitive levels to the high plateaux of existence reached in our time. He wrote on the origin of species, not on the origin of life in all living things. In his “Conclusion”, [ch.15], he writes, “I see no good reason why the views given in this volume should shock the religious feelings of anyone. A celebrated author and divine has written to me that he has gradually learnt to see that it is just as noble a conception of the Deity to believe that He created a few original forms capable of self-development into other and needful forms, as to believe that He required a fresh act of creation to supply the voids caused by the action of His laws”. Of course, this was in conclusion to the sixth

edition of the bestseller *Origin*. It was so much criticised by readers that Charles renounced it in favour of the first edition of his original masterpiece.

However, it seems obvious that his publisher's beat-up of the beautifully illustrated editions was just the thing to penetrate a wider public. A faithful exposition of the origins and development of natural forms from the single cell to more complex forms would have been too much for the uninitiated public to grasp. He was, no doubt, influenced by practical, lateral minded friends like Thomas Huxley and Charles Lyell, on one hand, and his dear wife and old friends, on the other. We can hardly blame Charles for bending to pressure under such great cultural changes. His work was on the anvil being beaten into shape by willing strikers of the right and the left.

Those who preach that acquired traits are not passed on to progeny should look at the pedigree of Darwin himself. As often happens, it takes more than one generation for special characteristics to show up in the family tree. Grandpa Erasmus was noted for his enthusiasm for the study of nature and the development of species through breeding. He was also a great doctor, and it was expected that Charles would follow his father, Robert, into the family profession. But softhearted Charles found that he could not stomach the horrors of surgery without anaesthetic or effective antiseptic procedures. So, although from infancy his main passion was, like that of his deviant grandpa, for natural studies, he was being groomed by a stern father for the safe and steady vocation in the clergy, when the opportunity for a naturalist's bunk on the *Beagle* turned up.

By this time, 1831, Charles had done a postgraduate crash course in geology but it needed the intervention of wise uncle, Jos Wedgwood Jr, warmly regarded by Robert, to get approval and necessary finance. Which goes to show that Grandpa's "acquired" passion for nature and selective breeding was passed on to Charles but not to Robert. The literary gift was also manifested in Charles when opportunity arrived. And who knows what modifying influences and incentives may have been inherited from his mother and grandmothers and, later, confirmed by his dear wife, Emma? She produced 11 or 12 children. When one died in infancy, Charles renounced God for allowing such a lovely child to die.

With his strong moral conscience and evident good will, it is not surprising that he suffered chronic illness with such mental conflict continually within him. On one hand he admits agreement with Lamarck over the long period. On the other, he cushions his theory in attractive marketing terms. Is this heroic martyrdom or just successful muddling through by the pro-evolution team?

In any case, Charles Darwin was forced to fame by lifting his brew off the growing flame of public interest when prompted by a famous fan letter from Alfred Wallace. It is beautiful to see how Charles shook himself up to acknowledge their common interest and to assure his new protegee that he was already on the way to completing his great work for publication. It is said that Darwin shortened his intended work and Wallace dropped his and supported Charles.

*The Origin of Species* forms an important bridge between newly interested naturalists and deep thinking scientists like Lamarck and his supporters in France and America. Alpheus Packard's book, *Lamarck - Founder of Evolution*, looks like a beat-up challenge to the *Origin*.

### ... Observations from p 58

don't think too many alternative therapists claim their treatments prevent falling down stairs, or being hit by a bus!! John refers to a lack of hygiene - no hand washing facilities on view. This is an irrelevant point in the context of skepticism - potentially important for a health inspector, but in this environment merely showing a desire to denigrate the "opposition". John refers to an anecdotal report in a health magazine claiming that a 59 year old male refused surgery for a growth on the prostate, elected to consult a naturopath and was cured in months. John's response was that "ignoring prostate cancer was like playing Irish Roulette" - and so it is - but if John is to accept the anecdote for the purpose of criticising the delay, then he must accept the anecdote's claim that the delay resulted in a cure without surgery - you can't have it both ways.

We must guard our professionalism with vigour. We might not put ourselves on a pedestal as the ultimate in logical thinkers, but others may well think that we do and the critics will look closely for the flaws in our arguments both real and imagined. Let's not make it easy for them. Don't get me wrong, I have no problem with metaphorically "sinking the boot" into seemingly illogical and senseless points of view, but when I do, I like to wear a steel capped boot to avoid breaking my toe at the same time!!

### Glass houses

If we criticise others for illogical argument, or lack of statistical support or empirical or scientific investigation, then we must avoid buying glass houses if our arguments do not reflect those same high standards. In an otherwise excellent article "Hypnosis : the facts" (17:1) Sydney Bockner, in pointing out the failure of hypnosis to live up to its claims, states that "Claims of major surgery under hypnotic anaesthesia alone have not been scientifically confirmed, in most observed cases drugs, sedation and chemical anaesthesia have been used in addition." I am sure I am not the only one who considers that the minority (by implication) that didn't need chemical anaesthesia is of some significance and must require further examination and explanation.

May I finish with an anecdote of my own. At a recent gathering of Skeptics, someone mentioned "kinesiology". "What's that?" asked a second person. "Oh, it's a new age thing where they test muscles to determine what's wrong with you" replied No 1. "Geez, never heard of that" said No 2, "what a load of bullshit!!"

**Ross Brown  
Fisher ACT**

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### ...from previous column

But he and other palaeontologists in the US universities "emphasise function over form, so fundamental a part of Lamarckian transformism". [Jordanova: *Lamarck* pp 108-110] ... "many leading French biologists were self-avowed Lamarckians", applauding his positivism "in stressing the importance of observation". [ib]

But the important thing is that all of them and the public made their contributions, echoing the old saying: "Go to the ant thou sluggard, consider her ways and be wise". [Proverbs vi 6]



# Environmentalism as a new religion

Aaron Oakley

As Skeptics, we are used to dealing with creationist crackpots, alleged psychics, uncritical UFOlogists and the like. But there is one area in which uncritical thinking and pseudoscience have strong presence that Skeptics have not made a noticeable impact.

I refer to environmentalism, which has reached the point where it is practically a new religion, complete with its own central dogmas, high priesthood, profits prophets and legions of followers ready to fight for their beliefs. They are also prepared to use and abuse science to further their causes. The popular media has not helped. Just as the media are prone to uncritically report the claims of nutty naturopaths and nonsensical new-agers, they give exposure to the ruminations and beliefs of the environmentalist set.

If environmentalism is the new religion, then what are the enviro-churches? I would like to nominate Greenpeace, the Australian Conservation Foundation and the Wilderness Society (amongst others). These churches, instead of having commandments typified by "thou shall not steal", have ones such as "thou shall not pollute". There is even punishment meted out for breaking these commandments. Instead of burning at the stake, you could get a clan of noisy protesters clamouring at your gate, occupying your place of business, or dumping genetically modified soy beans on your doorstep.

Pilgrims proceed in many directions. Some environmentalists are exploring Aboriginal spirituality and ancient Druidism; others are trying New Age ideas (note the ads for Reiki and crystal healing in some environmentalist news sheets).

Who are the new high priests of this burgeoning religion? Instead of Moses and Jesus, we have Peter Garrett and Senator Bob Brown. These environmentalist icons have been sanctified and revered even in non-environmentalist circles. (Garrett was recently named one of Australia's 'living treasures'.) The high priests, when interviewed, speak with the kind of righteousness that one would expect from a televangelist. They even have their own devils to rail against, including big business and property developers. Instead of the seven deadly sins, they have uranium mining, forestry industries, and dams.

The high priests preach salvation by political control. Thus, expanded environmental bureaucracies (headed by lesser priests), increased state control (green politicians) of industry and coercive legislation shall lead to their environmental heaven. The prophets of the new religion are scaremongers who rake in millions of dollars frightening the populace with tales of ozone depletion, overpopulation and a runaway greenhouse effect. It's a game the evangelists have played for centuries, dressed up in jargon more effective for audiences born in a scientific age. Instead of "cross my palm with silver lest the night demon eats the sun" it is "swipe your card through my EFTPOS machine lest the oil industry sabotage the Kyoto protocol".

How many of these doomsday prophecies have you heard? Global warming is real and will have disastrous

consequences unless we take action now. Overpopulation will lead to mass starvation and ecological collapse. Nuclear energy threatens our children's future. Of course, science can be a useful tool in bolstering these ideologies. But for the new religion science is just a pawn to be manipulated and abused as is necessary to achieve ideological goals.

Thus, statements from environmentalists are often a mixture of scientific truths, half-truths and non-truths, formulated specifically to meet their needs. Watch out if you go against the grain of any of these environmental ideologies. Sceptics of global warming and other supposed environmental disasters are often demonised, and it is frequently alleged that they are in the employ of the devil! (Many global warming sceptics have been accused of being paid by the fossil fuels industry.)

I would like to conclude by saying that not all environmentalists are eco-religious folk. Just as there are many doubters of Christianity, there are environmentalists who are sceptical of the environmentalist religion. These are people who refuse to jump on fashionable bandwagons, choose to think critically about the environmental debates, and use sound science in their theses. It is when one looks from the reasonable end of the spectrum to the extremist end that the religious aspects inexorably creep in.

In an article comparing environmentalism with religion, it is perhaps appropriate to conclude with a bible quote:

There is nothing new under the sun. (Ecclesiastes 1:9).




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If you're a subscriber to *the Skeptic* and you have a web site, then we'd like to link to you from our 'Links' page in the Australian Skeptics web site. A collection of links to subscribers would be a fine way for visitors to our web site to learn of the diversity of people attracted to the Australian Skeptics. If you don't mind having your web site and e-mail address published in this manner, please e-mail the following information to [greg@mira.net](mailto:greg@mira.net)

Your name (or family name, or business name)

The URL of your home page

A one line summary of your web site

This offer is only open to subscribers. Our only vague requirement is that your site be reasonably decent and coherent. Sites with skeptical content will be most welcome of course.

**Greg Keogh**  
Webmaster

## Banana bendings

Michael Vnuk

In February we heard Adam Dodd on "Negotiating the Alien Abduction Phenomenon". Adam studied the phenomenon for his BA honours thesis in communications and cultural studies in the English Department at the University of Queensland. His concern was not with whether aliens have abducted people (in fact, he was specifically neutral on the topic), but with how the stories of the abductees are recorded and treated by others.

Among other things, that many abductees have no other psychological problems and that their evidence is often very similar, suggested to Adam that a real phenomenon was involved on which he was not prepared to speculate.

He also noted that since abductees are often ridiculed, many do not even report the event. Much of Adam's data seemed to come from a Dr Mack, including a video of Mack's showing schoolchildren being questioned over a visit by aliens. However, there was a few weeks between the sightings and the interviews, which allows plenty of time for the children to talk among themselves. Adam's talk generated a lively discussion.

\* \* \*

Colin Keay, President of the Hunter Skeptics, had been saving his Fly Buys to visit his daughter in Brisbane (although she had to go off to Canberra while he was here), so we roped him in to speak at a special March meeting.

Colin covered a variety of local issues that have been addressed by members of the Hunter Skeptics, including some reported in recent issues of "the Skeptic". HIV testing over the phone was my favourite. Some of the Hunter Skeptics have been particularly active in confronting spurious electronic and magnetic devices, and alternative medicine.

\* \* \*

Our biggest attendance of around fifty people came to hear Barry Williams at the regular March meeting. Barry (who was born in Queensland) spoke on how the Skeptics started in Australia, how the organisation benefited from the huge be-

quest of Stan Whalley (also a Queenslander), the growth of the Skeptics, and how he graduated to becoming editor of *the Skeptic*.

He also commented on the millennium, the Australian Skeptics \$100,000 Challenge, the Skeptics and the media, where creationism is going, and so on.

Questions followed, and could have gone on for ages, except that Barry had to leave for another appointment.

\* \* \*

Chris Del Mar, Professor of General Practice at the University of Queensland, discussed evidence-based medicine (EBM) for our April meeting.

EBM, which Chris described as almost an accountant's view of medicine (What is the bottom-line long-term effect of a treatment?), has only begun to take off in the last few years. Although there has been much research in medicine, the collation and review of this research has not always been carried out. Chris and other workers are trying to get research results into a usable form for clinical practitioners more quickly. He discussed many general and specific results, such as whether antibiotics are actually useful for childhood ear diseases (generally no).

Dr Robyn Shirlaw also commented on her use of acupuncture in her general practice. Her justification seemed to be that her husband used it so why shouldn't she.

Interestingly, Chris had shown a graph which combined many studies on acupuncture. Although acupuncture appears to be effective when you first view the graph, analysis of the shape of the graph strongly suggests that not everyone has published their results. People working in EBM are concerned that such unpublished studies - perhaps because they have inconclusive or negative results - are giving us an incomplete picture for acupuncture and many other orthodox and unorthodox medical treatments.

\* \* \*

President Bob Bruce appeared on *Brisbane Extra*, a local Channel 9 program, with Psychic Nick. Nick is running a

contest to find the most accurate psychic to make predictions for the year 2000. The cut-off date for predictions is December 28, 1999 and the period covered is until March 31, 2000. People can enter via Nick's Web site: [www.cosmicconnections.com.au](http://www.cosmicconnections.com.au).

Bob Nixon of Vic Skeptics is coordinating the official Skeptics response, and is also a predictor in the competition. The most successful psychic will be invited to attempt the \$100,000 Challenge.

Treasurer Richard Buchhorn was on ABC Radio discussing how psychics work, the Challenge and other Skeptical matters. His appearance was prompted after the ABC had interviewed the psychic Paul Fenton-Smith about his new book.

\* \* \*

Queensland Skeptics runs its own email list (eGroup) for people to discuss, enquire about or pass on matters of interest to Skeptics. To subscribe, send a blank email to [qskeptics-subscribe@egroups.com](mailto:qskeptics-subscribe@egroups.com) and the Web master will connect you. The eGroup automatically forwards your email to all on the list. (Be discreet; you never know who is listening!)

\* \* \*

Our meeting venue is now the West End Club, 2 Vulture Street, West End. Queensland Skeptics meet on the last Monday of every month for a meal from around 6pm followed by a 7:30pm meeting. You are welcome to either or both.

Contact the Queensland Skeptics (see p4) if you are not receiving flyers before each meeting.

This venue has become much more exciting since the shooting murder there on Mother's Day. Skeptics who do not have a licence to carry arms are advised to leave their weapons at home because of an increased police presence. However, under the Queensland gun laws administration, the Authorised Officer may look favourably on a licence if you are likely to be carrying a machine gun. True.



## Tasmanian trivia

Fred Thornett

“Skepticism in Tasmania is at an all time high” or so should have gone the Government News Release. It is with deep regret that I have to inform the nation that our esteemed Premier Jim Bacon has declined to be appointed as Patron of the Tasmanian Skeptics. The letter claimed that this was due to the extensive and onerous nature of his duties. (Given the parlous nature of our economy and the never ending policy of cutbacks in Tasmanian public services it is probably best that he devote his energies solely to things other than fostering rational and searching enquiry.)

Those of you who dwell in Sydney-sur-le-hailstones or Melbourne-under-the-deluge will be delighted to know that Hobart’s lovely weather continues. Fine, clear skies, crisp clean air and no worries mate.

Our next function will be the grand Skeptical party at the Boyles residence on 26 June 1999. This will be “A Bring a Friend to the Solstice Party”. People attending will be invited to talk for five minutes on any topic of their choice. Each speaker will be followed by general discussion. It will be a BYOG function and there will be a whip around to raise funds. As we are a tolerant lot and welcome foreigners from the nameless big island to the North of the Tasmanian mainland why not buy one of the “el cheapo” discounted tickets sold by the airline of your choice and attend the party.

The branch is now an airmail subscriber to the *Indian Skeptic*. An interesting magazine indeed. And a real bargain at \$US12 per annum for twelve issues. It provides a window into the good work done by many clever chaps in the unending battle against superstition and stupidity in the second most populous country in the world. (BTW I wonder what will happen when the ageing Satya Sai Baba does his last magic trick for the adoring throngs. I hereby prophesize that he will be reincarnated in to at least 666 new bodies, each of which will be the only really, truly Satya Sai Baba the renewed.)

And now it is time for me to go riding my motorbike in the sparkling bright light of a Hobart autumn day.

## Victorian attitudes

Steve Colebrook.

As another Melbourne winter looms, Victorian Skeptics prepare for world war three, tidal waves and Armageddon generally, some good news punctuates an otherwise bleak time for all. Our regular informal get-togethers at Pugg Mahones Irish Pub are steadily becoming more popular. The invitation is open to both skeptics and non-skeptics alike (we have had one challenge to science, as we know it, complete with iron weights, spring balances and ‘text’). So, if any of you interstate folk happen to be in Melbourne on the third Monday of each month, feel free to join us at about six or so at 112 Hardware St in the city. We usually have a table reserved for the Skeptics (no challenge money for guessing that one!).

Ever since the *Liar’s Club* and 3RRR parted ways, Melbourne radio has lacked that special something. Until now - the ether surrounding our fair city is abundant with strange messages Skeptical in nature. 3AK Melbourne 1503 has given us a chance to spout our stuff every Tuesday from just after the 9pm news, Kerryn Marlow has introduced *Skeptics Corner* as part of her nightly programme *Melbourne Skyline*. So far it has been great fun and with a different topic each week, we still have enough material to keep us there till the cows come home, which even our pal Nostradamus hasn’t got a date for.

As my pen goes to paper the Vic Committee is preparing for another appearance at Great Australian Science Show. This event has been a huge success for us in the past as it gives the general public a chance to hear the Skeptical point of view. We invite one and all to have their ‘true horoscope’ revealed (the one that takes into account all 14 constellations and the precession of the equinoxes). It’s a Skeptic’s joy to point out to someone that all along they are an Ophiuchus or a Cetus.

It’s not only at science fairs that the intrepid Vic Skeps are to be seen impaling true believers on beds of nails: the Autumn Gathering at Tocumwal saw four of us invade NSW only to be punted back to sunny Victoria for a new age confest.

The story of this expedition is elsewhere in this issue.

## Western outlook

John Happs

The WA Skeptics meet 5-6 times each year at Grace Vaughan House, 277 Stubbs Terrace, Shenton Park.

Our last two meetings were certainly memorable for totally different reasons. In February we had a visit and “demonstration” from a water diviner who had heard about the Skeptic’s Challenge and felt most confident in his ability to win some easy money. I suggested to Dave that he attend our February meeting and, should he convince the WA Skeptics of his ability, we would certainly recommend that he go east for the official challenge. He jumped at the opportunity.

Dave arrived with two friends for support and a collection of divining rods. He then moved around the room showing how the rods turned downwards at particular locations although, when any of the Skeptics tried, nothing happened. According to Dave, the Skeptics generate negative energy which suppresses the divining response.

The next demonstration involved a pendulum which duly moved in a circular path when brought near “the watery spot”. When a Skeptical member dared to suggest that he could see Dave’s hand moving in a circle, this only bolstered Dave’s opinion that we were a Skeptical lot. I must say that our group was friendly, tolerant, polite and mostly supportive of Dave but when he was asked to actually demonstrate his ability to divine water in containers hidden under different piles of clothing, he replied that he had a 100% success rate, all his friends could testify to that and he didn’t see any need to demonstrate any further his divining ability. At this point, we had a coffee break and Dave and his friends departed. Subsequent telephone calls revealed that Dave felt he could not take part in our testing since skeptics obviously generate too much negative energy which interferes with divining.

Our last meeting (in April) involved a talk by Ray Johnstone on the use and abuse of statistics. This turned out to be informative, entertaining and enough to make anyone skeptical. Ray focussed on the different ways in

**Continued on next page...**

## Southerly aspect

Allan Lang

### Conference News

Saturday 6 and Sunday 7 November 1999 is the date for what we hope will be the premier Australian Skeptics National Conference. It will be held at the Adelaide Convention Centre, one of the best in the world.

As we want to present a conference which will entrance you, we have set the entrance rate for the combined Saturday/Sunday conference sessions at a modest \$40, if booked before August 31.

A special conference airfare has been arranged with Ansett Airlines, and very reasonably priced accommodation had been negotiated at hotels no further than a yogic flight from the venue. As I see if you will need a very good alibi for not attending.

The Conference Internet web site is now operating. You can use the site to arrange accommodation or airfares including the special conference airfare with Ansett Airlines. It will give updates on newly confirmed speakers, as well as details of accommodation close to the Convention centre. It also includes a survey on conference arrangements so we can arrange the off-conference program to suit you.

The site is to be found at [www.timeagain.com.au/~skeptics](http://www.timeagain.com.au/~skeptics) or it can be accessed through the Australian Skeptics site at [www.skeptics.com.au](http://www.skeptics.com.au)

Recently confirmed speakers are: Ian Plimer on the Geology of the Greenhouse, Paul Davies on Aliens on Our Doorstep: Some Thoughts about the UFO Phenomenon, and Carol Oliver on the Search for Extra-terrestrial Intelligence.

### ... WA from previous page

which data about drinking and driving accidents have been presented and how easy it is for a person to push their particular beliefs by the gentle massaging of data. We had more than a full house at this meeting and couldn't seat all those who attended.

I would urge skeptics to look at Ray's web page at:

[www.iinet.com.au/~ray](http://www.iinet.com.au/~ray)

Our June meeting will feature Jim Foley who will talk to our group about creationism and its impact.

We anticipate that other topics will include: Year 2K - Is there still time to panic?, Skeptical Sacred Sites of South Australia, and Alternative Medicine.

During the conference there will be a "SA wine tour in one room", conducted by Brian Miller, after the Saturday program. There is also the dinner on the Saturday night, and the after-dinner speaker will be the world-renowned author Peter Goldsworthy.

We are looking at seating only 150-200 at the dinner, so it is strongly advised that you book your dinner place early.

A social day is planned for Friday 5 November to show interstate visitors some of the delights surrounding Adelaide, which will of course include wine tasting in the Southern Wine region adjacent to Yankalilla, and may also include a visit to one of South Australia's Mysterious? Skeptical? Sacred? Sites.

If there is sufficient response to the web-site survey, we may be prevailed to arrange a visit to the Barossa Valley on the Monday as a post conference activity. (There is also a Mysterious? Skeptical? Sacred? Site in the Barossa.)

For further information please see the web-site or contact our Conference Organizer and President of Skeptics SA, Michelle Foster, by emailing

[michelle@timeagain.com.au](mailto:michelle@timeagain.com.au) or phoning 08 8232 4398.

You can also contact Laurie Eddie, the Secretary of Skeptics SA, by phone or fax on 08 8272 5881.

\* \* \*

The film on the Yankalilla image, *Images of Yankalilla* has now been shown on SBS. It included a brief appearance by the fat guys with beards (aka the Australian Skeptics).

Actually the film itself was quite an interesting exposition. Not on the image itself, which was shown in all its unprepossessing glory, but a rather interesting sub-text on the imbroglio in the local congregation.

It is now clearer to me why we had so many phone calls from Yankalilla parishioners wanting to complain to somebody, even a group with the un-

likely name of The Skeptics. Probably like most people I was gulled by Father Nutter's appearance: in photographs and brief TV shots he looks so warm and fuzzy. However everyone who has since commented to me about the film has confirmed the impression I had that Father Nutter did not emphasise inter-personal communication skills in his quest to establish a new religious movement. He still looks like a cuddly koala (what's the Canadian equivalent? Ground-Hog?), which only makes his rather authoritarian style the more unexpected and disturbing. Sort of like *A Life of Francis of Assisi* as written by Ayn Rand.

\* \* \*

In conjunction with the Astronomical Society we brought Seth Shostak, of the Search for Extra-Terrestrial Intelligence project, to South Australia to ask the question "Where are the Aliens?"

It was a very successful event: He gave a brilliant presentation, we managed to fill the Kerr Grant Lecture Theatre at Adelaide University, and we even covered our costs.

In fact it went so well we will be having Carol Oliver of SETI Australia at the November Convention to tell us if there has been any change in the intervening six months.

Answer: 42

Question: How many technological civilizations can we expect there to be in our galaxy?

\* \* \*

### Future Dinner and Discussion evenings

Rob Roy Hotel 106 Halifax Street 7:00PM

The first Wednesday of every even-numbered month.

If you wish to attend, it is necessary that you ring me on 08 8277 6427 to confirm your booking.

August 4

Fr John Fleming will attempt to create a pre-conference crisis of confidence for us by asking us to Be Skeptical about Skepticism.



## Canberra comment

Neil Woodger

The Canberra group has begun to recover from the impact of the National Convention and return to business as usual. We maintained our presence at the Festival of Canberra in March, running a stall at ACT Alive. Very shortly we will be moving on to the National Science Festival Exhibition where we carry the flag for Skepticism for five days at yet another stall. The event attracts a wide range of people, including school children by the bus load from the ACT and interstate.

\* \* \*

The Science Festival got off to a great start at the Academy of Science on May 1. Two magicians proved it was possible to replicate "impossible feats" using plain old human ingenuity. There were a number of slightly embarrassed people at the end of the evening whose scepticism had been threatened for a little while. Dinner afterwards with the performers, Barry Williams, and the presenters was an hilarious affair. We had **three** professional magicians doing tricks at our table, proving themselves to be amazingly clever, but shameless, show offs.

\* \* \*

We have our AGM coming up on May 30th, and will need to focus on organising our social activities to help keep up our profile.

\* \* \*

We have also agreed to be a little more adventurous and assertive. One of our committee members, Peter Barrett, discovered a booklet entitled "A Beginner's Guide to Astrology" in the gift shop at Questacon (The National Science and Technology Centre). Peter wrote to the shop to complain about the promotion of pseudo-science in such a place, only to receive a reply to the effect that "business is business". At our monthly meeting in April we decided to take the complaint to Questacon management.

# Function to honour Australian Skeptic of the Year

The NSW Skeptics will be hosting a cocktail party to present an official scroll to the 1998-99 Australian Skeptic of the Year, Professor Michael Archer, the renowned palaeontologist and Director of the Australian Museum.

Mike Archer was named as Australian Skeptic of the Year at the Skeptics Annual Convention in Canberra late last year for his outstanding work in promoting science and critical thinking. His frenetic schedule since becoming director of the Australian Museum, has made it difficult for us to find a suitable date for Australian Skeptics to make him a formal presentation of the scroll that accompanies the award.

Now the time has come and all NSW or visiting interstate subscribers are invited to attend the presentation, to be followed by a talk by the recipient, in which he will discuss his discoveries that have dramatically changed our picture of Australia's prehistory and recount his confrontations with the perpetrators of pseudoscience.

Venue

**The Skeleton Gallery  
The Australian Museum  
6 College St, Sydney**

Date

**Wednesday  
June 30**

Time

**6.00 - 8.00pm**

Cost

**(including food and drinks)  
\$40.00**

RSVP

**by June 24  
to PO Box 268  
Roseville 2069  
Ph 02 9417 2071  
Fax 02 9417 7930**

**email [skeptics@kasm.com.au](mailto:skeptics@kasm.com.au)**

or

**use the loose insert included in the issue (NSW subscribers only).**

## Biological determinism I

Without getting too involved in the details of the Mead / Freeman controversy, I would like to make a few comments on James Gerrand's review of Freeman's *The Fateful Hoaxing of Margaret Mead: A historical analysis of her Samoan research*. My main objection is against Gerrand's exposition of a fairly crude but popular biological determinism. Having not read Freeman's book, I cannot comment on whether he is Gerrand's source for these arguments, but nevertheless they require clarification.

Take Gerrand's quote that "on average about 70% of our behaviour is due to heredity, our genes, as against 30% due to our culture, our environment." First, heredity is not exclusively about genes. I inherited my ability to speak fluent English from my parents as surely as I inherited my left big toenail (see *Genes as information: A critique* in this issue). The dichotomy between hereditary and environmental factors is a false one, because environments can be inherited. A better distinction might be between genetic and non-genetic ('environmental') factors.

That issue aside, what does a statement such as "70% of behaviour is due to genetic factors and 30% is due to non-genetic factors" actually mean? Such statements are derived from analysis of variance studies based on assessing the covariance of a given trait throughout a population with variation in genetic or non-genetic factors. It is well accepted that no biological trait can be completely 'determined by' the genome, since some non-genetic input (e.g. oxygen) is always required for development of the trait. There is a tendency therefore not to speak of genes for traits but genes for trait differences. If we keep the environment constant, any variation in phenotype will be accounted for by differences in genotype. Similarly, if we keep the genome constant, any variation will be accounted for by differences in environmental factors. This is the basis of the identical twins studies cited by Gerrand. If phenotypic outcomes can vary with environmental factors, then what a gene is 'for' depends on the context in which it operates. Furthermore, the same gene sequence can play very different roles under different developmental conditions. In vertebrates, for example, the genes leading to the formation of mesenchyme, which produces spongy bone, can, when the mesenchyme is

**We welcome letters from readers who wish to comment on items that have previously appeared in *the Skeptic*, or on anything else that has tickled their Skeptical fancy. We reserve the right to edit letters for the sake of clarity or conciseness.**

allowed to interact with epithelium, produce dentin, the principal component of teeth. Genes may be difference makers, but they are *non-unique* and *context-sensitive* difference makers.

Such considerations demonstrate that attempts to measure the degree to which a certain trait, behavioural or otherwise, is genetically caused are conceptually flawed. The only allowable conclusion from an analysis of variance study is that "for the set of environmental and genetic variables represented in the sample population, x% of variation in trait T is correlated with variations in the genome and (100-x)% is correlated with variations in the non-genetic environment". The first flaw is that analysis of variance is a mere indicator, not determiner, of causation. The second is that if we change the other variables, we can completely change the degree of covariation. For example, under typical conditions, possession of the disease phenylketonuria (PKU) is 100% covariant with the presence of a certain allele in the genome. However, by modifying the environmental conditions through diet, PKU symptoms disappear and covariation is reduced to 0%.

This perspective allows us to reassess statements such as Gerrand's "the biological factor takes precedence over any culture when we come of age". Mead was misguided in trying to show a purely 'cultural' basis for sexual behaviour, as other researchers have been in trying to demonstrate a purely 'biological' basis. But trying to find the right balance between biological and cultural determiners is also misguided. Both our biological and cultural heritage play important roles throughout our lives, with sexuality emerging through a complex interaction between the two. To claim that one is more important than the other is like claiming that the handlebars of a bicycle are more important than the wheels.

**David Roche  
Helensburg NSW**

## Biological determinism II

James Gerrand's review of Derek Freeman's book *The Fateful Hoaxing of Margaret Mead: A historical analysis of her Samoan research* (19:1) grossly oversimplifies the famous (or is it "infamous"?) Mead-Freeman debate.

Gerrand accepts, uncritically and without question, the version as Freeman presents it (and as it was presented in David Williamson's play *The Heretic*). According to this account, Mead's fieldwork in her famous Samoan work was inept, superficial and biased by her "cultural determinist" assumptions. Consequently she was hoaxed into believing that Samoan adolescence was trouble free and characterised by adolescent sex without guilt. Freeman, on the other hand, started his fieldwork in Samoa as a "cultural determinist", but was convinced by years of fieldwork that this position was wrong. Freeman, by refuting Mead's errors, is subsequently treated by his anthropological peers as a heretic.

I would argue that this account is very simplistic. Many (perhaps most) anthropologists would agree. (I am an anthropologist. I mention this not in order to claim expert status, but in order to provide some support for making broad generalisations about what anthropologists think.)

I would agree that Margaret Mead's fieldwork in Samoa may well be pretty suspect. It was certainly very rapid and was probably affected by her limited ability to speak Samoan. Her specific conclusion about Samoan society (the one about guilt-free adolescence) may well be incorrect (although there is debate in anthropology about this). I think it also true that she began her fieldwork with a theory about the extent to which culture "determines" behaviour. Freeman would see this as ideology determining research results. You could put this another way: she began her fieldwork trying to falsify the alternative theory (or ideology) that behaviour is biologically determined. The point is that her fieldwork didn't really prove her theory, but it didn't disprove it either.

This is where the simplification of the debate occurs. It is presented as a simple debate between "cultural determinism" and biological determinism. Many modern anthropologists (along with many evolutionary biologists such as Stephen Jay Gould) would reject the argument presented in these terms.

Few anthropologists would deny that human behaviour involves ge-

netically shaped behaviour. Clearly, whatever else, our brains are wired largely through genetic processes. Clearly, anger ("aggression") is accompanied by biological responses (postural responses, adrenaline flowing etc). Of course human beings are "naturally" aggressive, but not all the time and not about the same things. What angers us depends on social context and learned meanings. It's not either "nurture" or "nature", but a complex interaction between biological responses, social and cultural context and individual personality. Described as a simple debate between cultural and biological determinism, the discussion is pretty sterile.

There was a very strong negative reaction among anthropologists to Freeman's views. I believe, however, that much of the reaction to Freeman's attack on Mead was due to the simplistic terms in which he presented the issue. Freeman, of course, thinks otherwise.

James Gerrand's states that "there has been overwhelming evidence in recent years from many areas, particularly from the research carried out by a Minnesota institute on identical twins that on average about 70% of our behaviour is due to heredity, our genes, as against 30% due to our culture, our environment." It's a bit hard to argue against such research findings without a more detailed reference, but I doubt that there is anything like consensus among biologists, let alone among anthropologists, about what this evidence means, leave alone whether it is "overwhelming".

Scepticism is about questioning accepted views and Derek Freeman rightly did just that, but his claims should equally be subject to a critical and sceptical analysis. There is no value in replacing one questionable orthodoxy with another.

**Bob Fisher**  
Bangkok Thailand

## Article on faith

John Warren [*the Skeptic*, 19:1 p56] comments on my *Occam's Razor* broadcast in which, as a Christian and a scientist, I attempted to reconcile Genesis and Darwin. Warren does not engage with the Genesis-Darwin issue but with what lies behind it; nevertheless he makes some assumptions about my beliefs which are not wholly accurate.

In particular I am not ignorant of JG Frazer's major work *The Golden*

*Bough*. A copy has been on my shelves for some years. I simply *disagree* with Frazer's thrust, which is to examine cultic religion and the notion of the dying god across various peoples, and try to abstract a common core of universal wisdom. In doing this Frazer presupposes that no one religion has the truth. That presupposition is what, as a Christian, I disagree with. I believe that the cultic religion of truth was Judaism, and that the dying-god aspect was fulfilled in Jesus' crucifixion; and that the diverse expression of these notions in other cultures indicates man's awareness of his need for such lifelines. I freely admit that I cannot prove it - this is my faith. But equally I deny that looking across many religions must necessarily get you nearer the truth - that too is a statement of faith, and it can be subject to very severe criticism. For, if a religion is meant to be a "theory of everything", where do criteria for comparing them come from? By definition you cannot stand outside everything. The enterprise of comparative religion is therefore intellectually incoherent; all you can do is look at one religion from the viewpoint of another. And Frazer, like many since, unwittingly looks at religions from the viewpoint of the (nontheistic) faith that has dominated the West since the Enlightenment - a faith that reason is all humanity needs.

I did not abandon reason when I became a Christian. I use it every day as a scientist and retain great respect for it. But I also recognise that I use it to navigate from a starting position to a conclusion - for example, in a mathematical proof. Where, though, does that starting position ("axioms") come from? Perhaps you can use reason to prove them from further axioms - but that merely defers the problem. Ultimately you will be driven back to axioms which you believe but cannot prove. That is a pretty good way of defining your personal faith - the f-word again. We all have one.

Warren says that reason can be applied to the supernatural as much as to the natural. I am uneasy with the split between the "natural" and the "supernatural", which stems largely from the synthesis of Aristotle and Scripture made in the Middle Ages by Thomas Aquinas. I would rather say that the universe (for Christians, the creation) has both material and spiritual facets, and that the split between material and spiritual has a complex relation to that between natural and supernatural. Logic and reason can be applied in both material and spiritual realms, its application in the former

being the glory that is Western science. It can indeed also be applied in the spiritual realms, but I believe it has limitations there because the scriptures I take as authoritative speak of angels and demons which, whatever else you take them to be, do have independent volition. Just as reason is inadequate to capture the whole of a human personality (even the most diehard Enlightenment man needs love), so too will it miss these.

As for ghosthunting, my scriptures tell me not to get involved with such things, and that is why I was relieved, after my conversion, that my involvement with the Skeptics was restricted to the defence of orthodox science.

I cannot let Hegel's typically "Enlightened" definition of freedom as the recognition of necessity go unchallenged. Was a Jew in Auschwitz really free if he recognised the truth of his situation?

Last, may I trespass on the editor's hospitality to greet all my old Skeptical friends in Australia? It was a pleasure and a privilege to have lived there in the 1980s.

**Anthony Garrett**  
Cambridge UK

## Divinity

It's always a great thrill to have confirmation that someone has actually read the stuff I write, so my thanks to John Rawson and A R Hugh for their letters in response to my article on our water divining test.

To John I would say that the evidence of our own experience is not sufficient to confirm or deny a proposition. I myself have had a similar experience to the one he describes. As subscribers of the Victorian Skeptics Newsletter will be aware, I am a member of the Dowsing Society of Victoria and at a recent meeting I was given some instruction on the ancient art. Using light rods made from coat-hanger wire I felt very little movement, nothing that I could not safely assume to be due to the wind or my own subtle movements. Then John Dickie, one of the gentlemen we tested in November 1998, handed me his heavy brass rods. I steadied them in loosely clenched fists and took only a few steps before the rod in my right hand swung dramatically through 90 degrees and pointed directly at a nearby railway station. More than that, the rod pulled at my hand. The sensation was quite disturbing, given my belief that I understood divining, but it was unmistakable. The rod in

my handed wanted to go to the right, and it wanted me, or at least my hand, to go with it.

Had I learned something? I wondered. To test what might have been a breakthrough in my own knowledge of the world I repositioned the rod, turned 90 degrees to my left and allowed the rod to fall off to the right. It took only a moment before the rod found the same position in my hand and there was that dragging sensation again, just as strong as before, and just as definite in it's desire to go to the right. This time, however, it was pointing up the rail line rather than to the station. So what had I learned? I'd learned that my right hand has a "sweet spot" for the rod, into which it fits naturally, and I learned that a heavy brass rod will seem to drag my hand to the right when it hits that position. The illusion is very real, but in my case, illusion it most certainly was.

To A R Hugh, I would, after apologising for not being sufficiently clear in my description, say that the diviners we tested both agreed to the protocol before the event. There is no standard divining test (or test of any other claim). A new test is devised for each new claim. On this occasion we were lucky in that both gentlemen made similar claims and agreed that they could find the water filled pipe inside a wooden box. Indeed, when they knew where the pipe was located they had absolutely no difficulty in doing so. Before the actual test we performed what is termed the "calibration" of the rods. The pipe was positioned in each of the four possible locations and the diviner asked to ensure that he could find it. Additionally, he was asked to ensure that if there was no pipe present in a given position, the rods gave no indication. Had there been some interference we were prepared to move the apparatus to another location. Both men found the pipe on all four occasions, and without any interference. Following the test we placed the pipe in positions one and three, with the diviner's knowledge, and asked him to find it once again. This was done to ensure there had been no degradation of the field during the period of the test. Again, each man located the pipe. All told, each man located the pipe six times without error or difficulty when they knew the location. When they were unaware of the location, each man did no better than chance would predict. The one surprise, at least for me, was the confidence with which they identified the pipe when they were not aware of its location. I had expected some hesitation, but there was none.

The design of a test like the one described is a long and sometimes tedi-

ous process, but I think my additional description here should serve to demonstrate that we go to some lengths in order to cover all the possibilities. Were we to test Mr Hugh's friend, we would design a completely different test, given his need for the water to be running. John Dickie and Shane Quinn claimed to be able to dowse water that was standing in a pipe, and that's what we tested. As I have made clear several times, I would not doubt the sincerity of anyone who claimed dowsing abilities. My attitude towards diviners is that they are not crazy, nor are they charlatans, but the evidence accumulated in many tests over many years would suggest that they are mistaken.

**Bob Nixon**  
**Victorian Skeptics**

## Apology

In the last issue we published a letter about divining which we attributed to Tom Evans. The letter was, in fact, from John Rawson. Our sincere apologies to both John and Tom for the mistake attribution, which obviously occurred because their names are so similar.

Ed

## Anomalies

Gerald Huber (*Forum* 19:1, p.55) takes issue with my suggestion in my original contribution (*Letters* 18:4, p.70) that science might replace "the assumption that on-off anomalies never occur" with one that they "rarely occur". In my original contribution the suggestion was about "one-off anomalies", not "on-off anomalies". I do not know whether the difference was a typographical error, or whether it was due to a misunderstanding, but for the purposes of the following comments I assume it was the latter.

The expression "on-off anomalies" suggests to my mind anomalous events which occur numbers of times, but in a particular case might occur, or might not occur. That is, an experiment, in a particular trial, might produce the "standard" result, or it might produce an "anomalous" result. Such anomalous results might well be treated in a statistical manner, as Huber suggested, so that after a large number of trials one might conclude that in x% of cases the result will be anomalous. This might become a modification of the original scientific law that was being tested, and might suggest further expansion or modifi-

cation of this law. The "anomalous" result would then no longer be regarded as anomalous. "Anomalous results" of this nature are related to the fact, noted by Mr Huber, that scientific truths are provisional.

As an aside, I note that Mr Huber would require a psychic healer to be able to show that he could add something to natural recovery which was a) specific, and b) miraculous. I find myself wondering why Huber wants the addition to be "miraculous" and just what he means by miraculous, anyway.

Perhaps I should emphasise that my original contribution was not an attempt to make a case for the reality of paranormal phenomena. Most (or all?) claimants for the paranormal envisage some degree of repeatability for these phenomena. Therapies in particular would be quite useless without some repeatability. Hence the phenomena should be susceptible to some kind of scientific examination. If the results favoured the reality of the phenomena, they would then have to be included in an expanded view of what is normal.

However, as already noted, my previous contribution was not about "on-off anomalies", but "one-off anomalies". The expression one-off anomalies was intended to suggest anomalous events that were only observed to occur once. The idea might be expanded to include events that occurred more than once, but in a way that was quite unpredictable even in a statistical sense. Anomalies of this type would not be related to the provisional nature of scientific conclusions if, as I suggested, these conclusions were taken to be about what usually, or nearly always, happens. In his discussion of provisional scientific results, an also in his conclusion about a claimed phenomenon when properly formulated, Mr Huber seemed to overlook the possibility of this type of anomaly. Or does he deny its possibility?

Mr Huber also quoted me as proposing that a singular report should be accepted as showing that an anomaly really did take place. This is overstating my position. My suggestion was rather that a report of a singular event (ie an event that was not repeated) should not be treated as false solely because the reported event was anomalous. Mr Huber also stated that, if my suggestion were followed, a new word would be needed to replace anomaly. I do not follow his argument here. My edition of the *Shorter Oxford English Dictionary* gives, as one of the meanings of an "anomaly", "an irregularity". That is, an anomalous event is an irregular event, an event which does not fol-

low the regular pattern. This is the sense in which I have been using the word, and I think it is the sense in which the word is most often used in scientific discussions. Some scientists may use the description “anomalous” to suggest that an observation cannot be accurate, but if so this is an indication of the very attitude I am contesting (ie that “one-off” anomalies cannot occur). I do not see any need for a change.

Mr Huber has also misunderstood my comments relating to court cases. My suggestion was not that the “new terminology could be useful in court cases”. I suggested that the new way of looking at scientific conclusions might create problems in court cases, in that the current use of scientific expert evidence might need to be rethought. I made no attempt to follow through all the implications of this. I would agree that an ideal way to deal with the misuse of “scientific” evidence in court cases would be to “throw the idiots out, ... and put the real scientists in”. But problems arise when there are two groups of scientists, both claiming to be expert, who disagree about some scientific matter; or when one group claims a result is proved and another claims it is not. Who is the court to believe? My suggestion would be that in such cases the scientific evidence be put on one side unless there is some other supporting evidence.

**Bill Moriarty  
Sunbury VIC**

## Ritz

John Winkle has been supporting my questioning of Relativity, and I thank him for his support. Some time ago, he asked me some further questions on my Ritzian position, including questions on how this position would explain changing clock readings, including those used in GPS for atomic clocks in orbit.

John noted that space-time advocates delight in telling us that the notion is counterintuitive, as though that was a recommendation. Indeed it is counter intuitive. They claim to have conquered their weak spirits and embraced ideas of “experimental evidence” over all else. We on the fringe have not conquered our daemons, have not managed to put our powers of reason behind us, and are the worse for it. Sounds a bit like “double-think” from 1984 to me.

As far as I can tell, it was not always that way. Originally, the view seemed

to be “it seems odd, but it works. We have to put up with how odd it seems”. The view has since changed to “it is a wonderful theory, and has a pleasing mathematical simplicity and elegance”. Meanwhile forgetting that you need about five years of training (depending on where you start from) to appreciate this supposed “mathematical simplicity and elegance”. I suppose that word “simplicity” is easily abused.

In any case, advocates would have you believe that petty emotions drive us to think that relativity is counter-intuitive. Most would agree an intuitive theory is better than one that is not. But there is more to it than that. Relativists would forget that time paradoxes emerge like animated corpses from the theory. They forget that we must abandon the “force parallelogram”, a simple and elegant feature of Newtonian physics. And they seem to think that a universe with a single uniform time has nothing going for it. Sure, I’m being emotional. Any less so than Relativists? That is a more telling question.

Relativity is messy, but I’m not sure I’d say self contradictory. Occam’s razor lets us pick between competing theories, but you assume the competition is meaningful.

A related idea sheds light on the issue. This is the idea of “saving appearances”, relevant to the debate over the Copernican vs the Ptolemaic solar system.

The issue was not merely of matching experimental evidence. As time went on, it was possible to add more and more “refinements” to the Ptolemaic model which accounted for more and more subtlety in observations. It became obvious that one could go on forever “saving appearances” - that is making the model match observations by making additions which were mathematically correct but stretched one’s credulity further and further. However, you had to take an objective view to realise that you were “saving appearances”. By taking things step by step, making a sequence of mathematical additions which were each on their own reasonable, you would never realise what you were doing. The conclusion is that a mathematical model which matches reality is not the be all and end all.

John asked about the corrections in the time readings of satellites in orbit around the earth. To understand the possibilities here requires a digression.

The “raw” readings certainly do need correction. Relativity does this reasonably well. But the issue is whether other approaches could also

explain these corrections. It is important to appreciate the difference between Special Relativity (SR) and General Relativity (GR), and what experiments have been performed in support of the two theories, and how they relate to each other.

First, consider a basic idea in Special Relativity. We have two “observers” with clocks approaching each other at somewhere close to the speed of light. They measure each other’s readings and find they both observe the other person’s clock slowing down. The reality is, however, that no object able to transmit telemetry in any meaningful way has been accelerated to anywhere close to the speed of light. What we’ve done is observe the lifetime of sub atomic particles, which is of necessity a one way situation. The subatomic particles can’t tell us what they think of our clocks. And they’re not really reporting the value of a clock they are taking with them. Their observed lifetime changes. Now, does this mean that their lifetime is the same, but time must be converted for our measurement of their lifetime, or does it mean that their lifetime actually *is* longer? The experiment does not distinguish between the two alternatives.

So, let us then consider GR. We add gravity to the picture, and get GR, which we apply to clocks in orbit. I concede that the theoretical values match the observed, to the extent relevant in this discussion. But why do we have faith in GR? Because the “zero case” of GR matches with SR. But, as I’ve just shown, the evidence for SR based time dilation is not decisive. So, while the results certainly match GR, we can’t really say that they meaningfully relate to what we know about SR - they just do not connect.

The next thing to keep in mind is that an observation of two clocks reading differently does not necessarily mean that there is time dilation. Consider the following thought experiment. Einstein used them, and now it’s my turn.

A pendulum will swing at one rate at the earth’s surface. If we take it to the top of Everest, it will swing at a different rate because gravity is less there. This is an effect involving Newtonian gravity, we do not need to apply any of that tedious space-time stuff. There’s no time dilation - the pendulums are merely swinging at different rates.

So, simply put, observations of clocks running at different rates does not necessarily mean time dilation from GR. It could mean the clocks are running at different rates after all.

But how might gravity affect the rates at which clocks tick? Well,

atomic clocks rely on atomic vibrations. If we apply electric or magnetic fields to a vibrating atom, it will change its frequency of vibration. These are called the Stark and Zeeman effects, and are known. It's not too much to think that there could be a similar effect related to the gravitational field. Differences in the readings of atomic clocks in different gravity fields could be equally taken as GR time dilation or a "Gravitational Zeeman effect".

John asked how the speed of light can be constant if all the parameters are relative. In Relativity the speed of light is *assumed* to be constant, and its consequences are derived on this basis. It is certainly a counter intuitive notion.

But Relativists admit that.

**John August**  
North Ryde NSW

## Y2K

William Elliott (*Letters*, 19:1) seems to be implying that the Y2K bug is not very significant. I worked briefly in computing and I consider it to be a real problem. Although the bug can be so simply stated, this does not mean that its effects can be predicted as easily, nor that it can be remedied as simply.

Like many others, I have no idea of the full extent of the problem. I know that dates are used in numerous and often unexpected parts of hardware and software, and a recent *Scientific American* article (January 1999) describes some of the difficulties of making changes to accommodate the problem. The pervasiveness of chips and computers and systems that rely on both in modern life suggests that we won't get away with it easily. I don't believe that we are facing the end of civilisation as we know it, but I'd be preparing for a period of some confusion, delay and disruption, and probably a little danger, with all depending somewhat on where you live and what systems you interact with. I am encouraged that banks, power companies, airlines and other crucial organisations we rely on have taken the issue seriously. I think that their efforts will reduce many of the potentially serious problems.

No one can say that they haven't been warned. And in less than a year we will be able to see who was the most successful at predicting the effects.

**Michael Vnuk**  
Woolloongabba QLD

## Y3K

William Elliott (*Letters*, 19:1) wants to know why so much hype and hysteria has been generated about Y2k computer problems. The answer is not in science but in politics.

If you are a middle manager trying to get funds to upgrade your plant control system, computer network, or whatever, you have to demonstrate a cost benefit. And if your old system is still working OK, how do you justify replacing it? Answer ... Y2K compliance! Just say the word and the (tax deductible) dollars appear as if by magic.

The search for truth is a noble and satisfying ideal, but political manoeuvring is more profitable. When Pilate asked Jesus "What is truth?", it wasn't because he was studying Sociology 101. He was observing the irrelevance of questions of right and wrong in political decision making.

Jane Curtain (19:1) promotes the same principle in relation to the Santa myth - if it works, do it; to hell with the truth. Simba, in *The Lion King*, sees in the stars the spirits of past kings. Pumbaa thinks they're just hot rocks. Which of the two is destined for power?

**Peter Stoddard**  
Newcastle NSW

## Y4K

A very quick one because that's all it needs. Traffic lights, power supplies and aircraft autopilots will *not* crash at midnight at the end of 1999 because the machine language instructions that these things run on is written in *hexadecimal* numbers not decimals.

The date 01/01/00 in hex which was that at the beginning of the nineteenth century will give 01/01/64 for 1 Jan 2000. Julian dates will also be in hex before they get to any significant part of the machine and so they too will be nothing like 9999 or 0000 or 00 or 99 whatever. There might be crashes at the high level program stage but they will be well before the decimal-hex conversion and all you'll get is a high-level error message, NOT a machine language crash.

You heard it first from David Hobday, just an ordinary Skeptic who actually does know what the hexadecimal number system is.

**David Hobday**  
Werribee VIC

## Censorship

Since we all know that the real motivation for Net censorship in Australia is "protecting the children" (and that no politician would ever want to restrict adults surfing the Net (sarcasm) wouldn't a solution be to require age verification by ISPs and assurances from parents that they would never allow their children to connect to their ISP? Special "child-safe" ISPs could be established for that purpose. This would be no different, conceptually, than having bars that have some sections where children are allowed and others where they are prohibited, or, for that matter, requiring children to use a child seat when carried in a car.

Another undesirable consequence of Net censorship involves projects I am involved in by way of refuting various Holocaust-denial and anti-Semitic claims. In the course of this work I have to visit some very nasty racist/anti-Semitic web sites. Presumably such sites would be banned under the forthcoming censorship regime and I would be unable to address such material that exists, and which would remain readable by people in free countries.

**David Maddison**  
Toorak VIC

## Stolen children

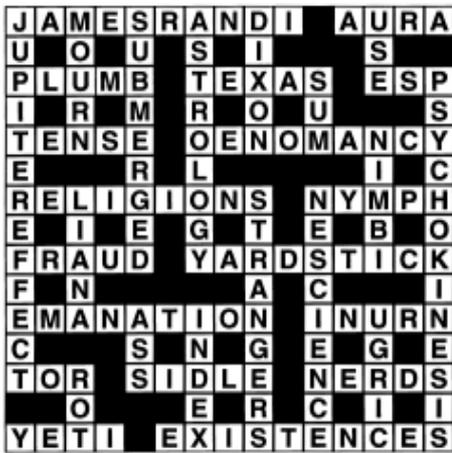
Contrary to Matthew Lally's letter (18:4, p 73), Mark Lawson's article 'Stolen Children' (18:3) deals with a topic of clear relevance to Skeptics. We see it as our business to challenge dubious (re-)interpretations of ancient history such as those of Rex Gilroy and Graham Hancock. Why should we not do likewise for recent history? Skeptics have already joined in the debate over 'Holocaust Denial'. In the Stolen Children case the views challenged have become part of the mainstream (or at least the popular/trendy mainstream), but if we are to be fair that should not deter us (especially when we know that the popular/trendy mainstream contains much nonsense).

This does not, of course, imply that Lawson is necessarily correct in his re-analysis; that is a matter for careful assessment.

**Mark Newbrook**  
Monash University VIC



About our authors



The number of entries for Crossword No 2 was somewhat more whelming than for No 1, though not yet in the overwhelming class. We urge all the cryptic Skeptics to get their entries in early for the next issue.

As before, we opened a number of incorrect entries before finding one that matched the compiler's version. (Can only highly intelligent and sceptical people make wrong answers fit just as well as right ones? Is this an example of postmodernism in action? Are there no correct answers, only equally valid ones? Is everything, even crossword solutions, relative? Discuss.)

The winner of a copy of Richard Dawkins' *Climbing Mount Improbable* was Dr Michael Pass of Woden in the ACT.

**Peter Arnold** was in general practice in Sydney for many years and is a former president of the NSW AMA.

**Noel Bryning** is a retired gent from Melbourne. More than that we re unprepared to say (because he didn't tell us).

**Guy Curtis** is an overworked psychologist completing his PhD at the University of WA. There seems to be a lot of it about (see below).

**Harry Edwards** is the recipient of a seemingly endless stream of offers (too good to refuse) from psychics. He always refuses.

**Melissa Finucane**, our 1999 Eureka Prize winner, is now a Visiting Research Associate with Decision Research, Eugene, Oregon, USA. She received a BSc (Hons), MPsych, and PhD from the University of WA.

**James Gerrand**, retired engineer and keen humanist, was the first secretary of Australian Skeptics. For some reason he is also a rabid Essendon supporter (we think).

**Colin Groves**, anthropologist at ANU and multimedia personality, exposes creationist fantasies as a hobby. His real work is far more complex.

**Colin Keay**, Grand Panjandrum of the Hunter Skeptics and astronomer, denies that he is branching out into sewage treatment.

**Greg Keogh**, webmeister of the Skeptics web site and stalwart of the Vic Skeptics, works in the computer industry (is that work?).

**Richard Lead**, the dense and malleable NSW treasurer, likes to come down on financial scamsters like a ton of, err ...lead. (What else?)

**Tim Mendham**, demon crossword compiler, taught the editor of this journal everything he knows. He should be ashamed of himself.

**Mark Newbrook**, from Monash Uni, is at the forefront of developing linguistics as a sceptical tool for exposing pseudoscience.

Bob Nixon, vice president of Vic Skeptics and co-ordinator of the Skeptics Challenge, is an inveterate reader of fringe journals. We admire his dedication, but fear for his immoral soul.

**Rosemary Sceats**, is a former maths teacher who works for a major accounting firm in Melbourne (well someone has to teach maths to accountants). She clearly hasn't lost her sense of humour and continues to intrigue us with her whimsical poesy.

**Ken Smith** is a retired mathematician from the University of Qld. A practising Christian, his confrontations with creationist pseudoscientists are legendary.

**John Stear**, retired bureaucrat (is that a tautology?) and scourge of creationist pseudoscientists, runs his NAG web site from the Gold Coast. He seems to be having some success, given the number of prayers being said for him.

**Steve Symonds** is a meteorologist and public relations officer at the Bureau of Meteorology, NSW, as well as being a passionate follower of the Sydney Swans (whatever that is).

**Sir Jim R Wallaby**, a natural aristocrat, was once offered the throne of Albania (or was that CB Fry?) and wisely refused.

**Dick Whitaker** is the manager of the Special Services Unit at the Bureau of Meteorology, NSW. He is not to blame for wet weekends or hailstorms (that's Steve Symonds' job).

**Barry Williams**, or the Mad Editor of old Barcoo St as he is known to his neighbours, is having fun learning how to drive his new computer. Fun, but limited success.

Getting away from it all?  
Don't forget to let us know your forwarding address.

